

ORIGINAL

OFFICIAL TRANSCRIPT PROCEEDINGS BEFORE

NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

DKT/CASE NO. 50-322-OL

TITLE LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station)

PLACE Hauppauge, New York

DATE January 24, 1983

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1 UNITED STATES OF AMERICA
 2 NUCLEAR REGULATORY COMMISSION
 3 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD
 4 - - - - -x
 5 In the Matter of :
 6 LONG ISLAND LIGHTING COMPANY : Docket No. 50-322-OL
 7 (Shoreham Nuclear Power Station) :
 8 - - - - -x

9
 10 Third Floor, B Building
 11 Court of Claims
 12 State of New York
 13 Veterans' Memorial Highway
 14 Hauppauge, New York 11787

15 Monday, January 24, 1983

16 The hearing in the above-entitled matter
 17 convened, pursuant to recess, at 10:30 a.m.

18 BEFORE:

19 LAWRENCE BRENNER, Chairman
 20 Administrative Judge

21 JAMES CARPENTER, Member
 22 Administrative Judge

23 PETER A. MORRIS, Member
 24 Administrative Judge
 25

1 APPEARANCES:

2 On behalf of Applicant:

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10 On behalf of the Regulatory Staff:

11 BERNARD BORDENICK, Esq.

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C O N T E N T S

WITNESSES:

DIRECT

CROSS

REDIRECT RECROSS

BOARD

Louis D. Johnson and
Joseph P. Novarro (Resumed)
By Mr. Miller

18,827

(Afternoon Session.....18,869)

Louis D. Johnson and
Joseph P. Novarro (Resumed)
By Mr. Miller
By Mr. Ellis
By Judge Morris
By Judge Brenner

18,873

18,875

18,940
18,955

P R O C E E D I N G S

(10:30 a.m.)

1 JUDGE BRENNER: Good morning. We received on
2 Friday the County's filing advancing its so-called
3 Halipatt's Contention, if we can call it that. Responses
4 of the staff and LILCO are due this coming Friday,
5 January 28th. We want to receive them by 3:00 o'clock
6 at our offices. The parties, of course, are not
7 precluded from continuing to discuss the matter before
8 and after the filing of the response.

9 On another subject, the County's cover letter
10 dated January 21st, 1983, which enclosed its Halipatt's
11 filing, states in the second paragraph that the County
12 will not be filing today its response to LILCO's motion
13 for partial summary disposition of SC Contention 8/SOC
14 Contention 19(h), Environmental Qualification. The
15 County's response will be filed shortly.

16 The Board is completely mystified by that.
17 Can the County enlighten us?

18 MR. MILLER: Judge Brenner, it's my
19 understanding from discussions with Mr. Lanpher that the
20 County would expect to file its response sometime today.

21 JUDGE BRENNER: It was due on Friday and there
22 was no request for an extension.

23 MR. MILLER: I gather that the press of trying

1 to prepare the County's findings precluded getting the
2 response in last Friday.

3 JUDGE BRENNER: Well, we might or might not
4 have been willing to grant an extension but that is not
5 the point. There was no request for one, and we don't
6 do business like that in this proceeding. We have had
7 occasion to comment on that at least once before.

8 We were prepared on schedule to argue it this
9 morning. We expect to get to the litigation of that
10 matter as soon as we finish Torrey Pines. I don't know
11 when that will be, but it could be this week. Any
12 suggestions?

13 MR. DYNNER: Judge Brenner, I think that I
14 should claim at least perhaps partial responsibility, if
15 not total responsibility, in conveying what my
16 understanding was of the Board's views from our
17 discussion last Thursday.

18 I had taken down in my notes that -- and this
19 may have been incorrect -- that the Board would not hold
20 the County to a one-day response for a substantial
21 matter such as a motion for summary dismissal, and
22 apparently, that was not what the Board meant.

23 JUDGE BRENNER: What we said -- at the time we
24 made those comments, it was before we had seen the LILCO
25 motion. We had been orally told by LILCO that it would

1 be filing a motion for summary disposition. We stated
2 that depending upon the nature of the motion we would be
3 willing to, or might be willing to, entertain a request
4 for extension of time.

5 We received no request for an extension of
6 time, and as it turns out, the nature of the motion is
7 not a very difficult motion to deal with, as some
8 motions for summary disposition potentially can be.

9 We have got the schedule here, and the fact
10 that we have afforded you the luxury of shifting
11 attorneys around and not having to bring an attorney in
12 just to get a message as to when things were due or to
13 request an extension of time is no excuse for the party
14 not to communicate properly among its counsel. And we
15 were anxious to argue the motion today. The way we
16 resolve it will affect the way people have to prepare
17 for cross examination on the issue and so on.

18 We will attribute it this time to a failure of
19 communication among counsel. We expect it not to occur
20 again. The dates for electrical penetrations and
21 containment isolation are as established. We expect to
22 hold to those dates in the absence of a particularly
23 good cause. An extensive motion for summary
24 disposition, had it been that, might have been good
25 cause.

1 We expressed last week why we do not have the
2 time to divert things, because we might want flexibility
3 to be able to handle those issues in certain ways. And
4 we have to insure that the testimony is filed on time in
5 order to do that, and preliminary motions and responses
6 are heard and argued on time. The dates for arguing
7 those motions are as we have established, so it is the
8 parties' business to have the attorney who's going to
9 argue it here before us on those days.

10 We are going to argue this motion tomorrow;
11 that is, the motion for summary disposition on
12 environmental qualification. We want to receive
13 whatever written response the County is going to file
14 just as soon as possible and no later than tomorrow
15 morning before we begin the proceeding. That is, about
16 8:30 tomorrow morning. If you can get it here by 5:00
17 o'clock tonight, that would be appreciated, but we won't
18 hold you to that.

19 MR. IRWIN: Could I respect that LILCO also be
20 hand-served with that?

21 JUDGE BRENNER: Just a minute. If there's any
22 uncertainty as to dates in the future, just ask us. But
23 just don't let it go silently by.

24 All right. In response to Mr. Irwin's
25 interjection, the other parties should certainly be

1 served immediately, too, so they can be prepared to
2 argue it.

3 It might assist the County for us to tell you
4 preliminarily that we don't view the motion or the
5 support by the staff as a classic motion for summary
6 disposition, notwithstanding its labeling. We do view
7 it as a well-founded motion for a more definite
8 statement as to what the County seeks to put into
9 controversy with respect to that subpart of the
10 contention. And we certainly expect, as part of the
11 County's written response, to hear what it is the County
12 seeks to litigate in that subpart.

13 I suppose we are agreeing with the staff and
14 LILCO that one cannot simply from reading that subpart
15 of the contention know what it is the County wishes to
16 litigate within it. Our thinking is that it is an
17 already-admitted contention, and the staff is somewhat
18 off the mark in just harping about specificity and basis
19 of the state.

20 However, under our prehearing authority and
21 powers as set forth in the applicable provisions of the
22 regulation, it is within our authority and within sound
23 hearing management to find out more specifically what a
24 party wants to litigate on the eve of trial. That is
25 done sometimes for prehearing conferences, when the

1 testimony is already filed at that time.

2 We also have used cross examination plans to
3 enlighten us. Cross examination plans were due today,
4 and we expect to receive those on today's due date. And
5 perhaps that will assist us in understanding what
6 specifically the County seeks to litigate in that
7 subpart. Maybe, Mr. Dynner, that will assist the
8 County's thinking in its response. We do expect to see
9 the cross plans today. If that is a problem, let us
10 know.

11 Those are the only preliminary matters we
12 had. Do the parties have any?

13 MR. ELLIS: I have a preliminary matter on
14 Torrey Pines, Judge Brenner, that I would like to take
15 up. May I do that now?

16 JUDGE BRENNER: Are there any preliminary
17 matters other than those related to Torrey Pines?

18 MR. IRWIN: Yes, Judge Brenner, I have two.
19 The first is that an agreement with respect to subparts
20 (a) and (b) of Suffolk County Contention 8/SOC
21 Contention 19(h) Environmental Qualification, and also,
22 a total resolution of SOC Contention 19(i), Seismic
23 Qualification, has been signed by all parties. And I
24 will provide copies to the Board and the reporter at
25 this point and ask that it be bound into the record if

1 the Board accepts it.

2 (The documents referred to follows:)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of)	
)	
LONG ISLAND LIGHTING COMPANY)	Docket No. 59-322 (OL)
)	
(Shoreham Nuclear Power Station,)	
Unit 1))	

AGREEMENT WITH RESPECT TO PARTIAL RESOLUTION OF SUFFOLK COUNTY
CONTENTION 8/SOC CONTENTION 19(h) - ENVIRONMENTAL QUALIFICATION,
AND RESOLUTION OF SOC CONTENTION 19(i) - SEISMIC QUALIFICATION

A. ENVIRONMENTAL QUALIFICATION

Suffolk County Contention 8 and SOC Contention 19(h) both deal with environmental qualification of equipment at Shoreham Nuclear Power Station. Subsequent to the filing of the contention, the parties and their consultants have met on numerous occasions and have exchanged information and documentation. On the basis of these meetings and exchanges, Suffolk County and SOC have determined that their concerns with respect to paragraphs (a) and (b) of Suffolk County Contention 8 and paragraphs 1 and 2 of SOC Contention 19(h) have been resolved, and those portions of the contentions are hereby withdrawn. With this exception, Suffolk County Contention 8 and SOC Contention 19(h) remain issues available for litigation and decision in this proceeding.

B. SEISMIC QUALIFICATION


SOC Contention 19(i) deals with seismic qualification of equipment at Shoreham Nuclear Power Station. Suffolk County has indicated its independent interest in this contention. Following the filing of this contention, the parties and their consultants have met on numerous occasions and have exchanged information and documentation. Upon the basis of these meetings and exchanges, SOC and Suffolk County consider the concerns expressed in Contention 19(i) to have been resolved. The contention is accordingly withdrawn.

Suffolk County and SOC have one caveat regarding withdrawal of the contention, to which LILCO and the Staff do not object. The County and SOC have recently received Board Notification 82-122 relating to a change in the USGS position on the Charleston earthquake of 1886. The County and SOC are attempting to obtain the underlying data concerning this matter to assess whether it affects ground motion assumptions used at Shoreham. If this does affect the assumptions used at Shoreham (for instance, if it leads to a larger SSE for Shoreham), this could affect, in the County's and SOC's view, the adequacy of the qualification program LILCO has pursued. In this event, Suffolk County and SOC may wish to file a new contention relating to such data, which contention might question the adequacy of the SQ program at Shoreham. Given the numerous presently unresolvable uncertainties surrounding this possible

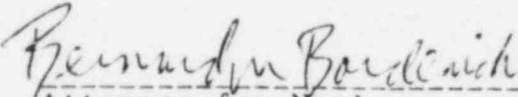
matter, the parties have not attempted to reach any more specific agreement about the nature of any such further filing, nor do they believe that any such further agreement could be derived with meaningful detail at this time.



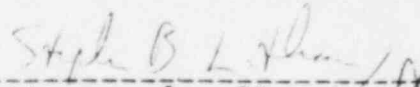
Attorney for Long Island
Lighting Company



Attorney for Suffolk County



Attorney for Nuclear
Regulatory Commission Staff



Attorney for Shoreham
Opponents Coalition

DATED: January 21, 1983

1 MR. IRWIN: Secondly, with respect to one
2 issue presently coming up for litigation after
3 environmental qualification; namely, electric
4 penetrations, LILCO and the County reached an agreement
5 in principle, which is presently embodied in an exchange
6 of correspondence, not yet a formal agreement resolving
7 that issue. And Ms. Letsche has asked me, along with
8 LILCO and the staff, that tomorrow be removed as a
9 filing date for testimony on electric penetrations.

10 I am confident that that agreement in
11 principle will mature in a final agreement.

12 JUDGE BRENNER: When will we get the agreement?

13 MR. IRWIN: Ms. Letsche has indicated to me
14 that until after the County has filed its testimony or
15 its findings of fact, she will not have time to give it
16 substantive attention. That will be this Thursday. We
17 are drafting the correspondence into a proposed formal
18 agreement today.

19 JUDGE BRENNER: There is no doubt in the
20 parties' minds that they have reached absolute final
21 agreement?

22 MR. IRWIN: Unless there is a fundamental
23 misunderstanding as to some pretty plain words, no, sir.

24 JUDGE BRENNER: Is there anybody here for the
25 County who can affirm that?

1 (No response.)

2 JUDGE BRENNER: Why don't you find out, Mr.
3 Dynner, that that, too, is the County's view. Staff, do
4 you know?

5 MR. BORDENICK: I don't know, Judge Brenner, I
6 haven't spoken to anyone. But I would imagine there has
7 been an exchange of correspondence between the parties,
8 and our reaction would pretty much be the same.

9 JUDGE BRENNER: The problem is we want to be
10 in a position to litigate it next week if there is not a
11 final agreement, and we had previously stated we would
12 defer the testimony dates only upon absolute assurance
13 that there was a final agreement. That is usually
14 embodied in the agreement or at least if not executed,
15 at least before us with the word that the only reason it
16 isn't executed is because of mechanics.

17 MR. IRWIN: That is my understanding, Judge
18 Brenner. Namely, that the letter agreement needs merely
19 to be translated into a formal agreement. If it would
20 make Mr. Dynner's life easier, I can confirm that with
21 Ms. Letsche and get back to the Board. And if the Board
22 would like, I can submit to the Board, with her
23 permission, that portion of our correspondence which
24 outlines the substantive agreement between us.

25 JUDGE BRENNER: All right. Why don't you do

1 that later today, but I also want to hear from the
2 County's own representative that they are absolutely
3 certain that there is an absolute agreement. If that is
4 the case, we will defer it.

5 MR. IRWIN: If there is any doubt on that,
6 LILCO is prepared to file its testimony tomorrow.

7 JUDGE BRENNER: So let's hear as soon as we
8 can after some break today, after the lunch break. We
9 don't want to give the parties a hard time; we just
10 don't want to defer a date if there is anything
11 uncertain about it.

12 All right. The parties are still talking
13 about containment isolation, I take it.

14 MR. IRWIN: That is correct, Judge Brenner.
15 There is circulating at this point a draft memorandum
16 whose status I am trying to nail down today or
17 tomorrow. I think it is safe to say, though, that at
18 this point absent reaching a concrete agreement and its
19 being confirmed, we expect to file testimony on that not
20 later than next Tuesday.

21 JUDGE BRENNER: That is one that we changed
22 the date on to Monday, remember, January 31st?

23 MR. IRWIN: Not later than next Monday.

24 JUDGE BRENNER: And if there is any doubt, the
25 preliminary motions on that one, containment isolation,

1 were due February 2nd. We changed that date, also.

2 Okay. Mr. Ellis, your matter.

3 MR. ELLIS: Yes, sir. Judge Brenner, we want
4 to express today, in light of events this morning, an
5 objection to the proposed scope of Torrey Pines
6 examination yet to be done. We commenced this
7 examination over two weeks ago; we have now had two
8 weeks of examination. While we had a hiatus one day, we
9 did have four days of depositions, so we have had at
10 least two full weeks of testimony on Torrey Pines. And
11 indeed, over that we're now looking at our third week.

12 When we left on Thursday, the Board in its
13 discretion indicated to Mr. Miller that he would have
14 the two hours that he had been deprived of. As I
15 recall, that was the statement of the Board. The Board
16 indicated that if he wanted to go in -- I'm looking at
17 the transcript -- if he wanted to go into another cap,
18 that that would be fine with the Board.

19 And indeed, I think a close reading of the
20 transcript indicates that the Board did not limit him to
21 one cap. It indicated that one cap was probably what he
22 needed. That is what the Board I think indicated at one
23 point; that he had in mind one more.

24 In any event, the Board said that he could do
25 up to another two hours, and it indicated one cap,

1 though it did not preclude him going beyond one cap. I
2 think at one point, two caps were mentioned On Friday.
3 Although Mr. Miller said he would tell me that
4 afternoon, the Board said he could do it by the
5 following day.

6 He did do it by the following day and he gave
7 us three caps. Then this morning at 10 minutes after
8 10:00 Mr. Miller calls and states that he wants to go
9 through six or seven, maybe eight pages -- I haven't got
10 them counted here -- eight pages of the RAT team
11 inspection.

12 We submit that is inappropriate. These are
13 not the witnesses for that purpose, and we would
14 strongly object to that. Indeed, we don't think three
15 caps is appropriate. That, however, as all of this, is
16 in the discretion of the Board.

17 But we think that that discretion ought to be
18 exercised in light of the fact that we have now been at
19 Torrey Pines, which in the pre-filed testimony of LILCO
20 amounted to maybe -- I haven't reviewed it recently, but
21 I don't think that it's more than a half a page or
22 two-thirds of a page indicating that this was what was
23 going to be done -- that we have now been at it for over
24 two weeks and we are looking at some additional time now.

25 We would strongly object to any examination of

1 these witnesses on material that is not in the Torrey
2 Pines report and certainly not any examination on the
3 RAT team inspection report that we were advised of at 10
4 minutes after 10:00 this morning.

5 I hope that the tone of my voice does not, in
6 any way, make unmistakable the vigor of our objection.

7 JUDGE BRENNER: Well, the tone of your voice
8 was pretty vigorous. I'm not sure what you meant.

9 MR. ELLIS: I meant it the other way around.
10 I thought it wasn't very vigorous. I stated it very
11 succinctly, and I didn't mean that to belie the vigor of
12 our objection.

13 JUDGE BRENNER: Mr. Miller, what do you have
14 to say?

15 MR. MILLER: Judge Brenner, Mr. Ellis is
16 correct as to the time that we advised him that we would
17 plan to ask the witnesses questions regarding the NRC
18 inspection report 83-02. I think the Board should keep
19 in mind that it wasn't until the end of last week that
20 the parties received this inspection report. Over the
21 weekend, --

22 JUDGE BRENNER: It was Thursday.

23 MR. MILLER: Thursday, then. Over the
24 weekend, we have had a chance to review the report. We
25 think that the report is highly relevant to the Torrey

1 Pines study of the Shoreham plant. In some specific
2 areas we would like to question the witness panel
3 regarding this report and how it is connected to the
4 Torrey Pines report.

5 I indicated to Mr. Ellis, as he stated I
6 think, eight pages that we would plan to ask questions
7 from. I think the scope of our questions will be very
8 limited. In terms of the time consumption of the
9 questioning my guess is we're talking certainly no more
10 than a half an hour of questions.

11 If it would please Mr. Ellis, we would be glad
12 to ask questions concerning only two caps instead of
13 three caps and use the time for questions regarding the
14 inspection report. But in any event, we think that the
15 report is, as I said, highly relevant and could prove of
16 interest to this Board.

17 JUDGE BRENNER: Well, the last statement is
18 beside the point and may or may not be correct. Why do
19 you think you have to ask your questions of this witness
20 panel?

21 MR. MILLER: Judge Brenner, in at least three
22 areas that we could glean from our review of the
23 inspection report, the NRC has made some conclusions
24 regarding violations of Appendix B that would strongly
25 disagree with the conclusions made by Torrey Pines;

1 i.e., that the Shoreham plant -- the Shoreham QA/QC
2 program, as designed and as implemented, is adequate.

3 We think that -- I would be glad to specify
4 those three areas if the Board would like to hear them.
5 In any event, it seems to us again that the inspection
6 report makes some determinations in the very areas that
7 were examined and conclusions drawn upon by Torrey Pines
8 with respect to the QA/QC program, which is what this
9 trial is all about.

10 JUDGE BRENNER: Why do you think Mr. Johnson
11 is the correct witness to ask these questions of? In
12 other words, you asked him about all of the work he did
13 on Torrey Pines, and assuming arguendo for the moment
14 that it would be material to inquire into some of those
15 findings of the staff, -- and I guess I cannot resist
16 calling it the RAT report --

17 MR. MILLER: Judge Brenner, if I could, by way
18 of an example, one of the areas we would like to
19 question about concerns the NRC's conclusion in its
20 report that LILCO over-relies on final inspection in the
21 QA/QC program.

22 Certainly, Mr. Novarro has made great reliance --
23 expressed great reliance in the same area of using final
24 inspections as a way to catch things, both in his
25 testimony, pre-filed testimony as presented to the

1 Board, and in his testimony during the last two weeks.
2 In addition, Mr. Johnson has made reference to LILCO's
3 final inspection process; specifically, with respect to
4 pipe supports I think but in other areas as well.

5 And it would seem to us that there is,
6 therefore, a basic disagreement between the NRC staff
7 and Mr. Johnson for Torrey Pines and Mr. Novarro for
8 LILCO as to what final inspection should be used for and
9 how much reliance should be placed upon final inspection.

10 We think it is highly relevant to this hearing.

11 JUDGE BRENNER: I'm not sure why Mr. Johnson
12 is the necessary witness for you.

13 MR. MILLER: Mr. Johnson is here as a
14 representative of Torrey Pines, Judge Brenner. I think
15 that Torrey Pines has made some conclusions regarding
16 the Shoreham QA/QC program, including the value of final
17 inspection. Certainly, Mr. Novarro, as a representative
18 of LILCO, has drawn much comfort, if you will, from the
19 final inspection and what it can accomplish and how it
20 should be used. I think that these are appropriate
21 witnesses to answer the questions that we would be
22 asking.

23 JUDGE BRENNER: Yes, but he didn't do the work
24 on the RAT inspection. I don't know how much he knows
25 about what was there. You want to use it to ask him,

1 does this change his view, or how can his views be
2 correct on Torrey Pines given what the staff found
3 here? Would that be the approach?

4 MR. MILLER: In some areas, Judge Brenner,
5 that would be the approach.

6 JUDGE BRENNER: You see, we are here to put
7 all of the evidence together and we can put in what
8 Torrey Pines said along with what we hear from other
9 witnesses, including perhaps the more correct witnesses
10 for the RAT inspection; that is, the staff and maybe
11 LILCO witnesses who are familiar with the details of
12 that inspection. And these two witnesses might not be
13 and you are hitting them with it on very short notice,
14 to boot.

15 Not out of your fault, I add, given when you
16 received the report. Nevertheless, the witnesses would
17 not be ready, or very ready.

18 MR. MILLER: Judge Brenner, in light of our
19 limitation on the pages that we would like to ask
20 questions from, I don't believe it would require the
21 witnesses being familiar with the entire report.

22 In addition to that, I think that this would
23 be an area that we could explore after the lunch break.
24 Again, my estimate of no more than a half an hour, I
25 think even -- if the Board would like, we could limit it

1 even more than that. I think in a very short time we
2 could tie in this inspection report to the Torrey Pines
3 study.

4 JUDGE BRENNER: I understand the tie-in. My
5 point is that we are as capable of tying it in as anyone
6 else, and we would have to go through it more than once
7 if we went through it at all; if you went through it
8 with these witnesses and then it turned out we had to
9 get all of the LILCO witnesses in who knew the details
10 and then the staff witnesses and on and on and on.

11 MR. MILLER: Judge Brenner, at this time the
12 inspection report is not in evidence. We would move to
13 put it into evidence at this hearing.

14 JUDGE BRENNER: LILCO is entitled to choose,
15 in the first instance at least, the witnesses it
16 believes know the details. You're arguing that you need
17 to ask Mr. Johnson some questions about it for the
18 reasons you indicated. It might be best to combine it
19 all. I just don't want to hear round two and then round
20 three in terms of efficiency.

21 Mr. Ellis?

22 MR. ELLIS: Judge Brenner, several points.
23 First, at the outset I omitted to mention that neither
24 of these witnesses, I can represent to the Board, have
25 read the RAT report. I did not use the 20 minutes

1 between 10:10 and 10:30 to ask them to do that. I
2 exercised my discretion to have them continue to do
3 things they were doing.

4 Second, I think that -- and therefore, I think
5 it is inappropriate to ask these witnesses questions
6 about matters which may need to be put into context,
7 matters about which they do know facts and so forth.

8 A second point is that there are going to be
9 I&E reports continuing on up to fuel load, beyond fuel
10 load, and at some point there has to be an end to the QA
11 litigation.

12 Of course, the Board always has the power,
13 always has the discretion to ask to hear about any
14 particular I&E report or any particular point it needs
15 to address. But in terms of the scope of these
16 contentions and what has already been litigated, we
17 think that these are the wrong witnesses. And in any
18 event, this is an inappropriate time to do it,
19 especially considering that they have not reviewed it
20 and are not themselves familiar with it.

21 MR. MILLER: Judge Brenner, with respect to
22 Mr. Ellis's statement regarding the I&E reports, it
23 would be the County's position that all I&E reports past
24 and present that relate to Shoreham's QA program should
25 be made a part of the record.

1 JUDGE BRENNER: Are you serious?

2 MR. MILLER: Yes, we are serious. Any of the
3 I&E reports related to the QA/QC program at Shoreham we
4 feel should be made a part of the record. We feel it
5 would be unfair to suppress the problems, the
6 discrepancy, that have been noted by the NRC in its
7 inspections.

8 JUDGE BRENNER: We are not putting the
9 inspection reports in on that, I can assure you. The
10 past, present or future. The volume is just too great,
11 and that kind of situation does not -- is not conducive
12 to separating the wheat from the chaff, which is the
13 parties' obligations to do in the litigation before us.

14 Anything that is important, the County has had
15 ample opportunity to use, and we have extensively used
16 inspection reports. But we're not just en masse moving
17 them in.

18 Returning to your immediate proposition, you
19 are talking about aspects of one inspection report?

20 MR. MILLER: Judge Brenner, with respect to
21 this one particular inspection report, then, the County
22 would be agreeable to not at this time ask any questions
23 regarding the Inspection Report 83-02, and to have, at a
24 later time, a full hearing regarding this inspection
25 report. But we would request that at that time, Mr.

1 Johnson be made available.

2 We think that there are some questions
3 appropriately directed to Torrey Pines, and Mr. Johnson
4 is Torrey Pines's representative. And if the Board or
5 LILCO at this time would feel that the witnesses are not
6 prepared or this is not the appropriate time, we would
7 be agreeable to do it at a later time.

8 JUDGE BRENNER: And who else do you want to
9 testify about the report? Do you want the staff, also?
10 It's their report.

11 MR. MILLER: Yes, Judge Brenner, we would want
12 the staff here to testify as to the report, and the
13 LILCO personnel that were involved in the preparation or
14 in the report itself.

15 JUDGE BRENNER: There are reports that are
16 going to continue to come out, and we are not,
17 willy-nilly, going to stop whatever we are doing at that
18 time and automatically put a report in. Whether or not
19 it is important depends upon the particular content of
20 the report.

21 Why don't you give us a cross plan, and a very
22 detailed one, as to what you want to cross examine on
23 from the report, and geared to which witnesses you want
24 to ask the questions of. I don't mean by name, but by
25 organization. You can separate out LILCO, Torrey Pines

1 and the staff, in those three broad categories, and give
2 us that.

3 You say you're ready to cross examine now, so
4 why don't you give us that very quickly. You tell us
5 what would be reasonable. All I want to say is quickly
6 --

7 MR. MILLER: Today, Judge Brenner?

8 JUDGE BRENNER: Today is fine.

9 MR. MILLER: Let me explain that with respect
10 to our questioning of this report, we were prepared
11 today to go forward with Mr. Johnson and Mr. Novarro.
12 You're requesting that we give you a cross plan and
13 expand it to include all other persons we would want to
14 question the report about? Is that correct?

15 JUDGE BRENNER: If you, indeed, want to
16 question other persons. But we want to see your
17 questions of Mr. Johnson first, but I want to see the
18 rest of it, too, so we get the whole picture. And the
19 idea is to get it while he is still here so we can make
20 a decision.

21 If you can do it today, that's fine. First
22 thing tomorrow morning would be all right, also.

23 MR. MILLER: Judge Brenner, would it be
24 appropriate for us to give a cross plan regarding our
25 questions on Torrey Pines to Mr. Johnson to you tomorrow

1 morning, and then follow up with the cross plan
2 regarding other organizations?

3 JUDGE BRENNER: Well, I want to see the whole
4 picture because it could affect the decision, (a) as to
5 whether to go ahead at all, (b) whether it makes sense
6 to go ahead now on some of it. I don't know how far you
7 want to go with it. And I'm also not sure that the
8 report, on its face, finds things a lot different than
9 things we have already heard in our extensive record, in
10 both Torrey Pines and prior staff IE reports.

11 So I want to see why it is something
12 different, and that is going to be the problem with any
13 future reports, also.

14 MR. MILLER: Judge Brenner, Mr. Dynner has
15 pointed out or reminded me that there is an exit meeting
16 scheduled for tomorrow on this inspection report. It
17 could be that a cross plan regarding all other
18 organizations other than Torrey Pines would be more
19 appropriate after that exit meeting.

20 JUDGE BRENNER: No, I don't want to wait.
21 You've got something in mind and I just need to see what
22 it is a little better. And we also have to find some
23 way to inform the other parties of what the main points
24 are that you want to cross examine on, without them
25 necessarily getting all of the detail that we want.

1 So I think you need a separate outline of what
2 portions of the IE report you want to cross examine on,
3 and who, as I say, by organization. It doesn't have to
4 be by individual witness name you want to ask the
5 questions of. And the main points should be given to
6 the other parties. And then we will hear more on it
7 tomorrow.

8 LILCO, for its part, when we handle it
9 tomorrow can determine that if we are willing to hear
10 some examination on some of the points that you want to
11 ask about, Mr. Miller, LICO can determine whether it
12 would just as soon have Mr. Johnson able to respond as
13 to what relationship he thinks it has given his
14 findings, or whether it would argue that only witnesses
15 with more direct knowledge should be involved. And then
16 we can, on our own, put the record together and decide
17 whether it is consistent or inconsistent with the
18 findings. And we will give you our view, too.

19 Incidentally, the report has not escaped our
20 notice, and we are thinking about it ourselves. But our
21 thinking hadn't matured very much, and what you are
22 going to give us could assist it.

23 MR. ELLIS: Judge Brenner, in order for us to
24 make any decisions and in order for us to be able to
25 argue, I understand that the Board wants the County to

1 give us a topic or subject outline, not necessarily in
2 questions but that we should have some fairly
3 particularized notion of the areas that they intend to
4 pursue.

5 JUDGE BRENNER: That is -- the staff, also.
6 That is correct. They can give you the whole cross
7 plan, too, if they have no objection to that, in lieu of
8 the particularized outline. But we will leave that up
9 to them.

10 MR. ELLIS: Now, what was the timing on that?

11 JUDGE BRENNER: We need it tomorrow morning,
12 for the whole thing.

13 MR. ELLIS: Would it be possible for us to
14 have it tonight?

15 JUDGE BRENNER: No. We are asking them to do
16 it on short notice, but it will be difficult for us to
17 decide whether or not we want to let Mr. Miller go ahead
18 and ask Mr. Johnson some questions without seeing the
19 rest of the picture, and that is why we need the rest of
20 it.

21 MR. ELLIS: The only thing I was thinking was
22 the difficulty we would have in consulting with certain
23 people on that short of notice, if we got it tomorrow
24 morning. We need some time to talk to the people who,
25 indeed, were involved.

1 JUDGE BRENNER: Well, what about -- would Mr.
2 Johnson still be here, if we could get to him in the
3 afternoon? You work that out with your schedule, too.

4 MR. ELLIS: I guess I had foolishly
5 entertained the notion that we would be done with Mr.
6 Johnson this afternoon.

7 JUDGE BRENNER: Well, that remains to be seen,
8 separate from this matter, and now with this matter, I
9 guess you won't be. Because we didn't decide whether we
10 would let Mr. Miller ask questions.

11 The other option is to let him have his half
12 hour, but I'm reluctant to do that until I see the whole
13 picture. I don't want to do it piecemeal. But if you
14 want to let him go ahead and then run the risk of
15 needing him again later, that is up to you.

16 Why don't you all think about it? We would be
17 prepared to argue it after the first break tomorrow,
18 rather than first thing in the morning, if that would
19 assist you. And I guess it would be prudent to have Mr.
20 Johnson read the report for what it's worth, even though
21 we are perfectly cognizant that reading a report and
22 having knowledge of what it involved are two very
23 different things.

24 MR. IRWIN: Judge Brenner, if I may, on the
25 subject of notice, going back to the argument scheduled

1 for tomorrow on the motion with respect to the question
2 on environmental qualification -- if it possible for us
3 to receive the Suffolk County response to our motion
4 this evening. We prepared that motion in two days.
5 They've already had four days to respond. If we could
6 get it this evening so that we could think about it
7 overnight, that would be more useful than 30 minutes or
8 less to think about it.

9 JUDGE BRENNER: Okay. Let's leave it this
10 way. We expect the County, in good faith, to try very
11 hard to do that. But the actual due date we will hold
12 them to will be tomorrow morning, somewhere around 8:00
13 or 8:30 at the latest.

14 Okay, let's get into the examination. We are
15 going to hold you to two hours, Mr. Miller. As we
16 indicated, you can spend it all in one cap or as many as
17 you want to, within the two hours. You, I think, have
18 got a good feeling from the discussion yesterday which
19 Mr. Ellis accurately paraphrased that we have a feeling
20 as to how extensive it has to be in terms of the desires
21 we expressed last week for more information.

22 So, we expected to see one or two caps. The
23 fact that you have three does not disturb us, but you
24 have the same two-hour limit.

25 MR. MILLER: Yes, Judge Brenner. I think the

1 discussion of the caps will actually go very quickly.

2 JUDGE BRENNER: Let me make one other
3 suggestion. Over lunch, the parties might want to talk
4 to each other, and maybe orally the County can tell Mr.
5 Ellis the nature of the weeks that it would have liked
6 to ask Mr. Johnson on that RAT inspection. And that
7 might assist Mr. Ellis in making some of the decisions
8 he has to make in terms of his position.

9 MR. MILLER: The County is agreeable to do
10 that, Judge Brenner.

11 Whereupon,

12 LOUIS D. JOHNSON and

13 JOSEPH P. NOVARRO,

14 the witnesses on the stand at the time of recess,
15 resumed the stand and, having been previously duly
16 sworn, were examined and testified further as follows:

17 CROSS EXAMINATION -- Resumed

18 BY MR. MILLER:

19 Q Gentlemen, if you would, -- I believe, Judge
20 Brenner, you are aware last Friday afternoon, early
21 afternoon, we informed Mr. Ellis's secretary and your
22 secretary as to which caps we were going to be pursuing
23 this morning.

24 Mr. Novarro and Mr. Johnson, I assume at this
25 point you have been advised as to what those caps were

1 and are and you've had a chance to review them; is that
2 correct? We're talking specifically about caps 4, 11
3 and 13.

4 A (WITNESS NOVARRO) Yes.

5 Q Well, why don't we begin, then, if you would
6 turn to corrective action plant 4, which relates to PFR
7 032. Gentlemen, I believe you will recall this is the
8 potential finding that involved the missing welds. And
9 my first question, Mr. Johnson, with respect to
10 PFR-032: Did Torrey Pines conclude that this
11 discrepancy was generic? And I'm referring specifically
12 to the Impact Assessment Statement, which would be page
13 4, I believe, of the Torrey Pines report, PFR-032.

14 I'm reading, Mr. Johnson, from the bottom of
15 that page where it states, "TPT found this discrepancy
16 in two of two cases where pipe supports were inspected
17 to a level of detail where welding was inspected."

18 A (WITNESS JOHNSON) There is additional
19 information there that relates to the fact that one of
20 the two cases where the welding was not found matched
21 the design requirement. The welds are required on box
22 beam pipe supports greater than 12 inches diameter
23 piping, and welds are not required by the E&DCR that is
24 referenced there for box beam supports for pipes less
25 than 12 inches.

1 And it does say that similar discrepancies may
2 exist. That is based on a sample of one out of two, if
3 yo will. I think Mr. Novarro addressed the rest of the
4 world in his corrective action plan.

5 Q Well, Mr. Johnson, with respect to number 3 of
6 that box, which is entitled "Preparation by GA Task
7 Leader," I see that criterion 4 is marked. And if I --
8 well, let me just read if I could, then, from the
9 transcript of last week in which you were defining for
10 us the criteria of Torrey Pines and what they mean. And
11 you state at transcript page 18,273-18,274, "Criterion 4
12 is a discrepancy, the nature of..." --

13 MR. ELLIS: Excuse me, could we have the time
14 to look at the transcript page that you are reading
15 from, please?

16 MR. MILLER: The page numbers are 18,273 at
17 the very bottom, continuing over to 18,274.

18 BY MR. MILLER (Resuming):

19 Q Do you have the pages, sir?

20 A (WITNESS JOHNSON) Yes.

21 Q If you will read with me, it starts at the
22 bottom of the page, "Criterion 4 is a discrepancy, the
23 nature of which would suggest that there may numerous
24 similar discrepancies in the plant that might lead to a
25 safety concern relating to the plant."

1 So, Mr. Johnson, again, I ask if this PFR
2 indicates to Torrey Pines or indicated to Torrey Pines a
3 generic concern with the Shoreham plant.

4 A (WITNESS JOHNSON) No, it did not. You are
5 correct that the reviewer on the impact assessment did
6 check box 4, and that was based upon a discussion that
7 was referred to at the bottom of that page.

8 If you also look over at the Finance Review
9 Committee classification of this finding, they
10 classified it under item -- or, under criterion 1, which
11 is a singular event where the construction conditions
12 did not meet the design requirement.

13 Q Was Mr. Volman incorrect, then, Mr. Johnson,
14 in checking off Box 4, Criterion 4?

15 A (WITNESS JOHNSON) Yes, I believe he was.

16 (Counsel for Suffolk County conferring.)

17 Q Now, Mr. Johnson, with respect to the Torrey
18 Pines review of the corrective action plan which is the
19 next page, you state in your approval of the corrective
20 action plan, "Agree that documentation of actions
21 planned by LILCO would be prudent." Do you see that
22 comment, sir?

23 A (WITNESS JOHNSON) Yes.

24 Q Do you know if LILCO did document the actions
25 planned or set forth in this corrective action plan?

1 A (WITNESS JOHNSON) The corrective action plan
2 documents the planned actions. I have not seen
3 documentation of the results of those actions at this
4 point.

5 Q Mr. Novarro, did LILCO document the actions
6 set forth in this corrective action plan?

7 A (WITNESS NOVARRO) Yes, we did. And in my
8 testimony I stated that we did two things. We looked at
9 all of the similar box beam restrains greater than 12
10 inches, and there were about 80 of them, as I recall,
11 and we found no other discrepancy of this type.

12 We also, as I stated in the testimony,
13 re-analyzed the one box beam restraint that was found
14 that had missing welds on one of the four sides of the
15 box beam, and we documented the fact that that box beam
16 restraint was adequate as is. No modification being
17 required.

18 I reviewed the documentation that said that
19 that analysis had been done, and the results are stated.

20 Q Okay, let's go on to the corrective action
21 plan which is cap 4. Mr. Novarro, in your opinion, does
22 corrective action plan 4 identify the cause of the
23 discrepancy identified by Torrey Pines in PFR-032?

24 A (WITNESS NOVARRO) Yes, it does.

25 Q Could you point me to where the cause is

1 identified?

2 A (WITNESS NOVARRCO) In the corrective action
3 plan there is a large paragraph that describes cause.
4 At the very bottom of the paragraph there is a statement
5 that says that the change in the drawing was overlooked
6 by FQC at the time of final installation acceptance
7 inspection, and it refers to the two versions of the
8 drawing that showed the change.

9 So in our opinion, as stated here, this was a
10 human overlooking of a requirement.

11 Q Mr. Novarro, as I read that paragraph, it
12 indicates to me that Engineering had changed the weld
13 symbols to require fillet welds all around, and that this
14 change was overlooked by FQC at the time of final
15 inspection. Is that correct?

16 A (WITNESS NOVARRCO) No, I don't think that is
17 what it says. In the paragraph that I read from there
18 is a statement that the drawing that was in effect at
19 the time of the inspection was the prior revision of the
20 drawing. So at that point, the inspection apparently
21 was done correctly.

22 Q But, Mr. Novarro, following that inspection, a
23 change was made to require the welds all around; is that
24 correct?

25 A (WITNESS NOVARRCO) That is what Revision 9 of

1 the drawing requires, yes.

2 Q Now, was FQC informed of this change, to your
3 knowledge?

4 A (WITNESS NOVARRO) I really don't know, but I
5 would assume that revisions of the drawings were
6 available to all.

7 Q How would such a change be documented, Mr.
8 Novarro? Would there be an E&DCR for that change?

9 A (WITNESS NOVARRO) No. In this case, there is
10 a revision of the drawing that is attached that is
11 Revision 9 that shows the box being restrained, and the
12 requirement for the filet welds.

13 Q Mr. Novarro, what procedure or procedures
14 exist within the Shoreham QA program to insure that such
15 changes are made known to FQC final inspection?

16 (Panel of witnesses conferring.)

17 A (WITNESS NOVARRO) FQC, as far as I know, keeps
18 a listing of all current revisions of drawings that are
19 required for the job. The BC drawings that we're
20 talking about here that are shown in the attachment are
21 the drawing series that shows the requirements for all
22 safety-related pipe supports. So FQC would know
23 generally of this requirement by the updated drawing
24 list for these types of drawings.

25 Q Then, Mr. Novarro, am I correct that assuming

1 that in this case, FQC was not made aware of this change
2 in the drawing?

3 A (WITNESS NOVARRRO) It appears as though the
4 drawing change, which you can see, is by a symbol in the
5 middle of a very complex part of the drawing requiring
6 that, in this instance now, the fourth filet weld on the
7 four sides was required apparently was not seen. And,
8 therefore, there was no apparent knowledge at the time
9 that the requirement existed.

10 A (WITNESS JOHNSON) I think the evidence of the
11 other pipe supports indicates that the change was noted
12 by FQC and was inspected for.

13 Q I assume, though, Mr. Johnson, that
14 Construction Inspection did not see the change; is that
15 correct?

16 A (WITNESS JOHNSON) Why do you assume that?
17 There were 79 other pipe supports of this variety that
18 did have the welds in them.

19 Q Let me go back again to the cause of this
20 discrepancy. Mr. Novarro, from your statements I gather
21 that you do not know for certain the cause of this
22 discrepancy, is that correct?

23 A (WITNESS NOVARRRO) No. I think I stated that
24 this discrepancy came about as a result of a drawing
25 change in this case that was not understood by someone

1 at the time the drawing was issued; and, therefore,
2 there was no knowledge that the design change had
3 occurred, nor, for that matter, could the inspection be
4 done.

5 But when we found this discrepant condition,
6 it was very reasonable on our part to say well, had it
7 happened again -- was this a situation that could have
8 happened again. And we satisfied ourselves of that by
9 looking at all of the similar box beam restraints of
10 this type that would have required a fourth filet weld.

11 And as I mentioned earlier, there were about
12 80 of them as I recall, and looking at all of those,
13 re-inspecting all of those hangers or supports, there
14 was no case of another missing weld.

15 Q Well, Mr. Novarro, was the change in the
16 drawing not understood, or was the change in the drawing
17 overlooked, as stated in the corrective action plan?

18 A (WITNESS NOVARRO) I don't really know, but I
19 don't think it makes any difference.

20 Q In either event, Mr. Novarro, the change in
21 the drawing was not discovered or made known to the
22 final inspectors; is that correct?

23 A (WITNESS NOVARRO) As I said, the FQC group
24 that had a copy of this final or later version of the
25 drawing apparently -- and I really don't know -- either

1 didn't see it or didn't understand it, but the
2 inspection had been completed.

3 I might point out also that all of these
4 hangers are -- in this case, this is a hanger on the E11
5 system, which is the RHR system in the reactor
6 building. All of these hangers are all part of the
7 final stress reconciliation program, and are all going
8 through a final review.

9 Q So, Mr. Novarro, in addition to the FQC
10 inspection not noticing this change, construction
11 personnel also were not made aware of this change; is
12 that correct?

13 A (WITNESS NOVARRRO) Yes. If the welds were not
14 there, somebody couldn't have put them in. So I would
15 have to agree that that was the case. But again, this
16 was the one case, and the only one case, that we found
17 this. All of the others were there.

18 Q What was the cause, Mr. Novarro, of the
19 construction personnel not being made aware of the
20 change to the drawing?

21 A (WITNESS NOVARRRO) I think it is the same
22 reason that I gave before; that is, that either the
23 drawing change was unclear or they didn't understand
24 it. It is a very small symbol in the middle of a maze
25 of instructions on a very complicated drawing, and in

1 this one case, I guess they didn't see it, either.

2 Q So, Mr. Novarro, you really don't know, then,
3 why it is that construction personnel were not made
4 aware of this drawing change?

5 A (WITNESS NOVARRO) I gave the two reasons why I
6 thought they didn't know, and if you would like, I would
7 repeat them again.

8 JUDGE BRENNER: Don't do that. I think you've
9 got his answer a couple of times to your question, Mr.
10 Miller. You have to pick a time to move on to your next
11 point, and this is it.

12 MR. MILLER: I will move on right now, Judge
13 Brenner.

14 BY MR. MILLER (Resuming):

15 Q Mr. Novarro, with respect to cap 4, in your
16 opinion, does this corrective action plan include any
17 measures to prevent the repetition of the discrepancy or
18 the kind of discrepancy identified by Torrey Pines in
19 PFR-032?

20 A (WITNESS NOVARRO) Yes. I think that we looked
21 at the entire population. We found that this was the
22 only case of a human error; the procedure works. I
23 think that is evident by the fact that all of the other
24 similar restraints are correct; and, therefore, I think
25 we covered the whole range of review on that matter.

1 Q But, Mr. Novarro, what, if anything, was done
2 to insure that changes to the drawings are made known to
3 FQC at the time of final inspection?

4 A (WITNESS NOVARRO) FQC was aware of the
5 existing drawing revision at the time of final
6 inspection. The drawing was revised after that, as we
7 stated earlier.

8 Q Mr. Novarro, let's go back, then, to the third
9 paragraph of the LILCO corrective action plan, because
10 that is -- I misunderstood your explanation, then. As I
11 read that paragraph, when FQC performed the welding
12 inspection, the welding was in accordance with the
13 drawing. Thereafter, the drawing was changed. FQC made
14 its final inspection and was not made aware of that
15 change.

16 Now, that is the way I would read that
17 paragraph. How do you explain it?

18 A (WITNESS NOVARRO) That is not what I read. I
19 stated earlier that FQC inspected the hanger at the
20 time, in accordance with Revision 7 of the drawing. The
21 later revision required the four filet welds.

22 (Counsel for Suffolk County conferring.)

23 JUDGE BRENNER: Mr. Novarro, Mr. Miller's
24 point of confusion, or the point he wanted to clarify
25 with you, is you just stated before that the revision

1 was after final inspection. Yet, as he reads the
2 write-up in the cap, it appears that final inspection
3 was after the revision of the drawing?

4 Is that your point, Mr. Miller?

5 MR. MILLER: Yes, Judge Brenner.

6 JUDGE BRENNER: Can you clarify that?

7 WITNESS NOVARRO: Perhaps the confusion is
8 that the final installation inspection, or acceptance
9 inspection, was done with Revision 7 of the drawing, and
10 that was the intent of the last sentence, as I wrote it,
11 and hope that it was understood that way. I understand
12 it to mean that.

13 JUDGE BRENNER: Is that different than the
14 term, "final FQC inspection"?

15 WITNESS NOVARRO: At the time that this hanger
16 was completed and reviewed by FQC, they used Revision 7
17 of the drawing as their guide to the inspection. When I
18 talked later of the final stress reconciliation program,
19 there will probably be another inspection of this hanger
20 as part of that program. That is what you were
21 requesting.

22 JUDGE BRENNER: I thought you said earlier
23 orally -- and maybe I misheard you -- that the drawing
24 was revised after the FQC final inspection.

25 WITNESS NOVARRO: Yes, I did, Judge Brenner,

1 and hangers are erected in accordance with the drawing
2 -- a BC drawing, as we see in this group of pages. So
3 there is an inspection that occurs as the hanger is
4 completed in accordance with the drawing. That is the
5 hanger inspection.

6 We've talked many times over the last weeks
7 about a final stress reconciliation program that will
8 also require a final inspection. Perhaps that is where
9 the confusion lies.

10 JUDGE BRENNER: Well, the sentence in the cap
11 -- I infer from the sentence, "This change was
12 overlooked by FQC at the time of final inspection
13 acceptance inspection," as meaning that the change was
14 there before FQC's final inspection. I'm talking about
15 the stress reconciliation program. Is that consistent
16 with what you said orally? I'm obviously missing
17 something, and I don't know what I'm missing.

18 WITNESS JOHNSON: Could I try here, Judge
19 Brenner, as to my understanding? My understanding is
20 that there was an inspection when the pipe support was
21 fabricated. That inspection was to the -7 drawing, the
22 prior change.

23 The -9 change in the drawing came out
24 subsequent to that inspection. The final installation
25 acceptance inspection was subsequently conducted, and

1 the change to the -9 configuration of the support at
2 that point was missed. And therein lies the point of
3 missing the requirement.

4 I think there is hard evidence that the
5 requirement was known to FQC in the other pipe
6 supports. I think we have one case here where that
7 requirement of the -9 drawing was not picked up on the
8 final acceptance inspection. And I think Mr. Novarro
9 agrees with that, but maybe he wants to comment.

10 JUDGE BRENNER: That was my question five
11 questions ago; that when Mr. Novarro said "final FQC
12 inspection" he meant something other than that
13 inspection in the last sentence, which I don't have in
14 front of me now, but it is something to the effect of
15 final installation inspection, none of which is yet
16 talking about the stress reconciliation. Is that right,
17 Mr. Novarro?

18 WITNESS NOVARRO: Yes. When I wrote the cap I
19 didn't have the final stress reconciliation issue in my
20 mind.

21 JUDGE BRENNER: But when you said "final FQC
22 inspection" that is an earlier inspection than the one
23 you're talking about in that sentence. Is that it?
24 Because if it is not, then what you said is apparently
25 consistent with that sentence.

1 WITNESS NOVARRO: Let me take a minute and
2 look at this.

3 JUDGE BRENNER: The only reason I jumped in is
4 not because of my personal interest, but because you
5 didn't answer Mr. Miller's question and I thought he
6 deserved an answer.

7 MR. MILLER: Judge Brenner, I would like to
8 point out that we're satisfied with Mr. Johnson's
9 explanation. That is the way we understand this
10 corrective action plan. If Mr. Novarro can agree with
11 what Mr. Johnson stated, I think we have reached an
12 accord here.

13 JUDGE BRENNER: All right. If you're happy,
14 why don't you just proceed. I still don't know what Mr.
15 Novarro means by final FQC inspection, but maybe that is
16 beside the point.

17 WITNESS NOVARRO: I will agree with what Mr.
18 Johnson said. I think the words, when you read them
19 again, will say that.

20 JUDGE MORRIS: Are you leaving this now, Mr.
21 Miller?

22 MR. MILLER: Yes, Judge Morris.

23 JUDGE MORRIS: I have just one little
24 follow-up question.

25 Mr. Novarro, what is the normal procedure for

1 informing FQC or the construction people of changes in
2 design drawings?

3 (Panel of witnesses conferring.)

4 WITNESS NOVARRO: In this case, Judge Morris,
5 it would be a revision to the drawing that was shown in
6 this attachment.

7 JUDGE MORRIS: So there is no special
8 memorandum that says look, we've updated the master
9 list, or, look, we've revised drawing number
10 such-and-such?

11 WITNESS NOVARRO: No, sir.

12 JUDGE MORRIS: The system relies on the fact
13 that the people who are using drawings assure themselves
14 that they are using the drawing that is up to date? Is
15 that it?

16 WITNESS JOHNSON: We found, Judge Morris, in
17 our investigations that there are two ways that that is
18 covered. One is the re-issuance of the drawing per se,
19 which gives a new design document. The other is that
20 FQC themselves track all issuances, either E&DCRs or
21 drawings, and they maintain a personal set of marked-up
22 drawings that show the latest change on each item. So
23 there is a dual path there that provides notification of
24 changes and they do track changes in practice.

25 JUDGE MORRIS: Thank you.

1 JUDGE CARPENTER: If I could ask just a couple
2 more questions. Mr. Novarro, in these changes,
3 revisions of drawings, does it show on Revision 9 in a
4 block or what have you, does it show -- does it direct
5 the reader's attention to what the change is on 9
6 compared to 7? Or do you just have to study it -- study
7 the two drawings, one for one?

8 WITNESS NOVARRO: Judge Carpenter, there is
9 usually a revision block on a drawing that describes it
10 in general, and they are very little boxes.

11 JUDGE CARPENTER: I've never seen one of these.

12 WITNESS NOVARRO: There is one here. That
13 generally shows the types of changes, but you have to go
14 then to the drawing to see it in the real world. But
15 there is usually a revision block on the drawing that
16 gives an indication of what is being changed.

17 JUDGE CARPENTER: The reason I asked the
18 question, I think you testified that it was your opinion
19 that in this case there was a change which represented a
20 small percentage of the total material that was
21 illustrated in the drawing which wasn't picked up by
22 somebody looking at the drawing.

23 And I was simply looking to see whether you
24 felt, upon review, that all adequate flags, either some
25 sort of note on the drawing or color coding or what have

1 you, to prevent this kind of thing was in place.

2 Back to the question about looking at this in
3 a generic sense.

4 WITNESS NOVARRO: I repeat again, Judge
5 Carpenter, there is a revision block on the drawing, but
6 it doesn't say "Four filet welds are required in this
7 location of the drawing." You have to be able to go to
8 the drawing and find that out.

9 JUDGE CARPENTER: It doesn't tell you which
10 item was revised?

11 WITNESS NOVARRO: I don't see that on this
12 revision block. No. I talks about more general reasons
13 for the drawing being revised, like an E&DCR, or
14 something like that. I see that referenced here.

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1 JUDGE CARPENTER: Would it be practical to do
2 that?

3 WITNESS NOVARRO: Not really.

4 JUDGE CARPENTER: A little punch list, if you
5 will, on the drawing of how it was different from the
6 previous version?

7 WITNESS NOVARRO: I guess in the ideal world
8 it would be nice to do that, but it isn't a very
9 practical thing on a drawing of this size to be able to
10 do that.

11 JUDGE CARPENTER: Thank you.

12 BY MR. MILLER: (Resuming)

13 Q Gentlemen, let's move on to Corrective Action
14 Plan 11, which relates to PFR 114, and you will remember
15 this was our initial example of how the process works,
16 so we just have a very limited number of questions for
17 this Corrective Action Plan.

18 Mr. Novarro, this is the discrepancy that
19 identified the debris in the HVAC ducting. My question
20 would be whether in your opinion Corrective Action Plan
21 11 identifies the cause of the discrepancy discovered by
22 Torrey Pines and set forth in PFR 114

23 A (WITNESS NOVARRO) Yes. In my opinion it
24 does. We described in the Corrective Action Plan that
25 the debris was probably missed in the final inspection

1 of the duct system after construction completion. I can
2 recall in answer to Judge Carpenter's question, I
3 believe, a few days ago, that we pointed out that there
4 was an opening in the ducts six inches by six inches
5 nearby that might have also been a mechanism for debris
6 to have gotten into the duct. It is really not possible
7 to be absolutely certain how it got there, but those
8 were the two issues that we discussed.

9 Q Mr. Novarro, do you know how large this debris
10 was? Or Mr. Johnson?

11 A (WITNESS NOVARRO) There is a picture of it in
12 the PFR that is just relative. I don't think I know
13 what the dimensions of the duct are.

14 Q Mr. Johnson, do you recall the approximate
15 size of this debris?

16 A (WITNESS JOHNSON) No, sir.

17 Q I don't see the picture in our book, Mr.
18 Novarro.

19 A (WITNESS JOHNSON) I believe it is back in the
20 DR as opposed to the PFR.

21 Q Mr. Novarro, with respect to the statement in
22 the corrective action plan that the debris was probably
23 missed at the final inspection, do you know how it was
24 that the debris was missed at the final inspection?

25 A (WITNESS NOVARRO) No, I do not.

1 Q With respect to measures to prevent repetition
2 of this kind of discrepancy, in your opinion, does
3 Corrective Action Plan 11 set forth such measures?

4 A (WITNESS NOVARRO) Not explicitly, but in the
5 PFR and the DR and in preparing the corrective action
6 plan it is apparent that there is a requirement that the
7 ducts be inspected after construction. I verified
8 through talking to the engineers who had been
9 responsible for the operation of the system that those
10 inspections were in fact done and documented. However,
11 in this instance, probably due to either an oversight or
12 possibly due to the opening in the duct, we do have or
13 we did have a piece of fiberglass cloth trapped on a
14 turning vein in an auxiliary duct, and that is all I
15 know about it.

16 Q Mr. Novarro, did LILCO take any action to
17 determine or re-examine its inspection procedures with
18 regard to the HVAC ducting to determine whether or not
19 those procedures were adequate with respect to
20 determining whether those ducts contained debris?

21 (Whereupon, the witnesses conferred.)

22 A (WITNESS NOVARRO) Due to the completed nature
23 of the duct systems, they were all in operation at the
24 time of the inspection. We were satisfied that they
25 were operating properly, and that in this case and in

1 others where safety related functions are carried out,
2 that there was design protection for the equipment.

3 We did not go back and review the procedures
4 that were used, because we felt that this one case was
5 an isolated incident, and there was no need to try to do
6 that, and in fact it would have been a very, very
7 difficult thing to attempt because of the operating
8 nature of the systems.

9 So, this is the extent to which we felt we
10 could look at the past inspections, and we did.

11 Q Mr. Novarro, what is your --

12 MR. ELLIS: Excuse me. I don't think the
13 witnesses were done.

14 WITNESS JOHNSON: Could I add something on
15 that?

16 BY MR. MILLER: (Resuming)

17 Q Sure, Mr. Johnson.

18 A (WITNESS JOHNSON) I think there is evidence
19 on the positive side here in that in the ducting that we
20 looked at, we didn't identify any similar situations,
21 and also a fair amount of their preoperational testing
22 has been completed on a number of ventilation systems,
23 and those systems have not identified any significant
24 debris in those systems as a result of the
25 preoperational testing.

1 Q Mr. Novarro, with respect to final inspection
2 of HVAC ducts, is part of that final inspection process
3 a requirement that that ducting be examined, looked into
4 to determine whether there was debris in the duct?

5 A (WITNESS NOVARRO) Yes, that is my
6 understanding of the requirement, and I think I
7 mentioned earlier in the testimony that you would do
8 that at the time that portions of systems were
9 completed, so that they could be looked at.

10 I also mentioned that it was very difficult to
11 get into the duct system to even find this location
12 where the debris was located, so that once the systems
13 are completed and in operation, it becomes a much more
14 complicated matter to get to every location.

15 (Whereupon, counsel for Suffolk County
16 conferred.)

17 Q Mr. Johnson, with respect to your comments
18 regarding Torrey Pines's inspection of other ducting,
19 did Torrey Pines physically examine inside the ducting
20 to determine whether there was debris?

21 A (WITNESS JOHNSON) Not necessarily, if the
22 system was closed. If the system was still open, they
23 would have looked in the same manner that they looked
24 here. I can't tell you which systems were open and
25 which systems were closed.

1 Q With respect to a closed and completed system,
2 did Torrey Pines make any effort to examine inside the
3 ducting?

4 A (WITNESS JOHNSON) No, we did not.
5 (Whereupon, counsel for Suffolk County
6 conferred.)

7 Q Mr. Novarro, with respect to HVAC ducting,
8 does LILCO or is LILCO still relying on performance
9 testing of ducting to determine whether the ducting is
10 free of debris?

11 A (WITNESS NOVARRO) Not only that. I mentioned
12 earlier that these ducts were inspected at one time
13 after construction completion, and in addition to that,
14 the air conditioning units on the control room air space
15 are designed and have installed in them a system to
16 detect flow blockage by delta pressure measurement.

17 In addition to that, in this case, the control
18 room air conditioning units are redundant, so that there
19 are several other factors that one can consider in the
20 situation where a small isolated piece of fiberglass
21 cloth was found in the duct.

22 Q Let's move on to Corrective Action Plan 13,
23 unless the Board would have some questions, and
24 Corrective Action Plan 13, gentlemen, relates to PFR
25 120. Mr. Novarro, you will recall that this PFR

1 involves the improper orientation of a solenoid valve.

2 In your opinion, does Corrective Action Plan
3 13 identify the cause of the discrepancy noted by Torrey
4 Pines in its inspection?

5 A (WITNESS NOVARRO) Yes. We, in the cause
6 paragraph of the Corrective Action Plan, we stated that
7 this misorientation was probably an error in
8 installation in the single case.

9 Q Mr. Novarro, do you know why such an error was
10 made in installation of this valve?

11 (Whereupon, the witnesses conferred.)

12 A (WITNESS NOVARRO) Yes. In the PFR, there are
13 some pictures, I think, that might help. In this case,
14 they are in the PFR. They are colored pictures. The
15 solenoid valves are very small components on a much
16 larger air-operated valve. That is shown in the picture
17 better. I went out to look at these valves myself,
18 because of the difficulty I had at the beginning in
19 understanding just what the discrepancy was.

20 The large valve are part of a system that
21 removes during a shutdown situation the atmosphere
22 within the primary containment which contains nitrogen.
23 It is a purge system. The valves are very large. They
24 are air-operated valves, and the solenoid operator is a
25 device that converts the electrical signal to the air

1 signal to open or close these valves.

2 It is my understanding that the orientation of
3 the large valve in many respects dictates the
4 orientation of that of the solenoid valve, and in this
5 case, as one case, the orientations didn't allow the
6 small solenoid valve to be in the more vertical
7 position.

8 Q Mr. Novarro, what instructions, if any, were
9 given to construction personnel to ensure the proper
10 installation of such solenoid valves?

11 A (WITNESS NOVARRO) They would be basically the
12 drawings for the large valve that this valve was mounted
13 on.

14 Q I assume, Mr. Novarro, that it would also
15 include the manufacturer's instructions that were on the
16 valve itself. Is that correct?

17 A (WITNESS NOVARRO) Yes, I think they would.
18 The PFR, as you know, points out that the manufacturer's
19 instructions for the SLV contained a provision for the
20 vertical installation.

21 Q Now, Mr. Novarro, what instructions, if any,
22 are given to FQC to verify that installation is in
23 accordance with the manufacturer's instructions of the
24 installation for these valves?

25 (Whereupon, the witnesses conferred.)

1 A (WITNESS NOVARRO) There is a final
2 installation acceptance inspection form for
3 instrumentation in the PFR that indicates a check was
4 made or should have been made, so that the solenoid
5 valve was installed according to specification. You can
6 see a check next to installed to spec on the form.

7 Q Mr. Novarro, would you agree with me then that
8 PFR 120 is a good example of the check and balance
9 process not working, that is, that construction
10 installed the valve wrongly and yet it wasn't picked up
11 by FQC at the time of inspection? Is that right?

12 A (WITNESS NOVARRO) No, I don't think I would
13 agree with that summary. As I stated earlier, this is a
14 very complicated valve, a large valve with a small valve
15 on it, and it's, in my view, a difficult orientation
16 matter, and it is possible that the orientation of the
17 small valve could just not be made consistent with the
18 arrow indicator, and I think it is possible that the
19 inspection did not account for this because of the
20 complexity of the matter, and perhaps it wasn't clear
21 what the inspection attribute was required here.

22 Q Mr. Novarro, I have to ask, what does the
23 complexity of the matter have to do with this valve when
24 the valve itself states, install in conformance with the
25 red arrow, and the red arrow is on the valve, and the

1 red arrow points up? Now, what does the complexity of
2 the valve have to do with proper installation with those
3 simple instructions on the valve?

4 A (WITNESS NOVARRO) It isn't clear to me that
5 the arrow was automatically intended to be pointed up.
6 It is an arrow on a valve, and I saw that in the field.
7 Again, the complexity of the matter is that it is a
8 small valve on a very large valve, and the orientation
9 of the large valve has a great deal to do with how the
10 rest of the thing gets installed, and it appeared to me,
11 and I think the pictures will show, or would show to me,
12 at least, that it was not very clear just how the small
13 valve could be mounted on the bracket on the large
14 valve, and carry out the instructions on the small valve
15 to be mounted in the near vertical position.

16 Q So, Mr. Novarro, is it your testimony that the
17 complexity of this matter, of this valve excuses the
18 wrong installation and missed inspection by FQC?

19 A (WITNESS NOVARRO) I don't know if I can say
20 it excuses it, but it certainly can contribute to the
21 error in this case, and having looked at the physical
22 installation myself, I can understand perhaps why that
23 happened.

24 Q Mr. Novarro, would you look at DR 3037 for a
25 minute? This is the discrepancy report dealing with

1 this potential finding. And if you will read with me in
2 the required condition as stated by Torrey Pines, it
3 says, "Valve label on," and then it gives the number of
4 the valve, "states that the valve must be mounted in a
5 vertical and upright position, with the red arrow
6 indicating up. Reference photograph."

7 Is it still your testimony, Mr. Novarro, that
8 complexity of this valve partly explains at least why
9 installation was done contrary to the manufacturer's
10 instructions?

11 A (WITNESS NOVARRO) Yes, it still is, because I
12 wasn't referring to just reading a label on the valve.
13 I was referring to how you mount the valve on the large
14 valve, and I think that the pictures show the relative
15 location of the solenoid with respect to the body of the
16 large valve, and from viewing it in the field again, it
17 was my opinion that it was very difficult to mount the
18 small valve in any other location.

19 Q Mr. Novarro, could you explain to me how the
20 difficulty in mounting a valve has anything to do with
21 whether inspection verifies proper installation?

22 MR. ELLIS: Objection. Asked and answered.

23 JUDGE BRENNER: No, I will allow the answer.

24 WITNESS NOVARRO: Could you help me with the
25 question again, please?

1 BY MR. MILLER: (Resuming)

2 Q I am asking if you could explain to me how the
3 difficulty in mounting a valve correctly has anything to
4 do with whether or not inspection is able to verify
5 proper installation.

6 JUDGE BRENNER: Not a valve. Make it this
7 valve.

8 WITNESS NOVARRO: Well, I have referred you to
9 the inspection report that is in the PFR. That
10 certainly doesn't say specifically, look for the arrow.
11 In my view, there is a range of factors that an
12 inspector will use in performing an inspection. In this
13 case, we have already said that he missed this one. Why
14 he missed it could be a number of reasons. I thought I
15 tried to give you some.

16 The fact that the small valve could not be
17 oriented with respect to the big valve in a way that the
18 arrow would point exactly up could have indicated to the
19 inspector that there was a reason for this and that it
20 was okay. I can't add any more than that. We have
21 admitted that the inspection was missed, the valve was
22 not oriented properly. I think we have stated in the
23 answer to -- or the CAP that the valve operated
24 correctly. We know that from our preoperational test
25 program. And we went into the details of the Corrective

1 Action Plan of what else we did about these valves and
2 what else we looked at.

3 (Whereupon, counsel for Suffolk County
4 conferred.)

5 JUDGE CARPENTER: Mr. Miller, since you have
6 paused, Mr. Novarro, in Mr. Hubbard's testimony, he
7 makes reference to LILCO having telephonic information
8 from the manufacturer. I haven't heard any reference to
9 that in this line of questioning. Does that have no
10 pertinence to the inspector's acceptance of this?

11 WITNESS NOVARRO: Well, Judge Carpenter, what
12 we explained here was that we contacted the vendor, and
13 asked whether the arrow had to always be up.

14 JUDGE CARPENTER: Was this pre-observation by
15 Torrey Pines or post?

16 WITNESS NOVARRO: No, it was post, Judge
17 Carpenter.

18 JUDGE CARPENTER: I am sorry.

19 MR. MILLER: Judge Brenner, the county would
20 have no more questions on the Corrective Action Plans,
21 if the Board would have some questions at this time.

22 JUDGE BRENNER: You couldn't fit the solenoid
23 valve in in the right way, given the orientation of the
24 large valve, or it was difficult to fit it in? Which is
25 it?

1 WITNESS NOVARRO: Well, from looking at it in
2 the picture and looking at it in the real world, Judge
3 Brenner, the solenoid is mounted on a bracket, as you
4 see here, and you just couldn't turn the valve around
5 and use that bracket. That was apparent to me. I guess
6 you could have assumed that a new bracket or a different
7 bracket could have been fabricated and used. In this
8 case it wasn't, of course. That is why Torrey Pines
9 found the arrow in the wrong direction.

10 So, I think those are the things that I
11 considered when I looked at it myself. These valves
12 don't have -- the big valves, the air-operated valves
13 that are in this case Fischer valves, they don't have
14 very many locations where you can attach a bracket to.
15 There has to be a tap and screw hole in the valve body,
16 as you can see here, to do it.

17 So, it wasn't a choice of many locations to do
18 this, as I saw it.

19 JUDGE BRENNER: Was the large valve, the arrow
20 operated valve, has it been replaced yet with the
21 environmentally qualified one?

22 WITNESS NOVARRO: No, I don't believe it has
23 been finished yet, but the E&DCR that is attached here
24 requires that the mounting be made vertical now.

25 JUDGE BRENNER: How are you going to do that

1 on the new one if it is so difficult, just put the large
2 one in in a somewhat different orientation? Is that
3 it?

4 WITNESS NOVARRO: No, I think, Judge Brenner,
5 that it would be a requirement for a revised mounting,
6 either putting it on one or the other locations that
7 there are, or revising the design of this bracket. I
8 guess a new piece of hardware in essence would be
9 needed.

10 JUDGE BRENNER: The manufacturer gave the
11 instructions. Did that same manufacturer supply the
12 solenoid valve and also the mounting brackets? Or are
13 those the add-ons that other people furnished?

14 (Whereupon, the witnesses conferred.)

15 WITNESS NOVARRO: In reviewing the purchasing
16 documentation that is in this PFR, we bought the
17 solenoid and the mounting brackets through Fischer, the
18 supplier of the large valve.

19 MR. MILLER: Judge Brenner, I would have -- I
20 am sorry -- one last question on this Corrective Action
21 Plan.

22 BY MR. MILLER: (Resuming)

23 Q It is the standard question, Mr. Novarro.
24 Does the Corrective Action Plan 13 include any measures
25 to prevent repetition of the kind of discrepancy noted

1 by Torrey Pines in PFR 120?

2 And let me make it more specific for you.

3 With respect to this Corrective Action Plan, what, if
4 anything, did LILCO do to ensure that the manufacturer's
5 instruction for installation of these valves was
6 complied with?

7 A (WITNESS NOVARRO) Yes, in part of our
8 Corrective Action Plan, we pointed out that we had
9 looked at all similar solenoid valves operating --
10 air-operated valves, and in that review, we had looked
11 at approximately 80 such valves, and we found that this
12 was the only case in which the valve, the solenoid valve
13 was not installed in accordance with the instructions,
14 and we assured ourselves through that review that this
15 was the only case that it was not properly installed,
16 and in this one case we gave instructions through an
17 E&DCR to reorient the valve so that it would be
18 vertical.

19 A (WITNESS JOHNSON) I think I might add at this
20 point, too, that in the valves that we looked at as part
21 of the study, this was the only case where we found a
22 problem with the installation of the valve of this
23 kind.

24 Q Mr. Novarro, what, if anything, was done by
25 LILCO to ensure that manufacturers' instructions for

1 installation of any equipment at the Shoreham plant are
2 complied with?

3 (Whereupon, the witnesses conferred.)

4 A (WITNESS NOVARRO) The manufacturer's
5 instructions are an integral part of our construction
6 installation program. They are an integral part of our
7 QA/QC program. In this one instance, which was
8 isolated, in our opinion, we reviewed as best we could
9 what the cause was, and we found no other instances of
10 this in the review, and therefore we felt that the
11 overall construction QA program as far as manufacturer's
12 instructions was adequate.

13 Q Is there a QA/QC procedure, Mr. Novarro, that
14 requires compliance with the manufacturer's instructions
15 with respect to installation of equipment or components?

16 (Whereupon, the witnesses conferred.)

17 A (WITNESS NOVARRO) In my earlier reference,
18 the final installation acceptance form that was in the
19 PFR points out that there was a requirement to review
20 the component with respect to its specification, and
21 installation instructions are usually a part of that
22 process.

23 Q Did LILCO do anything to remind its personnel
24 of the importance of adhering to such instructions in
25 this particular procedure that you have referenced?

1 A (WITNESS NOVARRO) As I stated, this was an
2 isolated case. I think in the review of this PFR and
3 the Corrective Action Plan, the quality assurance
4 inspection personnel at the site were well aware of this
5 one case where we missed the fact that the solenoid
6 operated valve on the large valve was not oriented in
7 the vertical position.

8 Other than that knowledge and the difficulty
9 that this created in resolving the discrepancy, I think
10 that the program was adequate, and that this one case
11 was well known to the people who were in charge of the
12 program, and therefore its effects would have been
13 reviewed for the future or for any other purpose.

14 Q Mr. Novarro, I assume then the answer to my
15 question is, no, nothing was done. Is that correct?

16 A (WITNESS NOVARRO) That is not what I said.

17 MR. MILLER: Judge Brenner, I feel I am
18 entitled to an answer to the question that I asked.

19 JUDGE BRENNER: Well, he gave you the answer
20 he gave you, and then when you characterized it in your
21 terms, he disagreed with you, so you got an answer to
22 the second question, too. You have to sometimes
23 distinguish that not always very bright line between
24 getting the facts out and arguing with the witness. I
25 think you are on the verge of crossing it, if you

1 haven't already.

2 MR. MILLER: Judge Brenner, we would have no
3 questions at this time, no additional corrections
4 regarding the Corrective Action Plans. I would have
5 three or four general followup questions I would like to
6 ask the witnesses regarding information that was
7 requested during the course of this litigation thus
8 far. If I could just ask those questions, I think it is
9 a matter of a couple of minutes.

10 JUDGE BRENNER: Well, we will let you ask them
11 if it is based upon that information, but the only minor
12 question is whether to break for lunch now.

13 MR. MILLER: Perhaps I should ask the
14 questions, and then the witnesses can think about the
15 questions over the lunch break.

16 JUDGE BRENNER: Why don't you discuss it with
17 them off the record, and then they can think about it
18 during the lunch break?

19 MR. ELLIS: Also during the lunch break, Judge
20 Brenner, I understand that Mr. Miller and I are to talk
21 about those subjects, points relating to the readiness
22 assessment team inspection that he wishes to ask Mr.
23 Johnson about, and you would like a decision from us as
24 to whether we would prefer to go ahead or prefer to wait
25 until tomorrow morning to discuss the matter then, after

1 we have had an opportunity, after the Board has had an
2 opportunity to see the cross plan, and we have had an
3 opportunity to see more and to discuss it with the
4 people.

5 JUDGE BRENNER: Yes, if you want to make that
6 decision. I don't want to be in the position of forcing
7 you to. I recognize the time frame is short.

8 MR. ELLIS: It is short, and I have read the
9 report, but I have not studied it, nor have I reviewed
10 it with the people who are involved.

11 JUDGE BRENNER: I am not pressuring you to go
12 ahead now. The idea was to see if some accommodation
13 could be reached, since the two of you as reasonable men
14 sometimes do reach accommodations, and you didn't have
15 the opportunity to explore that so far, given the time
16 frame, as we understand it, and that was the sole
17 purpose. I am not trying to pressure anybody, and I
18 don't know that Mr. Johnson would be finished today in
19 any event, which leads me to my next question, Mr.
20 Ellis. How much do you have on redirect?

21 MR. ELLIS: I think I would certainly be
22 finished before the end of the day.

23 JUDGE BRENNER: Well, how much before the end
24 of the day?

25 MR. ELLIS: I think that my redirect

1 examination should be within about the three-hour mark.
2 Perhaps less. I might cut some.

3 JUDGE BRENNER: So you would leave 15 minutes
4 for the Board?

5 MR. ELLIS: Well, there has been a full two
6 weeks plus depositions, or not quite a full two weeks.

7 JUDGE BRENNER: Well, I am not going back over
8 all of that. I am just talking about the time estimate
9 for this afternoon, and I am just pointing out that if
10 you take from 1:45 or 1:50 until 4:50, you are figuring
11 ten minutes for the Board and followup on your
12 redirect.

13 MR. ELLIS: That is right. If I took the full
14 three hours, I could see that we wouldn't finish today.

15 JUDGE BRENNER: All right. I just wanted you
16 to reach that same conclusion that I reached.

17 MR. ELLIS: I didn't have any problem with
18 that. I hope to take less. It is conceivable I could
19 take more. I of course don't know how much the Board
20 has, either.

21 JUDGE BRENNER: Have you identified any
22 specifics for Mr. Hubbard, for LILCO's cross of him?

23 MR. ELLIS: Yes, we told him yesterday we do
24 not plan to review any specific DR's or PFR's.

25 MR. MILLER: I understood your instruction

1 was, any documents that LILCO wanted to ask Mr. Hubbard
2 about. That is not just limited to DR's and PFR's, as I
3 understand.

4 JUDGE BRENNER: I don't know what I said. It
5 was certainly within the spirit of everything we said
6 here, to get any documents identified. I guess the
7 primary concern was DR's and PFR's, because recognizing
8 the detail that sometimes is buried in them, I wanted
9 Mr. Hubbard to have a full and fair opportunity to go
10 over that detail. Yes, if you have any specific
11 documents you are going to use.

12 MR. ELLIS: Mr. Hubbard asked me on Thursday
13 whether I had any GAO documents, and I said I didn't
14 have any in mind, but by golly, if he had thought of
15 any, I sure would like to know about them, so maybe I
16 could review them over the weekend, and we might use
17 them.

18 JUDGE BRENNER: He didn't give you any?

19 MR. ELLIS: He didn't give me any.

20 JUDGE BRENNER: You don't have any documents?

21 MR. ELLIS: I don't have any right now other
22 than the exhibits that are already in, this Torrey Pines
23 and some letters of that sort, but I don't have any
24 identified as of this time.

25 MR. MILLER: What about with respect to

1 findings, Corrective Action Plans?

2 JUDGE BRENNER: Talk to him over lunch.

3 MR. ELLIS: I am going to give him a lot more
4 consideration than he gave me.

5 JUDGE BRENNER: I shouldn't have to say wait
6 three times. Twice should be enough. I will give you
7 the first one for exuberance at the beginning of the
8 week. We will come back at 1:50.

9 (Whereupon, at 12:20 p.m., the Board was
10 recessed, to reconvene at 1:50 p.m. of the same day.)

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1 AFTERNOON SESSION

2 JUDGE BRENNER: Okay. Can we get a report on
3 the environmental -- I am sorry, the electrical
4 penetrations agreement and whether or not it is
5 sufficiently certain that we should defer the filing of
6 testimony?

7 MR. DYNNER: The information that I have
8 directly from the lawyers involved is that Mr. Irwin's
9 information was correct this morning, that the matter
10 should be considered to be settled, although it hasn't
11 been reduced to writing yet.

12 JUDGE BRENNER: All right. And when can we
13 get it reduced to writing?

14 MR. DYNNER: I think Mr. Irwin said that LILCO
15 is preparing the draft.

16 JUDGE BRENNER: He said the county was worried
17 about the impact of filing its findings, and I want to
18 know how soon after that we can get the written
19 agreement. He also included the part you said that that
20 wasn't the pacing event.

21 MR. DYNNER: The findings are on Thursday. I
22 think what was said was, as soon as those are filed, the
23 people involved will turn their attention to signing off
24 on the settlement from the written point of view.

25 JUDGE BRENNER: All right. Let's set Monday,

1 January 31st, as the due date for the agreement. That
2 is the date I want it. These dates have been bandied
3 about on other issues, and I just want to set dates for
4 these things. In case we have any questions about it, I
5 want to be able to handle it promptly. And right now I
6 don't know what we are getting, so we will know more
7 when we see it on Monday, January 31st.

8 That is the final agreement. If it is not
9 fully signed because of mechanical problems of one
10 party, it not being convenient for one party or another
11 to sign, that is okay, but I want to know that all
12 parties have finally agreed to that language, and I want
13 to see the language on the 31st.

14 And in light of the fact that the parties
15 report that there is indeed absolute confidence of final
16 resolution, we will defer the testimony filing date, and
17 apparently be able to cancel it if we approve the
18 agreement. So we won't set any new date for that.

19 On the findings, we would appreciate the same
20 courtesy that we got from LILCO. That is, in addition
21 to the individual copies being served in Bethesda, if we
22 could get two copies up here. That doesn't have to be
23 precisely on the filing date, but as soon thereafter as
24 is convenient.

25 MR. BORDENICK: Judge Brenner, could I ask the

1 county representatives present today to serve their
2 findings on my office in Bethesda rather than serve me
3 up here?

4 JUDGE BRENNER: You can ask them.

5 MR. BORDENICK: Thank you.

6 MR. DYNNER: Judge Brenner, do I understand
7 the findings, you want to receive them here?

8 JUDGE BRENNER: We want additional copies
9 here. We want to receive the formally served copies in
10 Bethesda, but we would like two additional sets up here
11 for our use. However, those sets do not have to be here
12 on the due date, if that is inconvenient. We will take
13 them as soon thereafter as is convenient, the next day
14 or the beginning of the following week, and we would
15 appreciate that, but the receipt for the timely service
16 will be the copies that will be received on Thursday by
17 our Bethesda offices.

18 We will ask all parties to do that for us.
19 That is, the staff's filing, and then the reply filings
20 by LILCO also.

21 All right. Is there anything to report on
22 discussions regarding the Readiness Assessment Team
23 inspection?

24 MR. ELLIS: Judge Brenner, we do not think it
25 is appropriate, under these circumstances, we don't

1 think it is appropriate to have these witnesses respond
2 to those questions concerning that report.

3 JUDGE BRENNER: All right. We will receive
4 the detailed outline of what is essentially the cross
5 examination plan first thing tomorrow morning, and then
6 decide, and remember, the argument is not just why the
7 county thinks it is material to ask questions on
8 whatever items in the report it specifies in the filing,
9 but also why the county believes the questions have to
10 be asked of these witnesses, so it is a twofold
11 argument.

12 Okay. Anything else before we finish up the
13 county's cross examination?

14 MR. ELLIS: I thought we were finished. We
15 are prepared to go with redirect.

16 JUDGE BRENNER: No, they said they had a few
17 more questions that they were going to tell you about
18 over lunch.

19 MR. ELLIS: They said they had three more
20 questions, and they got to us at about two minutes to
21 the starting time, so I have not had an opportunity to
22 discuss it with the witnesses or show it to the
23 witnesses. I can address them myself.

24 JUDGE BRENNER: Well, let them ask the
25 questions, and then we will let him finish his cross.

1 Go ahead, Mr. Miller. What do you have? Just
2 a few more minutes, you said?

3 MR. MILLER: Yes, Judge Brenner.

4 JUDGE BRENNER: Okay.

5 Whereupon,

6 LOUIS D. JOHNSON and

7 JOSEPH P. NOVARRO,

8 the witnesses on the stand at the time of recess, having
9 been previously duly sworn, resumed the stand, and were
10 examined and testified further as follows:

11 CONTINUED CROSS EXAMINATION

12 BY MR. MILLER: (Resuming)

13 Q Mr. Johnson and Mr. Novarro, these are just
14 some questions that have been raised during the course
15 of the last two weeks. Mr. Johnson, to begin with, in
16 response to Mr. Dynner's questions last week and the
17 week before, in discussing the scope of Task A, have you
18 had a chance now to identify the effective dates of the
19 current procedures that were reviewed by Torrey Pines in
20 Task A?

21 A (WITNESS JOHNSON) No, sir.

22 Q Have you been able to determine the total
23 populations for each group of items inspected in each
24 task and subtask?

25 A (WITNESS JOHNSON) I have not attempted to do

1 that.

2 JUDGE BRENNER: Mr. Miller, I am confused. I
3 thought you were going to ask questions based upon
4 information they received on those two questions. We
5 know what the state of the record is. At the time they
6 were asked originally, I thought you had particular
7 information that they gave you that you were now going
8 to ask followup questions about.

9 MR. MILLER: Judge Brenner, we are merely
10 trying to determine whether they have made a review of
11 our questions from the previous --

12 JUDGE BRENNER: No, if they don't do anything
13 else, the state of the record is where it is, and we
14 left it that they could give you the information and you
15 could work it into your cross when and where if you
16 wanted to, or LILCO could do it on redirect, or the
17 record could stand as is. Any of those options. Or if
18 you don't have particular new information that you now
19 want to ask about, we know what the record is on those
20 matters.

21 MR. MILLER: We have not been provided the
22 information by LILCO at this point, Judge Brenner.

23 JUDGE BRENNER: Nor did we order them to do
24 that, as you recall. Okay, LILCO is free to pick up
25 where they want to in the redirect. I misunderstood. I

1 thought you had particular information and now wanted to
2 ask something else, given that information.

3 MR. MILLER: If that is the case, Judge
4 Brenner, the county at this time has completed its cross
5 examination.

6 JUDGE BRENNER: Okay. We appreciate your
7 preparing your additional questions this morning at our
8 request. That helped us go into the other CAP's, and I
9 guess, left to your own devices, you would have rested
10 on Thursday. So thank you for that additional work.

11 Mr. Ellis, redirect?

12 MR. ELLIS: Judge Brenner, in terms of general
13 organization, we have made some efforts to streamline.
14 I will begin with some questions concerning some of the
15 CAP's, and then I will proceed more or less
16 chronologically. Where I can, I will refer to general
17 pages in the transcript.

18 REDIRECT EXAMINATION

19 BY MR. ELLIS:

20 Q Mr. Johnson, you testified, and it is evident
21 from the record that you reviewed the CAP's, the
22 Corrective Action Programs. What was the purpose of
23 that review, please, sir?

24 A (WITNESS JOHNSON) In the process of our
25 evaluation of the overall program, both in terms of

1 safety significance and in terms of effectiveness of the
2 program, we in some cases cannot complete that
3 evaluation in terms of a final closure with respect to
4 the findings, and that is why we require the client a
5 preparation of a Corrective Action Plan that primarily
6 relates to either determining precisely what the effect
7 on the margin in the plant is in the specific instance,
8 or it also refers to the cumulative effect of small
9 errors and or errors who one might expect to exist in
10 other places.

11 So, we reviewed the Corrective Action Plans to
12 assure ourselves that those two effects are being
13 addressed by the client. In the case of the
14 construction verification, most of the time it was a
15 question of whether these kinds of errors existed
16 elsewhere, and we wanted to make sure that LILCO was
17 going to investigate for similar instances, and on that
18 basis we determined that the Corrective Action Plans
19 were satisfactory to assure that that look was taken, so
20 that we in turn could make an evaluation of the adequacy
21 of the program and the significance of the findings to
22 derive our conclusion.

23 Q By program, do you mean the QA/QC or
24 construction control program?

25 A (WITNESS JOHNSON) Yes, I do.

1 Q In connection with the CAP Number 2, which I
2 am sure everyone will recall involves the difference in
3 opinion over changing a flow diagram for HVAC, did you
4 consider or take into account in reaching your
5 conclusions whether there was a QA/QC or programmatic
6 problem in this instance?

7 A (WITNESS JOHNSON) Yes, we did that in all
8 cases, based upon what we had seen in the course of our
9 activities.

10 Q What did you conclude in this instance?

11 A (WITNESS JOHNSON) In this specific case, we
12 had looked at a number of other heating, ventillating,
13 and air conditioning flow diagrams, and we had
14 determined that there were on the order of ten to twelve
15 changes on most of those flow diagrams, which clearly
16 indicated that the change in configuration requirement
17 that we had been shown was in fact being applied by
18 Stone and Webster when they updated the flow diagrams.

19 So, we had a confidence based upon what we had
20 looked at that there was not a similar discrepancy type
21 problem, and that the requirements of the construction
22 control program were recognized and were being applied.

23 Q Now, Mr. Novarro, there was a substantial
24 amount of testimony and questions concerning information
25 that you had. What information did you have concerning

1 whether the personnel in Boston were aware of the
2 policies and procedures and were implementing it?

3 A (WITNESS NOVARRCO) Yes, Judge Morris, I think,
4 asked a line of questions in that area, and I stated at
5 the time I didn't think it was just anyone who could
6 make those changes. I verified that the process
7 requires that the lead HVAC control engineer in Boston,
8 where Stone and Webster engineering work is done, has
9 the responsibility to apply that process of updating
10 flow diagrams, duct flow diagrams, in the case of a
11 significant change in respect to the as built duct
12 drawings that were used to build the plant to and
13 approved.

14 So that the process that goes on, the
15 procedure that was used was an application in Boston,
16 and that is the type of person that had to make that
17 decision. That type of an engineer, or lead engineer,
18 would report to the project engineer, as I mentioned.

19 Q Well, did you have information apart from what
20 Mr. Johnson testified to about the drawings that they
21 reviewed? Did you have information that the policy or
22 procedure was in fact being implemented?

23 A (WITNESS NOVARRCO) Yes, we determined that
24 there are a number of the duct flow diagrams that had
25 received revisions in accordance with the procedure.

1 Q Mr. Miller asked you a number of questions,
2 Mr. Novarro, about program for updating flow diagrams
3 that was referenced on Pages 127 and 128 of the prefiled
4 LILCO testimony. Was that program that is referred to
5 in the prefiled testimony the same as or different from
6 the program that was in place at Boston to change flow
7 diagrams where there were significant differences?

8 A (WITNESS NOVARRRO) The procedure to upgrade
9 the -- or update the duct flow diagrams in accordance
10 with the as built drawings was in effect over a number
11 of years on the project, so that is not a new process or
12 a new procedure. In the prefiled testimony there was
13 reference to a final program at the end of the job for
14 various other purposes to do a review of flow diagrams,
15 basically to make them into a form that the operating
16 people, and I think that was stated in the testimony,
17 the operating people would be using in the future.

18 Q That is an additional program then. Is that
19 correct?

20 A (WITNESS NOVARRRO) Yes, it is.

21 Q Mr. Johnson, with respect to the pipe bosses,
22 which was the Corrective Action Program 1, did you
23 review that Corrective Action Program with an eye toward
24 whether there was any programmatic problem in your
25 opinion?

1 A (WITNESS JOHNSON) Yes, we did.

2 Q What was your conclusion?

3 A (WITNESS JOHNSON) We did conclude that it was
4 not a programmatic problem. We had reviewed a number of
5 different kinds of pipe bosses besides the specific ones
6 that were in question, and found no evidence of
7 problems. We observed that the three problems that were
8 identified were in the 1976 time frame, a limited time
9 frame within the construction of the plant.

10 We also observed that it was possible because
11 of the construction control program that was in place
12 for LILCO to go back to Dravo, the piping fabricator,
13 and get out of Dravo's records from six to eight years
14 previous the corrective material certifications such
15 that the material in the piping that was in question was
16 in fact verified with the proper material
17 certification.

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1 Q Now, on the CAP 4, which related to the fillet
2 weld, I believe you testified, Mr. Johnson and, I think,
3 Mr. Novarro, that the similar welds -- I believe there
4 were 80 of them -- were also checked, and that 79 were
5 found to be correct, and in accordance with the design
6 requirement, namely, the fillet weld being there. Does
7 that give you the confidence or is that any indication
8 of whether the drawings were understood by both
9 construction and FQC?

10 A (WITNESS NOVARRO) Yes. I think that was
11 exactly what we were trying to determine at the time we
12 prepared the Corrective Action Plan, and I think Judge
13 Carpenter had asked some questions about whether drawing
14 revisions are very clearly indicated on the drawing, and
15 in this case, we are talking about Drawing Revision 7
16 and Drawing Revision 9.

17 During the break, it was determined that
18 Drawing Revision 8 had in fact showed the change by a
19 circled condition.

20 A (WITNESS JOHNSON) In addition to what was
21 done after this study, which is what Mr. Novarro is
22 referring to, in the context of the study, we had
23 reasonable confidence to believe that there was not a
24 programmatic problem here, because there was no evidence
25 to the contrary in the other pipe supports that we

1 looked at in the realm of missing welds and or missing
2 drawing requirements. I think most of the discrepancies
3 related to pipe supports, related through the location
4 or to the fact that they weren't there yet, and so we
5 had a reasonable confidence in that plus the Corrective
6 Action Plan by LILCO that they would look at all of the
7 similar supports. That was sufficient for us.

8 JUDGE CARPENTER: Mr. Ellis, if I could
9 interject, because this follows the flow, acknowledging
10 that looking at the other pipe supports didn't show the
11 same problem, I still am interested in whether this
12 observation that a detail in a revision was overlooked
13 has implications for the possibility of such details in
14 drawings that show much detail to be overlooked as a
15 generalization of the process, of the construction
16 process.

17 Could you help me with your impressions of
18 that? Not just the pipe supports, but the way in which
19 the papers were processed?

20 WITNESS JOHNSON: I think we looked at a large
21 number of components involving many attributes of our
22 more detailed inspections, and as I said, we didn't have
23 evidence out of those investigations that changes to
24 drawings were being missed. In fact, I think usually we
25 were finding things that appeared to be wrong that we

1 later found that there was a design change document that
2 was available that showed that it was right.

3 And so I think we had evidence to the
4 contrary, that in fact on the plus side, the design
5 changes were being picked up and were being inspected
6 for.

7 JUDGE CARPENTER: Thank you for that broad
8 perspective.

9 MR. ELLIS: Judge Brenner, I am going to go
10 back and now do it probably chronologically. There may
11 be some gaps in the chronology, but that is generally my
12 intent for the convenience of the Board and the
13 parties.

14 Judge Brenner, we assume there were no
15 questions by the staff. They would ordinarily have gone
16 first, I assume. Perhaps we ought to confirm that.

17 JUDGE BRENNER: They are not going to get a
18 chance. They didn't participate in the depositions,
19 which was a prerequisite to examination on this issue.
20 I don't know if they had questions anyway, but that is
21 the reason they weren't asked, and any other party
22 unilaterally not participating in the depositions, they,
23 too, wouldn't have been doing anything here before us.

24 MR. ELLIS: Thank you, Judge Brenner. I
25 shouldn't have assumed. It was an oversight.

1 JUDGE BRENNER: Judge Morris has something.

2 JUDGE MORRIS: Before you go on, Mr. Ellis,
3 Mr. Johnson, was I correct in understanding that you
4 reviewed each and all of the Corrective Action Plans?

5 WITNESS JOHNSON: Yes, that is correct.

6 JUDGE MORRIS: Did you find any that were not
7 wholly satisfactory?

8 WITNESS JOHNSON: I think in the PFR relating
9 to the piping bosses and to the HVAC ducting
10 configuration in the review of the Corrective Action
11 Plan in the potential finding report indicated that the
12 form at least of the Corrective Action Plan was not
13 adequate. That was the comments by the reviewers.

14 I think the form on the remainder of the
15 Corrective Action Plans was basically found adequate.
16 There were some disagreements at times as to what extent
17 one might go to in the corrective action realm in those
18 first two that I mentioned, in the pipe boss area. The
19 reason the form was not there was that basically the
20 corrective action had been executed as part of the PFR
21 process.

22 In the second case, the HVAC ducting
23 configuration, there was sufficient information within
24 the effort by Torrey Pines to indicate that it was not a
25 generic or repetitive type problem.

1 JUDGE MORRIS: And those were the only ones
2 that were not satisfactory?

3 WITNESS JOHNSON: Yes, sir. And in practice,
4 should I say, or in content, I believe those were
5 adequate. Not in the form of what was provided as a
6 Corrective Action Plan, however.

7 JUDGE MORRIS: In your review, did you
8 specifically look to see whether LILCO attempted to
9 identify what has been referred to as root causes?

10 WITNESS JOHNSON: I will stay away from the
11 term "root cause," if I may. Part of our review of the
12 Corrective Action Plan was whether LILCO had reasonably
13 identified the cause of the problem at hand, and I
14 believe that in all cases that cause is reasonably
15 specified.

16 JUDGE MORRIS: Well, if we could characterize
17 LILCO's identification of causes as more or less
18 specific, did you look beyond that to see if there were
19 generic implications?

20 WITNESS JOHNSON: I am not sure I understand
21 your question. I think we looked at the identification
22 of the cause to determine whether we believed it would
23 be a reasonable identification of cause. I think it was
24 our opinion that the cause of these things was human
25 error, that somebody was not performing what they were

1 supposed to perform, and we did give it that evaluation
2 as to whether it was a question of somebody not doing
3 what they were supposed to be doing or whether it was a
4 question of somebody not being told what to do
5 correctly, which might have implications with respect to
6 the program.

7 And we did not identify any of the latter. I
8 think we believed that it was a question of human error,
9 given a requirement to do what was right by the program
10 itself.

11 JUDGE MORRIS: Would you characterize these
12 human errors then as more or less isolated and not
13 indicative of some sort of systematic weakness in the
14 system?

15 WITNESS JOHNSON: Yes, I would, and as I
16 indicated, there is two elements to that. One is the
17 knowledge that we have based upon what we have done, and
18 the positive data that was available to us that would
19 indicate that it was an isolated circumstance, plus the
20 assurance that in areas where there might be a question
21 as to whether it was a repetitive type error, the fact
22 that LILCO's Corrective Action Plan did investigate
23 similar areas to determine whether or not it was a
24 repetitive type error.

25 JUDGE MORRIS: Now, sometimes it is easy to

1 generalize and say things are all human errors.
2 Parallel to that, it is sometimes easy to generalize and
3 say that errors made at the working level reflect
4 management attitudes. Did you consider that
5 possibility?

6 WITNESS JOHNSON: Yes, we did, not in terms of
7 a specific activity, but we did form an impression of
8 the management attitude toward quality assurance on
9 Shoreham, and I think that is best borne out by
10 objective evidence that over a period of over ten years,
11 we were basically able to go back and find quality
12 assurance records on everything that we went after.

13 There are some exceptions, but there are an
14 awful lot of areas where we were able to do that, and
15 that indicates to me that there was a management
16 emphasis on quality assurance back in the early days.
17 Otherwise, those records would not have been available.

18 JUDGE MORRIS: Did you gain an impression that
19 there were some things which were repetitive? Let me
20 give you an example. For example, housekeeping.

21 WITNESS JOHNSON: In the documentation that we
22 looked at, we did not see a lot of items relating to
23 housekeeping. With respect to what we observed, I would
24 say it was a normal construction site. It is not clean,
25 but it is not excessively dirty, either, and you expect

1 some dirt around a construction site, I think. At least
2 I do.

3 JUDGE MORRIS: That is based upon your own
4 experience at other plants, is it?

5 WITNESS JOHNSON: It is based upon experience
6 where I have been around construction activities, yes.

7 JUDGE MORRIS: Not just in the nuclear area?

8 WITNESS JOHNSON: Not just nuclear, but
9 general construction is not a clean activity.

10 JUDGE MORRIS: But including nuclear plants?

11 WITNESS JOHNSON: Including nuclear plants,
12 yes.

13 JUDGE MORRIS: Thank you.

14 BY MR. ELLIS: (Resuming)

15 Q Mr. Johnson, let's go back, early on, to some
16 questions that Mr. Dynner asked you concerning a May 17,
17 1982, letter from Mr. Wessman of Torrey Pines to LILCO.
18 In that letter, I think the phrase appeared, "sensitive
19 political environment." And "usable" report. Could you
20 explain fully what Mr. Wessman meant by those statements
21 and your basis for that understanding?

22 A (WITNESS JOHNSON) Yes, I think so. The
23 intent of those statements, and I can say that they were
24 Mr. Wessman's intent, too, because I had talked to him
25 since the subject came up. With respect to the

1 "sensitive political environment," it was obvious to us
2 that we would have to be especially careful in the
3 independence realm and in the documentation of what we
4 had done realm, so that it would be usable, in terms of
5 the -- wherever, by whoever wanted to use it, the
6 county, or LILCO, or anybody else, to determine
7 precisely what we had done and how we had done it, and
8 the fact that we had maintained our independence with
9 respect to anyone involved, not just LILCO, but anybody
10 else.

11 And it was intended to be a statement relating
12 to caution and completeness, not as the flavor might
13 have been given.

14 Q Also, Mr. Johnson, Mr. Dynner asked you a
15 number of questions concerning two instances in which
16 Torrey Pines marketing personnel contacted a LILCO
17 person. Were there two of these contacts? Is that
18 correct?

19 A (WITNESS JOHNSON) Yes, that is correct.

20 Q Now, would you describe the nature and extent
21 of those contacts?

22 A (WITNESS JOHNSON) Yes, I refreshed my
23 memory. First of all, our intent was to preclude
24 marketing during this period because of the independence
25 aspect. The first instance was in the month of June,

1 where the regional marketing representative who covers
2 the New England territory came to the site to see what
3 we were doing, so that he would understand what we were
4 doing in discussions with other potential clients.

5 While he was there in the trailer that we were
6 in on the site, and I was explaining to him what we were
7 doing, I introduced him to Mr. Novarro, who happened to
8 be in the other end of the trailer, because it was on a
9 Wednesday, and that is when Mr. Novarro was there, and
10 at that point in time Mr. Novarro stated, as he has
11 stated in his deposition and testimony, that there could
12 be no business until this thing was over.

13 The second contact, I believe I said in my
14 deposition, was in the September-October time frame. I
15 was incorrect. It was in early November, after the
16 report was out, and it was a contact with a gentleman at
17 LILCO. I am sorry to say that that contact has not
18 borne any fruit yet. But I think we did take clear
19 steps, and we did in fact preclude our marketing man
20 from making marketing contacts, so there wouldn't be any
21 question about this.

22 Unfortunately, there has been, and
23 unfortunately he was physically at the site at the early
24 part of the program. There was not a serious marketing
25 activity going on, though, and there still hasn't been

1 any serious marketing activity.

2 Q Did the meetings you described, Mr. Johnson,
3 such as they were, play any role whatsoever in the
4 conduct of the Torrey Pines independent verification or
5 conclusions which you reached as a result of that
6 program?

7 A (WITNESS JOHNSON) No, sir.

8 Q There were a number of questions, Mr. Johnson,
9 concerning any role LILCO might have played in
10 connection with the disposition of DR's. Did any LILCO
11 personnel play any role in the decision to validate or
12 invalidate a DR?

13 A (WITNESS JOHNSON) No, sir.

14 Q I think Mr. Dynner on Transcript 17,679
15 commented that, "There was influence in the neutral
16 sense and discussion." To make the record clear, Mr.
17 Johnson, did the contact that Torrey Pines personnel had
18 with LILCO have any influence other than the fact that
19 LILCO provided information to Torrey Pines so that they
20 could continue their process?

21 A (WITNESS JOHNSON) No, sir.

22 Q Was LILCO told the purpose for which the
23 information was being sought?

24 A (WITNESS JOHNSON) Not in terms of
25 discrepancy, no. In terms of trying to find out how

1 some piece of the system worked, or where a specific
2 requirement might be, they were told what we were
3 looking for, but it was an information sense, and not in
4 the resolution sense.

5 Q So they were not told what the specific DR
6 involved was?

7 A (WITNESS JOHNSON) No, they were not. And it
8 would be very difficult for them to perceive that,
9 because we were looking at thousands of things through
10 the course of the project, and to separate out
11 specifically what we were after would be difficult to
12 do.

13 Q Did many of your information requests relate
14 to things other than DR's, such as walkdowns?

15 A (WITNESS JOHNSON) Oh, yes. As we have
16 stated, we obtained around 11,000 documents from LILCO.
17 We also interfaced with them as to where things were
18 located in the plant, and access provisions, and those
19 kinds of things.

20 (Whereupon, counsel for LILCO conferred.)

21 Q Mr. Johnson, let me ask you another question
22 in the same area, if I may. On Transcript Page 18,385,
23 you indicated that LILCO and Stone and Webster personnel
24 were in the vicinity at the time of Torrey Pines
25 walkdowns since they were, I think the term was "all

1 over the place." Were these LILCO, Stone and Webster,
2 and other personnel involved in the walkdowns?

3 A (WITNESS JOHNSON) No, they were not. They
4 were involved in constructing the plant. There were no
5 LILCO or Stone and Webster personnel involved in the
6 walkdowns per se.

7 Q And I think you testified that there were
8 precautions taken by Torrey Pines so that their people
9 did not reveal what they were about. Is that correct?

10 A (WITNESS JOHNSON) Yes, as I have stated, our
11 people were cautioned not to describe what they were
12 doing, what they were finding, either at work or outside
13 of work. This gets back to the concern over
14 independence again.

15 MR. ELLIS: Judge Brenner, there may be a few
16 other type of questions like that buried here. I tried
17 to find them, but I think I have asked them all. I am
18 going to move on to generally the scope area. If the
19 Board has any questions now that it wishes to pursue in
20 this area, if it wishes to do so at this time.

21 JUDGE BRENNER: I think we are inclined to try
22 to let you run right through in general, although we
23 certainly reserve the right to jump in from time to
24 time.

25 MR. ELLIS: I will try to give you in any

1 event some indication of what area I am going to in the
2 preface to the question, or I will stop and do it.

3 JUDGE BRENNER: Okay. Thank you.

4 BY MR. ELLIS: (Resuming)

5 Q Mr. Johnson, in connection with questions Mr.
6 Dynner asked you about Task A, on Page 17,672, he asked
7 you whether Torrey Pines personnel had gone to San Jose
8 to review certification documentation for equipment
9 provided by General Electric. I think you have
10 testified that Torrey Pines reviewed the product quality
11 certification document but not the records in San Jose.
12 Is that an acceptable procedure? And if so, why?

13 A (WITNESS JOHNSON) Yes, I believe it is. The
14 evidence is on site that the item is qualified in the
15 form of a certification document. It is an acceptable
16 and common procedure for a subcontractor to accept
17 certification documents that state that the required
18 information is available to the vendor, and this applies
19 to other people besides GE.

20 Q Mr. Johnson or Mr. Novarro, either one, are
21 you aware of whether LILCO quality assurance personnel
22 audit the quality assurance documentation of the San
23 Jose offices of GE

24 A (WITNESS NOVARRO) Yes, I am aware that LILCO
25 QA personnel have audited the documentation at San Jose

1 of GE.

2 Q Mr. Johnson, on Transcript Pages 17,929
3 through about 36, there were a number of questions
4 concerning the extent to which Torrey Pines reviewed the
5 QA program for subcontractors that had their own safety
6 related QA programs, and I think you testified that
7 Torrey Pines reviewed or confirmed that the
8 subcontractors' QA programs were required to be
9 controlled by LILCO and Stone and Webster QA program.
10 and that you have objective evidence of the programs
11 being implemented through your reviews of physical
12 components, but that you didn't actually review the
13 procedures of those subcontractors except as you found
14 them in the course of your inspection. Is that
15 correct?

16 A (WITNESS JOHNSON) Yes, it is.

17 Q Did Torrey Pines have other evidence that led
18 to the conclusion that the subcontractors' QA programs
19 were being implemented?

20 A (WITNESS JOHNSON) I think we indicated that
21 in Task B one of the audits that was done in that your
22 time slice that we took which was on the Courter
23 program, the piping subcontractor. We also saw evidence
24 of subcontractor audits in the normal procurement
25 process, where subcontractors who were audited for

1 compliance with the quality assurance requirements of
2 the Stone and Webster program. That is not necessarily
3 somebody that had their own program. We also saw
4 evidence of the NES program in the weld inspections that
5 we did relating to the preservice inspection program,
6 portions of that program, not the complete program.

7 Q Is the evidence that you have described in the
8 various tasks adequate to enable you to form a
9 conclusion as to whether the subcontractor QA programs
10 where they had their own QA programs were being
11 adequately implemented?

12 A (WITNESS JOHNSON) Yes, I think the evidence
13 indicated that they were implementing a QA program, and
14 in the specific instances where we were checking against
15 it, it was an adequate program.

16 Q Mr. Johnson, on Transcript Page 17,967, you
17 discussed 20 previous revisions to construction control
18 procedures and QA manuals. What was the purpose of that
19 review?

20 A (WITNESS JOHNSON) I think, as I stated, the
21 purpose of that review was to get an indication of the
22 construction control program and then apply it through
23 the time frame of construction of the Shoreham plant,
24 and we did that by selecting what we thought were the
25 more important procedures at a given point in time,

1 depending upon what was occurring construction-wise in
2 reviewing those earlier revisions for adequacy.

3 Q Well, was 20 an adequate number for that
4 purpose?

5 A (WITNESS JOHNSON) We believe that it was, and
6 part of that reason relates to the fact that we were in
7 other areas of the program comparing what we were
8 finding against the original program, which is an
9 adequate program.

10 Q Was the selection of those 20 an intelligent
11 selection or a random selection?

12 A (WITNESS JOHNSON) I believe I would have
13 called it an intelligent selection.

14 (Whereupon, counsel for LILCO conferred.)
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1 MR. ELLIS: One of my page numbers didn't
2 check out, Judge Brenner. I will come back to that.

3 BY MR. ELLIS: (Resuming)

4 Q Mr. Johnson, you were asked some questions
5 concerning whether you were under the impression that
6 the NRC reviewed Chapter 17.1 of the FSAR. Assume with
7 me for a moment that the NRC did not review Chapter 17.1
8 of the FSAR. Does that make any difference to any of
9 the conclusions you reached in your report?

10 A (WITNESS JOHNSON) No, it doesn't, because we
11 checked the construction control program not only
12 against the requirements of the FSAR but also against
13 Appendix B criteria, and it was satisfactory to both.

14 Q So you didn't rely upon any review by the NRC?

15 A (WITNESS JOHNSON) No, we did not.

16 Q In your testimony, Mr. Johnson, you explained
17 that the Task B components were compared against the
18 requirements contained in the current construction
19 control procedures. Why is it appropriate to do that
20 rather than to do a comparison against the procedures
21 that were in place at the time?

22 A (WITNESS JOHNSON) First of all, it is an
23 efficiency on our part in comparing to a current single
24 program requirement. With respect to adequacy, I am
25 confident that today's program is more stringent than

1 the previous programs simply because procedures and
2 manuals never get simpler, and if the previous activity
3 is satisfactory to today's program, that gives me a high
4 confidence that it was satisfactory to the program in
5 effect at the time or even exceeded the program in
6 effect at the time.

7 Q On transcript page 17,697, Mr. Johnson, you
8 indicated that Torrey Pines used the LILCO list of
9 safety-related systems or systems containing portions
10 that were safety-related as an initial identification of
11 safety systems. Did Torrey Pines make an independent
12 judgment as to the appropriate systems or components to
13 be included in the Torrey Pines inspection?

14 A (WITNESS JOHNSON) Yes. I think we indicated
15 that we went through the FSAR and the accident analysis
16 and the system descriptions and the flow diagrams to
17 confirm what we believed was appropriate to look at as
18 far as the safety-related equipment was concerned.

19 MR. ELLIS: I think I have the right page now
20 on the previous one, Judge Brenner.

21 BY MR. ELLIS: (Resuming)

22 Q Mr. Johnson, look at page 17,975 and 6. Look
23 at the bottom of 975. Do you have that, Mr. Novarro?

24 A (WITNESS NOVARRO) Yes, I do.

25 Q Now, at the bottom of that page you were asked

1 whether you testified first that from lines 15 through
2 line 23 -- I won't summarize it, but you gave that
3 testimony, and then you were asked whether your basis
4 for that testimony was based upon the fact that in
5 LILCO's QA procedures revisions are not major in
6 general? And you answered "No." What did you mean by
7 that?

8 A (WITNESS NOVARRO) I meant by the "No" that I
9 had not only reviewed LILCO QA procedures but I had
10 looked at over the course of my work at Shoreham many
11 Stone and Webster procedures, so the "No" meant not to
12 just LILCO but to others, including Stone and Webster.

13 Q The testimony then on page 17,975, lines 15
14 through 23, is based on your experience with both LILCO
15 and Stone and Webster procedures?

16 A (WITNESS NOVARRO) Yes, it is.

17 Q Mr. Novarro, in several instances relating to,
18 I believe, the subcontractor Keasby, you referred to the
19 balance-of-plant. Did that refer to any specific
20 classification of equipment?

21 A (WITNESS NOVARRO) My use of the word
22 "balance-of-plant" was intended to mean
23 non-safety-related.

24 Q Mr. Johnson, with respect to the testimony
25 concerning subcontractors who have their own QA

1 programs, was that fact taken into account by Torrey
2 Pines in developing its procedures and protocol for the
3 Shoreham inspection by Torrey Pines?

4 A (WITNESS JOHNSON) With respect to the
5 requirements for the QA/QC program, we expected to see
6 requirements specified for any subcontractors, and we
7 did in fact see that.

8 Q In formulating your program, though, were you
9 generally aware that there were contractors who would be
10 contractors who would have their own QA programs that
11 you wouldn't be reviewing?

12 A (WITNESS JOHNSON) Yes, we were, but the
13 requirements for those programs are as specified in the
14 Stone and Webster program.

15 (Counsel for LILCO conferred.)

16 Q Mr. Novarro, you gave a number of estimates
17 concerning the percentages of construction at Shoreham
18 for which certain subcontractors were responsible or
19 were those estimates based upon any review of
20 documentation?

21 A (WITNESS NOVARRO) No, they were not. They
22 were based upon an assessment that I made here on the
23 witness stand on that day.

24 Q Well, Mr. Johnson, let's assume that as much
25 as 30 percent of the safety-related work at Shoreham was

1 conducted by contractors with their own QA program.
2 Does that affect the conclusions that you reached in
3 your general report?

4 A (WITNESS JOHNSON) No, it does not, because we
5 saw evidence of those contractors working to a QA
6 program, and that was part of what we were investigating.

7 Q Mr. Johnson, on transcript page 17,952 I think
8 you testified in response to Judge Brenner's questions
9 that from Task A alone you could not determine whether a
10 subcontractor's QA program was actually being
11 implemented. Are there other aspects of the program
12 logic that permit you to reach that conclusion; and if
13 so, give me a summary, if you will?

14 A (WITNESS JOHNSON) Yes. I think as generally
15 was testified to in a number of places, the
16 implementation of the program was observed in Task B and
17 in Task C. And with respect to any in Task D we saw a
18 number of places where it was evident that both
19 subcontractors with their own QA programs and
20 subcontractors who were working to Stone and Webster's
21 program were in fact working to those programs.

22 Q Mr. Johnson, look, if you would, please, at
23 transcript page 18,351 where you were asked a number of
24 questions concerning the differences in total numbers of
25 DRs stated in the executive summary as compared, I

1 believe, to Volume 2. Can you explain those numbers at
2 this time?

3 A (WITNESS JOHNSON) Yes, I can. They are
4 wrong. The numbers in the executive summary,
5 unfortunately, are a mixture on the DRs between valid
6 DRs and invalid DRs, or valid and total DRs, I should
7 say. And there is also one area where, as the County
8 pointed out, a DR was related to Task D on the
9 structural acceptance test, and that didn't show up. So
10 I made a listing of total DRs, which was not something
11 that we were greatly concerned with. Our focus was more
12 on the valid DRs.

13 But as far as total DRs, I will run down the
14 list here. Task A had zero. Task B had 25. Task C had
15 298. D-1 was zero. D-2 was zero. D-3 was one. E-1
16 was 12. E-2 was 35. For a total of 371.

17 We arrived at these data using the data that
18 is in Volume 2 of the report on the specific DRs.

19 Q Are the conclusions that the report reaches
20 based on all of the data in the report rather than
21 numbers in the executive summary?

22 A (WITNESS JOHNSON) Yes. In fact, the
23 executive summary was intended to be, as the name
24 implies, a short summary of what went on. To talk about
25 the conclusions of the report, one has to get into

1 Volumes 2 and 3 and into the details of what was done.

2 Q Mr. Johnson, on transcript page 18 -- excuse
3 me, were you done?

4 A (WITNESS JOHNSON) Yes.

5 Q On transcript page 18,248 there was some
6 discussion and testimony concerning the use of the word
7 "small." And I think you indicated that "small" was in
8 the 300 ballpark on discrepancies. Would it have made
9 any difference to your conclusion if the number of
10 discrepancies or findings had increased by a factor of,
11 say, 2 or 3, had the same safety and QA/QC significance
12 been the same?

13 A (WITNESS JOHNSON) Given the qualifier of the
14 same significance and the same indication with respect
15 to the effectiveness of the program, a larger number
16 would not change the conclusion of the report. In my
17 mind, the number of hundreds is a very small number
18 compared to the number of things we looked at and
19 compared to the number of things we found right. And
20 that is the context of the term "small" there.

21 JUDGE BRENNER: Mr. Johnson, let me ask you
22 this. I take it you say those numbers and given the
23 qualifier of the same types of discrepancies, that those
24 numbers or two or three times those numbers would still
25 be all right, given the many other things that were found

1 to be done correctly.

2 Do you mean to say that the large majority of
3 things done were done okay and that is why it is all
4 right, or do you mean to say that those numbers would be
5 acceptable from the standpoint of a high standard of
6 reasonably protecting the public health and safety?

7 A (WITNESS JOHNSON) I think the qualifier
8 there, Judge Brenner, is significance, and what those
9 numbers might say about the result of application of a
10 construction control program and both of those
11 qualifiers relate to safeguarding the health and safety
12 of the public.

13 And I believe that the level of significance
14 that we are looking at here is not large. I believe the
15 level of significance is small. You can find errors in
16 anything if you magnify it enough.

17 And the significance of the errors that I
18 identified must be considered, and in the context of the
19 significance of errors that we identified, assuming that
20 stays the same and assuming that we don't see repetitive
21 type things in that larger population that would
22 indicate that portion of the program was not operating
23 correctly, then a larger total number of things would
24 not bother me.

25 We could find very large numbers of very small

1 things that would not affect the health and safety of
2 the public, and that is the context of saying that a
3 larger number of things would not necessarily bother me.

4 JUDGE BRENNER: Okay, Mr. Ellis.

5 BY MR. ELLIS: (Resuming)

6 Q Mr. Johnson, in your testimony you used the
7 term at one point, "noise." Does that relate in any way
8 to the answer you have just given to Judge Brenner?

9 A (WITNESS JOHNSON) I think you are talking
10 about a term of noise level. Certainly, some of the
11 things that we identified would be classified in noise
12 level as far as the significance of them relating to the
13 safety of the plant is concerned. I believe most of the
14 things that we identified were in the noise level. The
15 cumulative effect of those things also must be
16 evaluated, and I believe we did that too. And I don't
17 believe we have identified anything that would indicate
18 that some portion of the program was not working
19 properly.

20 In our opinion, what we have identified is
21 cases where the program is cases where the program is
22 properly constituted, and it was not followed in these
23 given instances.

24 Q Mr. Johnson, you testified that Torrey Pines
25 in its inspection did not review the adequacy of the

1 design. So that we are clear, though, did the Torrey
2 Pines inspection include a review or inspection to
3 ensure that the design changes were being implemented?

4 A (WITNESS JOHNSON) Yes. We ran into that in
5 many areas. Design changes, once they are made, become
6 the design requirement, and the design requirement was
7 our baseline. And the design change documents many
8 times were the basis for what we were calling the design
9 basis that we were comparing to. And in that respect,
10 we many times verified the design change documents had
11 in fact been implemented at the plant.

12 Q Mr. Johnson, look, if you would, please, at
13 transcript 18,080.

14 A (WITNESS JOHNSON) I have it.

15 Q It begins over on 079. Judge Morris, I
16 believe, is asking a question there. And if you will
17 look on 18,080, roughly lines 4 through to the end, are
18 the problems that you see with the application of
19 statistical methodology to the inspection of a nuclear
20 power plant problems with theory or mathematical
21 operations, or are they the problems relating to models
22 and presuppositions, as stated by or as indicated by
23 Judge Morris in that instance?

24 A (WITNESS JOHNSON) The problems I see are in
25 the presuppositions or models involved. The ability to

1 gradate or stratify the significance of an error, for
2 example, whether it was a signature error or what the
3 significance of the signature was. And these kinds of
4 things are all presuppositions that would have to go
5 into a statistical model. And I think we have discussed
6 quite a few of those things at length already.

7 Q Look, if you would, please, at transcript
8 pages 18,094 through 97. There was testimony there
9 concerning five systems listed on Appendix 5.1 of LILCO
10 Project Procedures P-309. In your analysis of the path
11 to cold shutdown, were any of those systems, those five
12 systems, required in order to achieve cold shutdown?

13 A (WITNESS JOHNSON) Not on the path that we
14 selected for cold shutdown, no.

15 Q Mr. Novarro, do you have that procedures in
16 front of you?

17 (Pause.)

18 A (WITNESS NOVARRO) Yes, I do.

19 Q The five systems there, is it a completely
20 accurate description to call them safety-related
21 systems, in paragraph 5.1?

22 A (WITNESS NOVARRO) No, it is not. There are
23 only a very few portions of these systems that are
24 safety-related. And in some cases there are none.

25 Q Well, the condensate and feedwater system is a

1 non-safety-related system, is that right?

2 A (WITNESS NOVARRO) Yes, it is.

3 Q Does it have any safety-related portions, or
4 components, rather?

5 A (WITNESS NOVARRO) Yes. The only
6 safety-related component in the condensate and feedwater
7 system that I am aware of is the interface of the system
8 at the containment.

9 Q Okay, Mr. Novarro.

10 (Counsel for LILCO conferred.)

11 Q Mr. Johnson, Mr. Dynner asked you a number of
12 questions about items on Table 3.2.1-1 that were not
13 included in the scope of the Torrey Pines review. Does
14 the omission of those items that you said were not
15 included have an impact or affect the conclusions
16 reached in your report?

17 A (WITNESS JOHNSON) Not in my opinion. Our
18 intent was to select representative and more important
19 safety-related hardware within the plant for our
20 investigation. And I believe we did that. And in that
21 context, we determined that the construction control
22 program was functioning properly with respect to those
23 components, and therefore, we have a high assurance that
24 it is functioning properly with respect to the other
25 components on that table that were not specifically

1 investigated.

2 JUDGE BRENNER: Well, Mr. Johnson, on those
3 other components that were on that Table 3.2.1-1, I
4 guess it is, or a number close to that, that were within
5 systems that were not among the systems considered by
6 Torrey Pines, did you actively consider and reject
7 looking at safety components in those other systems, or
8 did you not know about safety components in those other
9 systems but nevertheless feel that is acceptable for the
10 reason you indicated?

11 WITNESS JOHNSON: We were obviously aware that
12 there is a lot of safety-related hardware in the plant
13 that we didn't necessarily look at specifically. We did
14 select a path to cold shutdown that we thought was a
15 reasonable one, and that in our mind identified the more
16 significant elements in the safety-related hardware.

17 In some cases on that table the types of
18 hardware indicated were looked at in terms of other
19 safety-related hardware, so we could say that a similar
20 type was looked at that might be more important than the
21 one that is indicated in the table. In other cases we
22 assumed that the construction control program having
23 been shown to be functional and valid in other cases
24 would also apply to those components since they are also
25 safety-related.

1 It wasn't a question of consciously rejecting
2 those, it was a question of selecting what we felt were
3 more important components to look at.

4 JUDGE BRENNER: How did you decide which path
5 to cold shutdown to use as what you considered the most
6 important path?

7 WITNESS JOHNSON: As I stated, we reviewed the
8 FSAR, the accident analyses, the system description
9 documents, the flow diagrams, and we selected what we
10 thought was the predominant path to cold shutdown.
11 There are many paths to cold shutdown in the plant, and
12 we selected the one of them that we thought was an
13 appropriate one to select.

14 I might also mention that in some of these
15 other systems we may well have covered some of those
16 items in the walkdowns that we did, because we went to
17 the pressure boundary in many of those cases and some of
18 those are the interfaces with the other systems that
19 have the safety-related equipment that Mr. Novarro is
20 describing, like the isolation valves and those kinds of
21 things.

22 JUDGE BRENNER: You said predominant path. I
23 guess I don't understand what you mean by "predominant."

24 WITNESS JOHNSON: I am not sure how to
25 describe it. The most likely path to cold shutdown,

1 that might be a different way of saying it.

2 JUDGE BRENNER: Mr. Ellis.

3 BY MR. ELLIS: (Resuming)

4 Q Just to follow up a minute, Mr. Johnson, did
5 you know that when you were in the process of selecting
6 your components for inspection, that Shoreham had a
7 condensate feedwater system?

8 A (WITNESS JOHNSON) Yes, sir.

9 Q Did you also know whether it had a radwaste
10 system?

11

12 A (WITNESS JOHNSON) Yes.

13 Q Well, in that sense, then, did you know that
14 you were not specifically including those systems in
15 your inspection?

16 A (WITNESS JOHNSON) Yes, we determined that
17 they were not essential to the path that we had
18 selected, and therefore, we did not include them.

19 Q Mr. Johnson, let me clarify one point. On
20 transcript 18,107 you indicated that fewer items were
21 examined at Level 2 walkdowns than Level 1. Could you
22 explain what you meant by that, please, sir?

23 A (WITNESS JOHNSON) Generally, the numbers of
24 components selected was less at Level 2 than at Level
25 1. The number of attributes checked, of course, was

1 much greater at the lower levels of detail. So I can't
2 really comment on the comparison of numbers of
3 attributes checked. But the intent of the statement was
4 to relate to components rather than specific items
5 checked.

6 Q On transcript page 18,152 and 3 you were asked
7 questions about the safety parameter display system.
8 Did Torrey Pines look at the electric modules for the
9 SPDS?

10 A (WITNESS JOHNSON) It is my understanding that
11 the electrical modules of the SPDS are in fact -- parts
12 of it are systems where the parameter signals are taken
13 off of safety-related equipment. We did review, as was
14 mentioned in the cross-examination, generic control
15 elements of the logic circuitry, and in that context we
16 would have reviewed some of the parameters relating to
17 the SPDS system.

18 Q On the issue of scope, Mr. Johnson, look, if
19 you would, please, at pages 9 and 10 of Mr. Hubbard's
20 testimony.

21 A (WITNESS JOHNSON) Yes.

22 Q At pages 9 and 10 Mr. Hubbard quotes figures
23 from 7-25, I believe, of the Torrey Pines report and
24 contends that those figures show that the scope of
25 electrical inspection was insufficient and that this is

1 a deficiency in the report. Do you agree?

2 MR. DYNNER: Objection. That wasn't covered
3 in the cross-examination. This is supposed to be
4 redirect, isn't it?

5 JUDGE BRENNER: I recall -- I don't have the
6 transcript in front of me -- I recall some questions as
7 to whether or not the number of deficiencies found,
8 given the percentages of what were looked at, would
9 indicate a high, a very high percentage of deficiencies
10 for that type area. And I think it was asked about the
11 electrical area along with the pipe support area. And
12 there was also the area inquired into as to whether
13 emphasis on one area supplanted looking at another
14 area. So I think it is close enough to that.

15 MR. DYNNER: Judge Brenner, as I recall the
16 questions that I asked in this area were as to the
17 population, man-hours, et cetera. Specifically on page
18 7-25 of the report, I think by referring specifically to
19 a page of Mr. Hubbard and Dr. Samiego's testimony that
20 it appeared from that an effort is being made to take
21 that testimony rather than to elicit --

22 JUDGE BRENNER: That is what this is all about.

23 MR. DYNNER: -- rather than to elicit a
24 clarification of the cross-examination which was not in
25 this area.

1 JUDGE BRENNER: It is close enough. And as I
2 started to say, one thing that assists the Board is to
3 get these experts with different views to comment on the
4 other experts' testimony, and that is one reason we have
5 written testimony. And if you want to label it a little
6 quick rebuttal then, you can label it that. But I think
7 it is close enough to the cross, in any event.

8 Go ahead. Do you need the question repeated,
9 Mr. Johnson?

10 WITNESS JOHNSON: No, I don't believe so.

11 It is my opinion that we did look at
12 appropriate numbers of electrical components on a system
13 basis. Out of the 37 systems, there are 27 of those
14 that are predominantly mechanical and 10 that are
15 predominantly electrical. If we compare active
16 components between those sets of systems, that is
17 roughly a 2-to-1 ratio, and that is roughly the ratio of
18 components that we looked at between the mechanical and
19 electrical active elements.

20 JUDGE BRENNER: Mr. Ellis, we will take an
21 afternoon break whenever it is convenient for you.

22 MR. ELLIS: This would be a good time. And
23 let me say for the planning purposes of the Board and
24 the parties, I am pretty sure I can finish today. Now,
25 whether I will finish -- I think I can finish today, and

1 it might assist things if we could have an extra 5
2 minutes perhaps at the break. But I am pretty sure I
3 can finish today.

4 JUDGE BPENNER: Okay. We will take 20 minutes
5 then until 3:35.

6 (Whereupon, a brief recess was taken.)
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1 JUDGE BRENNER: Mr. Ellis, I don't know if
2 this is going to be pertinent to anything or not, but in
3 thinking over something you said, admittedly only in
4 passing, I am a little confused. I infer from something
5 you said that Mr. Johnson would be leaving as soon as
6 his testimony is done, as distinguished from giving you
7 comfort while you were cross-examining the County.

8 MR. ELLIS: I don't know what decision we have
9 made. We haven't made a decision finally, but I do know
10 that he will be here tomorrow.

11 JUDGE BRENNER: Well, that I know for sure
12 because he will still be answering questions tomorrow.

13 MR. ELLIS: Well, we frankly hadn't decided on
14 the extent to which he would remain.

15 JUDGE BRENNER: I thought I heard you say you
16 hoped he would be leaving today. All right, you have
17 answered my question. It may affect our turnaround
18 decision time on whatever filing we are going to see no
19 later than 8:30 or so tomorrow morning. That is why I
20 asked.

21 BY MR. ELLIS: (Resuming)

22 Q Mr. Johnson, on transcript page 18,012 there
23 was testimony concerning the Torrey Pines review of
24 documentation requirements, purchase order and
25 documents. Does TPT review the accuracy of the

1 documentation requirements versus the specification
2 requirements from engineering?

3 A (WITNESS JOHNSON) I believe you are referring
4 to the discussion relating to Task B, where we reviewed
5 the implementation of the program in the procurement
6 process. And I think I indicated that we did not review
7 the adequacy of the design documents per se, but rather
8 we reviewed the purchase order documents to assure that
9 the design requirements were specified on the purchase
10 order either by comparing the requirements on the
11 purchase order to the design requirement or, in most
12 cases, ensuring that the design and specification was a
13 part of the purchase order.

14 Q Thank you. Mr. Novarro and Mr. Johnson, in
15 terms of methodology, I think it is abundantly clear,
16 which immediately belies whether I should be asking the
17 question, but in your deposition, Mr. Novarro, which I
18 think you corrected in your cross-examination, you
19 answered questions concerning whether considerations of
20 safety were considered in the validation process for
21 DRs. Do you recall that?

22 A (WITNESS NOVARRO) Yes, I do.

23 Q And is safety considered in the validation
24 process?

25 A (WITNESS NOVARRO) No, it is not. However,

1 when we were discussing that when Mr. Dynner was
2 questioning me, I was referring to both set of boxes on
3 the DR document, the one set used to determine whether a
4 DR was valid or not. In that instance, it is my
5 understanding that safety is not the consideration.
6 However, in the other set of boxes that are used on the
7 DR forms there is a decision made as to whether a PFR is
8 to be generated from the DR, and in that case safety is
9 considered.

10 Q Was that your understanding also at the time
11 you took your deposition -- your deposition was taken?
12 I am sorry.

13 A (WITNESS NOVARRO) Yes, it was. But, however,
14 the questioning and the answering got kind of confused
15 at that time, and I guess it wasn't clear on the record.

16 Q Mr. Novarro, on a couple of occasions you gave
17 a rough estimate of components at Shoreham. On
18 transcript 18.316 and 317 you indicated a number of
19 200,000. Does that include both safety-related and
20 non-safety-related?

21 A (WITNESS NOVARRO) Yes, it does.

22 Q Mr. Johnson, on page 18,362 you were asked a
23 question concerning Question 16 on page 10 of the
24 supplemental testimony.

25 Judge Brenner, for the convenience of the

1 Board, this is a question that I believe you asked
2 involving whether the reference was to two or to three
3 DRs.

4 Do you have that in front of you, Mr.
5 Johnson? 18,362.

6 A (WITNESS JOHNSON) Yes, I do.

7 Q All right. In response to the question there,
8 I think from Judge Brenner, you indicated that the
9 response applied to two of the three. Does the answer
10 in fact apply to just two or to three?

11 A (WITNESS JOHNSON) The answer does apply to
12 all three, in that the flow diagram does not specify
13 requirements for all three of the subject DRs.

14 Q Mr. Johnson, during your cross-examination you
15 were examined on a number of occasions concerning
16 Appendix B. One reference is transcript 18,417. You
17 testified in your opinion that a single noncompliance
18 was not in general a violation of Appendix B.

19 Assume for a moment, if you would, please,
20 that a single failure to comply with a requirement does
21 constitute an Appendix B violation. Would that change
22 your conclusion regarding the adequacy of LILCO's and
23 Stone and Webster's QA/QC program or the conclusions in
24 your report?

25 A (WITNESS JOHNSON) No, it would not. If a

1 single error to follow a procedure were defined as being
2 a technical violation of Appendix B, that would not
3 change our conclusions, because the purpose of Appendix
4 B is to result in safety-related hardware that performs
5 its function. The purpose of the QA/QC program, in my
6 mind, is to restrict the significance of errors that are
7 made. And whether you call those technical violations
8 of Appendix B or violations of a procedure may be a
9 definition of terms.

10 The Appendix B program is satisfactory against
11 Appendix B. I think the program recognizes and Appendix
12 B recognizes that you can't achieve zero defects. That
13 is not a real-world thing. And I think the intent is to
14 insure that defects or errors that occur are not of
15 significance with respect to the safety function of the
16 hardware in the plant.

17 So given a definition that an error is a
18 technical violation of some criterion of Appendix B, I
19 would still go through the significance chain of thought
20 and I would still buy that the conclusion that the QA/QC
21 program at Shoreham has been effectively applied in that
22 the errors that we found were not of significance and
23 that the plant hardware has been constructed correctly
24 because we did not find anything that would prevent that
25 hardware from performing its safety function.

1 So the answer is, no, I still have the same
2 conclusion, given the different definition.

3 Q Look, if you would, please, Mr. Johnson, at
4 transcript 18,417. Would you read, please?

5 And, Judge Brenner, this is in the category.
6 We have gone through this, and we have some corrections
7 to the transcript. This one is in the category that is
8 close, and so I want this one clarified. But we will
9 give to the County and the Board our preliminary list
10 this evening of corrections.

11 Mr. Johnson, read, please, if you would, your
12 answer that begins on line 9 and goes to line 18.

13 A (WITNESS JOHNSON) That states, I think, we
14 testified in the beginning of the construction, if the
15 beginning of the construction control program meets the
16 requirements of Appendix P through the FSAR -- and I do
17 think what we are discussing is that the requirements of
18 the construction control program are not being met -- if
19 you wanted to make the extension to Appendix B, that is
20 all right with me if it is the construction control
21 program that is tied to Appendix B.

22 But the problem at hand is not meeting the
23 construction control requirements, assuming the
24 inspection had occurred.

25 JUDGE BRENNER: Maybe I missed something. I

1 think he wanted you to read it to yourself.

2 MR. ELLIS: I did.

3 BY MR. ELLIS: (Resuming)

4 Q Would you explain what you meant by that
5 answer, please?

6 JUDGE BRENNER: In fact, he did not reread it
7 perfectly, but that's okay.

8 WITNESS JOHNSON: I think again, as with most
9 of these answers, what I was relating to was that in my
10 mind the errors that are identified are errors against
11 the construction control program and that the Appendix B
12 requirements are programmatic requirements on that
13 program. And again in this specific case, I didn't
14 think it was appropriate to tie it directly back to
15 Appendix B, because the program, as I see it, meets the
16 requirements of Appendix B. And the fact that an error
17 is made does not negate the effectiveness of the program.

18 BY MR. ELLIS: (Resuming)

19 Q While you have got that volume in front of
20 you, Mr. Johnson, look at 18,429 and look at your answer
21 that appears on lines 15 through 17, and tell me if your
22 answer is accurately recorded there?

23 A (WITNESS JOHNSON) No. This is typical of our
24 transcript problems in a number of areas. What it says
25 is that that is why there has been virtually no program

1 to insure that they are in compliance with Appendix B.
2 That should read: That is why there has been a
3 construction control program to insure that they are in
4 compliance with Appendix B.

5 MR. ELLIS: Judge Brenner, that is what I had
6 in mind as an example. And I will try to make that
7 available. We have copies right now of a few pages that
8 we can give to the County and to the Board. But we
9 haven't finished our review.

10 JUDGE BRENNER: Okay. I understand. We are
11 going to get corrections on a complete list shortly,
12 tomorrow you estimate. I am not sure what the
13 distinction is in your mind between the ones on that
14 list and the ones you want to do orally now.

15 MR. ELLIS: Some of them are like that, and
16 some of them are much less. And we are not going to
17 bother with the ones that are much less. I think we
18 will give the list to the Board and the parties and see
19 if we are in agreement as to what they say, while the
20 witnesses are here.

21 JUDGE BRENNER: So you really don't have to do
22 any of them orally.

23 MR. ELLIS: That's right. I don't think I
24 plan to do any more.

25 JUDGE BRENNER: Okay.

1 BY MR. ELLIS: (Resuming)

2 Q Following up on a line a moment ago, Mr.
3 Johnson, look at transcript 18,420, where Mr. Miller
4 asked you whether it was merely fortuitous that DR-145
5 had no safety significance. I think you indicated in
6 your testimony that in connection with an number of the
7 DRs, that they had no safety significance. Is that, in
8 your opinion, fortuitous, or does it indicate anything
9 about Shoreham?

10 A (WITNESS JOHNSON) I think in my mind it
11 indicates that the program is functioning in the manner
12 in which Appendix B intends it to function; namely, to
13 constrain the significance of errors such that they
14 don't affect the safety of the plant.

15 Q On page 423, 18,423, you indicated that some
16 DRs related to pipe support locations were indicative of
17 a construction process that does not locate pipe
18 supports precisely. Did you mean by that that there was
19 something inadequate or wrong with the QA/QC program or
20 construction program at Shoreham?

21 A (WITNESS JOHNSON) No, that was not the
22 intent. The pipe construction program at any nuclear
23 plant and most fossil plants is a drawn-out process that
24 starts with concepts and ends up with a final product
25 that accommodates all of the other elements in the plant.

1 And the intent of that statement as to
2 indicate that the point in the construction process that
3 existed at the time those DRs were written had not
4 proceeded to the point where the precise location of
5 pipe supports would have been established and made to
6 match a design analysis on the piping system with the
7 supports precisely located. So it was not intended to
8 be an indication of a lack of an adequate system, but
9 rather an indication of the point in the process at
10 which the Shoreham plant was at the time we did our
11 review.

12 Q Also in your testimony you I think agreed with
13 Mr. Miller that some of these DRs reflected a pattern.
14 Did you mean by that to infer anything relating to the
15 QA/QC program?

16 A (WITNESS JOHNSON) No, I did not. Again, that
17 related to the status of construction at that point in
18 time. And it was not surprising that a number of items
19 relating to the location were identified because the
20 final precise locations were in the final process of
21 being established and constructed in the plant.

22 Q Mr. Novarro and Mr. Johnson, both of you may
23 want to do this. Feel free to contribute. Would you
24 explain to the Board, please, the general process for
25 locating, analyzing, and documenting the construction of

1 pipe supports, large-bore pipe supports, at Shoreham?

2 A (WITNESS NOVARRO) Yes, I will try to be brief
3 and explain an iterative process that takes place over a
4 number of years and, as we have testified, too, is still
5 under way.

6 Early on in a nuclear project piping systems
7 are laid out in conceptual drawings. When systems are
8 first identified and shown early on, there is some
9 stress analysis work of a preliminary nature that is
10 done to confirm the general stress problems associated
11 with that piping.

12 The next step generally is to produce a piping
13 drawing which will be used to go out and get someone to
14 fabricate the pipe and install it. Further detail from
15 the conceptual level up.

16 There is an intermediate stress analysis that
17 is done at that point to take into account the more
18 detailed design that has been done. At that point in
19 time generally we have more details to identify the
20 actual hangers themselves, what they look like in shape
21 and form. And we have related to those as BC drawings
22 in this context over the last several days.

23 And in the case of the piping itself, the
24 piping fabricator Dravo produces isometric drawings that
25 show the actual bends and dimensions of the piping run.

1 Both piping and hangers are fabricated by their
2 suppliers. In our case, that was Dravo Corporation and
3 Marietta. And many of our hangers were fabricated by a
4 company whose name escapes me for the minute, but I will
5 think of it. Well, I will come back to it.

6 At any rate, we bought hangers as fabricated
7 by a company. The fabrications are delivered to the
8 site. And of course, this takes place over a number of
9 years also.

10 The actual piping runs or in accordance with
11 the piping iso's are installed along with the hangers in
12 accordance with the BC drawings. Now, when one puts
13 piping and hangers into a large plant, the tolerances
14 that are generally allowable at that point reflect the
15 difficulty of making actual installations in a complex
16 area geometry. So that there are in most cases pretty
17 large tolerances in the case of hangers, some cases, up
18 until a 12 inches of tolerance allowed in the actual
19 location of the hardware in the plant location.

20 Once the piping and the hangers have been
21 installed in accordance with the drawings, the next step
22 is to accurately determine where the hangers and the
23 piping is in accordance with the isometric drawings.

24 This is an as-built analysis. So once the
25 hangers and piping have been installed in accordance

1 with their individual tolerances, they are then related
2 on isometric drawing to the as-built condition.

3 At this point generally the hangers are
4 inspected by FQC as to configuration and location in
5 accordance with the BC drawings that we have been
6 talking about, and a similar situation occurs with the
7 piping isometrics.

8 When the as-built isometric information has
9 been compiled, now, we finally have gotten down the
10 information from the larger tolerances that the
11 individual components, piping and hangers are installed
12 to to very small tolerances, actual as-installed
13 dimensions plus or minus an inch in most cases, a final
14 stress analysis is then done on the as-installed
15 as-located dimensions on the iso's.

16 This final stress analysis takes into account
17 all of the known information about the components in the
18 piping system, the actual valve weights, and things of
19 that nature that go beyond just the actual location of
20 the piping and the hanger .

21 Now, the final stress analysis in most cases
22 goes through several iterations because, as I testified
23 earlier, in some cases we find that the as-installed
24 location of a hanger may have to be changed. In some
25 cases this is minor and some cases it could be beyond

1 that.

2 So the last step has gone through several
3 iterations in recent months. This is part of the stress
4 reconciliation program that we described earlier. So
5 that throughout the time that Torrey Pines was at the
6 job site, things of this type, steps of these types were
7 taking place in the orderly course of preparing the
8 as-built drawings and doing the final stress
9 reconciliation.

10 This is not an unusual event. This is a
11 requirement at the end of a job that ultimately produces
12 a set of drawings that accurately reflect the as-built
13 conditions of the plant to very, very close tolerances
14 and matches that to the final stress analysis on that
15 as-built condition.

16 Again, this was all going on -- and is still
17 to some degree going on at the site today -- while
18 Torrey Pines was at the job site.

19 JUDGE CARPENTER: Mr. Novarro, if the process
20 is as you described it, why did you choose to have
21 Torrey Pines inspect all of these pipe supports? Just
22 to let me see the relationship.

23 WITNESS NOVARRO: Well, I think I mentioned
24 earlier, Judge Carpenter, that when we asked Torrey
25 Pines to do that -- it was in May when we committed the

1 work to them -- we were very hopeful that we were going
2 to have this iterative process completed during the
3 summer. And then, of course, if that were the case,
4 Torrey Pines would have seen the completion of the
5 work. As it turned out, this has become a very
6 time-consuming process. And it is nearing completion
7 now, but it is not finished. So that was part of it.

8 And the other reason is that I think that in
9 looking at all of the pipe hangers like Torrey Pines
10 did, we found only a very instances that we have talked
11 about where even though the process was going on, many
12 of the things were completed and were finalized. So
13 many times in these 2 weeks of testimony we have talked
14 about the things that they found that were not exactly
15 right, they found many, many pipe hangers that were
16 finished and were in the correct location and part of
17 the final stress reconciliation completion.

18 JUDGE CARPENTER: I didn't express my question
19 clearly. It is very clear why Torrey Pines found pipe
20 hangers in various different stages. I would ask, given
21 the process that you were describing, why did you have
22 questions about it which led to getting an external
23 group to do a full inspection? What aspect did you hope
24 to put under the magnifying glass by doing that, to use
25 Mr. Johnson's term? What did you hope to see by that

1 that you wouldn't see absent it?

2 WITNESS NOVARRO: Well, I think again we had
3 said earlier that we had made a public commitment not to
4 the NRC but to the public that we were going to look at
5 all of the pipe hangers in the reactor building. So
6 that was part of the reason for doing all of them. That
7 was the reason for doing all of them, I said. And I
8 think that we had earlier hoped that the program was
9 going to be completed while Torrey Pines was still on
10 the job site. That has not been, as you know.

11 JUDGE CARPENTER: Thank you.

12 BY MR. ELLIS: (Resuming)

13 Q Mr. Novarro, I think you testified that in
14 addition to the findings and the corrective action
15 programs that you looked at, LILCO also looked at all of
16 the valid DRs. Am I correct in that?

17 A (WITNESS NOVARRO) Yes, we did.

18 Q In looking at the large-bore pipe support DRs
19 relating to location, did you find that these were all
20 controlled?

21 A (WITNESS NOVARRO) Yes, we did.

22 I just remembered the name of the supplier of
23 hangers. It was Bergen-Patterson. That is something
24 Mr. Ellis said made me remember that.

25 Q Mr. Johnson, given the pipe hanger process

1 that you observed at Shoreham during the Torrey Pines
2 inspection, what is the Torrey Pines evaluation of the
3 Shoreham pipe hanger process in light of the DRs that
4 were identified and carried forward as valid?

5 A (WITNESS JOHNSON) I think we stated that
6 indirectly in the report. It was our conclusion that
7 the activity was basically under control of the
8 construction control program. As I mentioned when we
9 were discussing DRs, the ones that had no safety
10 significance, we did not pursue. And as Mr. Novarro
11 just indicated, LILCO didn't pursue them and didn't
12 identify design change documents that would resolve
13 those.

14 The items that we could not establish were
15 under control were taken through the potential finding
16 process. And I think you can observe from the report
17 that a number of those were resolved when LILCO was
18 given an opportunity to resolve them. And the ones that
19 were not resolved ended up as either findings or
20 observations.

21 Again, our conclusion with respect to the pipe
22 support area is that it was in process, it was in a
23 state of flux, and it was under control of the
24 construction control program.

25 Q Is that conclusion applicable also to the

1 secondary supports and also the instrument line hangers
2 and conduit supports?

3 A (WITNESS JOHNSON) Yes, they are all part of
4 the piping construction activity. With respect to the
5 instrument supports, it is my understanding that there
6 is a procedure that allows adding instrument supports to
7 larger hangers with given constraints on that as far as
8 the weight effect that is allowed. And we were not
9 aware of that procedure at the time. If we had been,
10 some of those DRs would not have been written, either.

11 Q Mr. Novarro, on transcript 18,431, line 19,
12 you indicated that an inspector who found a pipe support
13 was not in the proper location would "probably generate
14 an N&B." What did you mean by that?

15 A (WITNESS NOVARRO) I meant that if an
16 inspector was inspecting a hanger and if an attribute he
17 was expecting against was not being met, he in fact
18 would write an N&D. An N&D is nonconformance and
19 disposition report.

20 (Counsel for LILCO conferred.)

21 Q Mr. Johnson, did Torrey Pines find that LILCO
22 had a program to -- strike that.

23 Mr. Novarro, just to clarify the record, in
24 response to questions, you indicated that LILCO would
25 put a specific requirement for the removal of temporary

1 supports as a result of the Torrey Pines inspection.
2 Did LILCO have a requirement or a program that would
3 result in that prior to Torrey Pines?

4 A (WITNESS NOVARRO) Yes. In fact, Torrey Pines
5 saw evidence of that too, and that program is that as
6 the piping systems are processed through their final
7 walkdown and inspection, any temporary supports would be
8 identified and a document would be prepared, either an
9 IOC or a memorandum that would require that the
10 temporary support be removed as a result of the final
11 inspection.

12 However, we thought it would be valuable in
13 response to the Torrey Pines finding to prepare a
14 specific program requirement that documented the fact
15 that all of the temporary hangers were removed as a
16 result of the final inspection.

17 Q Mr. Novarro, in several instances in your
18 testimony concerning some of the findings, you referred
19 to missed inspections. Would you tell me whether in
20 using the term "missed inspections" you were talking
21 about an inspection not being conducted or something
22 else?

23 A (WITNESS NOVARRO) When I used the word
24 "missed inspection," I did not intend that it would mean
25 that an inspection was not performed. I intended it to

1 mean that in the performance of an inspection, in the
2 cases that we were talking about, it appeared as though
3 the inspector missed the certain attribute that he was
4 inspecting for.

5 Q Mr. Johnson, on transcript pages 18,665 and 66
6 Mr. Miller asked you whether Torrey Pines had taken into
7 account what Mr. Miller called "missed inspection
8 opportunities." I think there was also a reference to
9 gates having been missed. And you testified that they
10 had been taken into account. Would you explain, please,
11 how Torrey Pines was able to reach the favorable
12 conclusions it reached, even assuming these
13 opportunities for inspections or gates had been missed?

14 A (WITNESS JOHNSON) Again, I relate to the
15 purpose of the QA/QC program to constrain the
16 significance of errors that are made. And the fact that
17 gates were missed, to use the gating terminology, does
18 not constitute a failure of the program, it constitutes
19 a failure of an individual to do what is required by the
20 program. And the significance of those failures has to
21 be considered in the light of Appendix B and in light of
22 the effectiveness of the program. And based upon those
23 considerations, we judged that the program was effective.

24 (Counsel for LILCO conferred.)

25 MR. ELLIS: Judge Brenner, indulge me for a

1 moment. I think I may make good with some time my
2 prediction that I would finish before the end of the day.

3 JUDGE BRENNER: Do you want to take about 5
4 minutes?

5 MR. ELLIS: That would be fine, sir.

6 JUDGE BRENNER: Let's take 5 minutes.

7 (Whereupon, a brief recess was taken.)
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1 JUDGE BRENNER: All right, Mr. Ellis.

2 MR. ELLIS: It was a fruitful break, Judge
3 Brenner. We have no further questions. But we did have
4 a comment concerning our transcript corrections.

5 MR. EARLEY: Judge, if I may explain, the
6 transcript correction list has a number of comments that
7 the transcript is garbled. We are still trying to
8 interpret exactly what was said. And we are going to
9 have the witnesses go through the transcripts again this
10 evening to see if we can't figure out what should have
11 been transcribed. And we will have a final list
12 tomorrow.

13 JUDGE BRENNER: Yes, I know the problem. When
14 I looked at selected parts immediately after, I
15 remembered the gist of it, although not the exact
16 words. And by this week I am not even convinced I have
17 the gist of it. So we appreciate the further work on it.

18 We can have new transcript pages issued in
19 addition to this list, if we think that is a preferred
20 process. It was my own preliminary thought that while
21 that sounds nice, it has the potential to lead to even
22 more confusion, given the number of copies that are
23 around and so on. But we would welcome the parties'
24 advice on that.

25 And we can do it, but it was my preliminary

1 view that doing it in this fashion -- that is, by
2 transcript corrections without issuing new pages and
3 then having to worry about whether you have the change
4 in your own copy or not -- might lead to greater
5 problems. That potential is there.

6 If the parties think it is preferable, we
7 would be willing to hear about it. Unless we hear from
8 the parties, though, we won't do that. We can regard
9 this as a preliminary list, which we appreciate getting,
10 and not bind it in, with the thought that when you track
11 down the others, you would have an updated list. Or if
12 you prefer, we could bind this list in now.

13 MR. EARLEY: Judge, it was our intention that
14 this was a preliminary list, and when we give you a
15 final list, we will ask to have that bound in.

16 JUDGE BRENNER: Okay. If any other parties
17 have a recollection of the garbled portions, feel free
18 to assist LILCO, and it will obviously assist all of us
19 in the end. That "feel free" was a word of art, meaning
20 your recollection of what was said and not your
21 revision, your revisionist version.

22 (Laughter.)

23 JUDGE BRENNER: So you have completed your
24 redirect, Mr. Ellis, is that right?

25 MR. ELLIS: Yes, sir.

1 JUDGE BRENNER: Well, we can go ahead with the
2 Board questions. How much does the County have on
3 follow-up to the redirect?

4 (Counsel for Suffolk County conferred.)

5 JUDGE BRENNER: We won't finish the Board
6 questions today even if we started right now, I can tell
7 you that.

8 MR. DYNNER: I don't think we will have that
9 much, but we really have, not knowing that Mr. Ellis was
10 going to stop now, we really haven't had a chance to
11 focus on what we were going to do in the follow-up
12 questions.

13 JUDGE BRENNER: All right, we will give you a
14 reprieve and start with Board questions. But we expect,
15 given what you have just said, to promptly wrap up your
16 follow-up in the morning.

17 Judge Morris will start.

18 BOARD EXAMINATION

19 BY JUDGE MORRIS:

20 Q I am like the other parties, I didn't know
21 exactly how this proceeding was going to go or terminate
22 or when. So I have made some notes as we have gone
23 along, and I will try to ask some questions based upon
24 those. But maybe overnight I will think of some more.

25 Mr. Novarro, in your testimony, you have

1 described the gating effect that is produced by various
2 levels of inspection and what not. Is this a formal
3 program at LILCO?

4 A (WITNESS NOVARRO) No, I don't believe so,
5 Judge Morris. I think it was an attempt in our earlier
6 prefiled testimony to describe the overall process that
7 is used.

8 Q So it is more a description of the overall
9 process rather than some formalized defense-in-depth
10 mechanism?

11 A (WITNESS NOVARRO) I think the term "gating"
12 is more of a descriptive term. When you say
13 "defense-in-depth," the plant design basis is something
14 that is in accordance with the defense-in-depth, but
15 that is another issue entirely, I think.

16 Q Well, the concept is sometimes used different
17 ways, and I was trying to understand what you were
18 really implying by the use of the "gating effect" phrase.

19 Mr. Johnson, you talked several times about
20 the marketing contacts with General Atomic, or maybe it
21 was Torrey Pines Technology, with LILCO. And I don't
22 think we were told a content of the marketing
23 discussions. Do you have any knowledge of that?

24 A (WITNESS JOHNSON) I have a general knowledge,
25 Judge Morris. As I indicated, the first visit in June,

1 Mr. Lowe, who is the Torrey Pines regional marketing
2 man, came to see me. The discussion centered about what
3 we were doing and how we were doing it. And he was
4 introduced to Mr. Novarro. Mr. Lowe questioned
5 opportunities. Mr. Novarro indicated that there were
6 none as long as this activity is going on. And that was
7 the extent of the contact there with respect to
8 marketing.

9 Subsequent to that, we made it very clear to
10 Mr. Lowe that he was not in the marketing business with
11 LILCO until this was all over with, which apparently
12 wasn't quite clear enough to him. The discussion with
13 Mr. Chao in early November was on the subject of general
14 engineering services. And as I indicated, nothing has
15 come out of that discussion.

16 There were no specific items discussed in
17 terms of doing this or doing that. It was more a
18 general discussion, here is our capabilities and can we
19 be of service, kind of thing.

20 Q So there were no specific proposals made?

21 A (WITNESS JOHNSON) No, there were not, sir,
22 either verbal or written.

23 Q And no specific activities proposed?

24 A (WITNESS JOHNSON) No, sir, none at all.

25 Q Mr. Novarro, you referred to the piping

1 analyses. These are dynamic analyses?

2 A (WITNESS NOVARRO) Yes, Judge Morris.

3 Q Do you know whether the piping supports are
4 taken into account in these analyses?

5 A (WITNESS NOVARRO) Yes, they are.

6 Q And the piping supports themselves are
7 attached to something or other, perhaps a floor or a
8 wall? Is that interaction taken into account?

9 A (WITNESS NOVARRO) Yes. The pipe supports are
10 taken into account in the stress analyses, and what the
11 supports are attached to is also part of that analysis.
12 That reflects upon the piping system.

13 Q And these analyses take into account seismic
14 loads?

15 A (WITNESS NOVARRO) Yes, they do.

16 Q Including the support for the pipe supports?

17 A (WITNESS NOVARRO) Yes, they do.

18 Q In the process that you described, which was
19 an iterative one, were the methods or criteria by which
20 the stress analyses made constant or did they undergo a
21 change?

22 A (WITNESS NOVARRO) I know that we have done
23 the stress analyses more than several times. I think
24 there was testimony in this hearing that one of the
25 reasons for the earlier reanalysis work was for the

1 MARK-II loads. So that would be an indication of the
2 criteria changing, that I know of.

3 Q Do you know of any others?

4 A (WITNESS NOVARTO) Yes. I think the way we
5 considered seismic loads was changed over the years
6 too. My recollection is that the -- as more
7 sophisticated methods were determined for accounting for
8 seismic loads, that that was all fed back into the
9 analysis.

10 Q Were these more sophisticated, or was it just
11 a difference in the way in which loads were combined?
12 Do you know?

13 A (WITNESS NOVARTO) I think it was the latter,
14 Judge Morris, the combination of loads, and I think the
15 dimensional aspects too.

16 Q Mr. Johnson, I won't put words in your mouth
17 and say that you claim to be an expert on Appendix B.

18 A (WITNESS JOHNSON) Thank you.

19 (Laughter.)

20 Q But you did indicate you were familiar with it
21 and read it in certain ways. And I would like to
22 examine that a little bit, if you would refresh your
23 memory and look at Criterion 2, please.

24 (Pause.)

25 Q I guess it is about a third of the way

1 through. There is a sentence that begins, "The quality
2 assurance program shall provide a control over
3 activities affecting the quality of the identified
4 structures, systems, and components, to an extent
5 consistent with their importance to safety."

6 Is it your understanding that all of the
7 criteria of Appendix B should be subject to that
8 conditional phrase, "to an extent consistent with their
9 importance to safety"?

10 A (WITNESS JOHNSON) Yes, I believe so, Judge
11 Morris. All of the criterion in Appendix B start with
12 references to a program or measures or activities, these
13 kinds of things that relate to the definition of a
14 control over the activities. And that in my mind is the
15 QA/QC program for a given operation. And so, yes, I
16 would see the various criteria falling under the quality
17 assurance program in the program as intended to satisfy
18 all of the criteria. And in that context, I would see
19 it as being related to the significance with respect to
20 safety.

21 Q Well, is it your opinion then that for those
22 items which are agreed upon as safety-related, that
23 there might be a difference in the way the Appendix B
24 criteria are applied?

25 A (WITNESS JOHNSON) I would think that would be

1 a reasonable thing to do, yes.

2 Q Is it in fact done, in your experience?

3 A (WITNESS JOHNSON) I think my experience is
4 that the requirements of the program tend to be set up
5 for the most stringent concern and that those
6 requirements tend to be applied in less stringent areas
7 or less significant areas even though they may not be
8 consistent with the importance of the other areas. So,
9 yes, I think that is done. In some cases I think it is
10 probably overdone for simplicity rather than having a
11 large gradation of different kinds of requirements for
12 different kinds of components and hardware.

13 Q But is the opposite also true, that there
14 would be some safety-related items to which the rigor of
15 a given criterion would not be as much as it might be
16 for a different component or system?

17 A (WITNESS JOHNSON) I don't think that is true
18 in terms of program requirements. I think when one is
19 evaluating the significance of an error that is made
20 with respect to those program requirements, at that
21 point one has to consider the significance of the
22 specific items under discussion and the effect of the
23 error upon the quality of that item with respect to the
24 safety of the plant.

25 But I don't think that is done at the program

1 level, certainly not in LILCO's case. There is a set of
2 requirements for safety-related hardware as far as the
3 program is concerned.

4 Q If you will turn your attention to Criterion
5 10, please. The second sentence begins, "Examinations,
6 measurements, or tests of material or products processed
7 shall be performed for each work operation where
8 necessary to assure quality." That is the whole
9 sentence. Is it your opinion that every safety-related
10 structure, system, and component should be inspected?

11 A (WITNESS JOHNSON) Inspected is a broad term.
12 Yes, I believe every single safety-related structure,
13 system, and component should be subject to inspections
14 that are appropriate for the -- what should I call it --
15 the life cycle of that item. In some cases you wouldn't
16 do some inspections, in other cases it is appropriate to
17 do those.

18 Generally, yes, I would say that all
19 safety-related components should be subject to
20 inspections to insure quality.

21 Q Well, if there are ten items which are
22 identical, made by the same manufacturer, subject to the
23 same environment, the same service duty, the same
24 anything else you can think of, would you inspect all
25 ten, or would you inspect some sample?

1 A (WITNESS JOHNSON) That is a loaded question.
2 I would inspect a sample in that case where you had a
3 homogeneous lot, where you were inspecting for the same
4 attributes and where you had a consistent set of things
5 to work with, and you would establish an acceptance
6 level for that specific lot and use statistical methods
7 to avoid 100 percent inspection.

8 Q And you think that would comply with the
9 Criterion 10?

10 A (WITNESS JOHNSON) Yes, I do.

11 Q Mr. Novarro, have you had an opportunity to
12 review the Inspection Enforcement reports since the
13 beginning of the project and specifically with respect
14 to citations against Appendix B?

15 A (WITNESS NOVARRO) Yes, Judge Morris. Over
16 the years I have reviewed I&E reports. I guess that is
17 what we are talking about here, Inspection and
18 Enforcement reports. And they generally relate to a
19 citation, as you mentioned, with some reference to the
20 FSAR or Appendix B.

21 Q And can you give me a feeling for about how
22 many citations against Appendix B there have been over
23 time?

24 A (WITNESS NOVARRO) There are many reports that
25 I know of. As you know, the site inspector that is in

1 residence produces a monthly report, and I think you
2 have seen evidence of those here. I can recall various
3 levels of citation. But I know for a fact that we have
4 never been fined or we have never had a stop-work order
5 issued against us. So from the severest levels of
6 infraction, we have never suffered that type of problem.

7 The other levels deal with lesser degrees of a
8 problem, and I have seen over the years many reports but
9 I can't give you a count.

10 Q I was focusing on citations in the sense of
11 getting a letter from Region I rather than comments
12 which might have been made less formally even though in
13 writing by the resident inspector.

14 A (WITNESS NOVARRO) Again, I don't really have
15 a number that I could give you.

16 Q Well, has this risen to be a concern on the
17 part of QA management or LILCO management that
18 corrective action might have been needed?

19 A (WITNESS NOVARRO) No. I can recall two
20 programmatic reviews that were done by the I&E groups
21 that fall under the category of SALP -- the Systematic
22 Analysis of Licensee Performance I think is the
23 designation -- where the NRC reviewed the program as it
24 was being applied by them and in which we had an
25 opportunity to comment. And of course, there was an

1 exit interview involved too.

2 My recollection is that in those cases we
3 fared average or above when the Commission, the
4 Commission inspection review was related to their
5 requirements and to others.

6 Q When Mr. Gerecke was testifying, he told us
7 some months ago now that the, I believe, the Nuclear
8 Review Board was scheduled to review the QA program. Do
9 you know if that has taken place?

10 A (WITNESS NOVARRIO) I recall seeing it on the
11 agenda, but I don't know whether it was completed or
12 not, Judge Morris. I am not a member of the Nuclear
13 Review Board. I do know that in the last agenda that I
14 saw, there was an item to that degree. It related, as I
15 recall, to an overall review by the Nuclear Review Board
16 of the plant's readiness to load fuel. And I think in
17 that process they would look at the QA program and a lot
18 of other things that would be reviewed for compliance at
19 this stage for the project before fuel is loaded.

20 Q Mr. Johnson, I believe you said that you have
21 reviewed LILCO and Stone and Webster procedures and
22 annual revisions, and you have made a selection of
23 approximately 20, if I remember correctly. Do you
24 remember the total population from which the 20 were
25 selected?

1 A (WITNESS JOHNSON) The total population, I
2 think, as Mr. Dynner established, is somewhat on the
3 order of five to six hundred at this point. The
4 population at the point in time that we selected those
5 20, I don't really have information on, not specifically.

6 Q But perhaps in that ballpark?

7 A (WITNESS JOHNSON) Perhaps in that ballpark.
8 As Mr. Novarro indicated earlier, in the program it
9 would have been less as the program built as the
10 construction activity increased.

11 Q And maybe you have told us before, but I don't
12 remember what the basis was for your selection.

13 A (WITNESS JOHNSON) The basis for the selection
14 was to select representative requirements out of the
15 construction control program that would have been a peak
16 activity item in a given time frame.

17 Examples I can think of are the design and
18 control elements back in the '69 and '70 time frame,
19 which was a time frame in which most of the design
20 activity was occurring, the original design activity.
21 Another one that I know that was looked at related to
22 concrete and the pouring of concrete and rebar and those
23 kinds of things.

24 And so what we tried to do was to select a
25 program element that was most active at a given point in

1 time through the construction time frame and to look at
2 that revision and confirm that it did in fact meet the
3 requirements.

4 Q Torrey Pines inspection involved quite a
5 number of people whom you claim were experienced in the
6 nuclear area, and the program was well defined for what
7 they did and the various tasks. Did they make any
8 effort outside of those to find tasks to identify any
9 safety concerns?

10 A (WITNESS JOHNSON) They were chartered in
11 terms of the potential finding report procedure, which
12 they were all trained in. And in that training they
13 were specifically told that if they saw anything that
14 they considered to be a safety concern, they would --
15 either programmatic or hardware or whatever -- they
16 would document that on a PFR.

17 In that context, they were all very aware that
18 anything that they saw that they felt was inappropriate
19 was to be documented. They were not encouraged to do
20 things outside the scope of the work that they were
21 supposed to be doing. So in that context, I can't say
22 that they were encouraged to look elsewhere. But they
23 were all very clearly chartered to document anything
24 that they saw that they felt was not right.

25 Q Were there any such documentations?

1 A (WITNESS JOHNSON) Not to my knowledge in the
2 potential finding report area, with the exception in
3 real time the debris in the heating ventilating duct was
4 written up as a PFR because the gentleman involved felt
5 that it was a concern even though he couldn't find the
6 specific requirement that said it shouldn't be there.

7 So in a real-time context, it did occur.
8 There were some discrepancy reports like, for example,
9 the torquing on the drywell head, which were not part of
10 the activity that was going on, it was in addition to
11 the activity that was going on. The gentleman thought
12 he saw something that didn't look right, and he
13 documented it.

14 With respect to the heating ventilating debris
15 question, we did find after the PFR had started the
16 process, that there was in fact a requirement that it be
17 cleaned, which was not surprising. But at the time it
18 was written, that specific requirement document had not
19 yet been identified.

20 Q Now, Mr. Novarro, early in your testimony you
21 emphasized LILCO's reason for having the Torrey Pines
22 inspection done. And the emphasis seemed to be that it
23 was either strongly or perhaps solely the result of the
24 commitment that LILCO had made during the course of
25 negotiations with the County. Am I correct in that

1 recollection?

2 A (WITNESS NOVARRO) Yes, sir.

3 Q Was it, in fact, the sole reason?

4 A (WITNESS NOVARRO) It was the sole reason. I
5 indicated in my testimony that we didn't think the
6 additional inspection was required.

7 Q And is it correct to infer from that that the
8 management doesn't take any comfort from the results?

9 A (WITNESS NOVARRO) Well, let me explain. We
10 certainly are pleased that the inspection showed the
11 very few findings that it did. And in our review of the
12 findings and in our generation of the corrective action
13 plans, we have assured ourselves that the findings were
14 not of a significant safety nature and that the safety
15 of the plant was really not challenged by them.

16 So we haven't ignored the report. We
17 certainly have reviewed it. In the process of reviewing
18 the findings, we have again assured ourselves of what we
19 knew was going on right along, that the plant was being
20 built in accordance with the requirements. We have
21 spent a lot of effort on my part and the part of the
22 site people who participated in providing information to
23 Torrey Pines.

24 We spent a great deal of money carrying out
25 the program so that in the end we are satisfied that the

1 program was done in accordance with a program plan and
2 that the results were confirming of our own beliefs
3 before the program took place that the plant was being
4 built in accordance with satisfactory construction
5 practices.

6 (The Board conferred.)

7 JUDGE MORRIS: Thank you, gentlemen.

8 JUDGE BRENNER: Let me try a few miscellaneous
9 ones as long as we have the time. And as Judge Morris
10 said, he may be back with others tomorrow.

11 BY JUDGE BRENNER:

12 Q Mr. Johnson, in talking about some of the DRs
13 involving missing secondary supports -- and you don't
14 have to look at the specific ones, I don't believe, but
15 for the record I think they came out of that, according
16 to my notes, the County group 4-F. From their
17 memorandum, examples would be DRs 193, 244, and 312.

18 In any event, the group I am talking about are
19 the ones where a DR was written because the secondary
20 support was missing. However, as I recall, PFRs were
21 not generated because in Torrey Pines' judgment the
22 missing secondary support would not have a potential
23 safety impact. Am I accurately recalling your testimony?

24 A (WITNESS JOHNSON) Yes, you are, Judge Brenner.

25 Q Can you give me a little insight as to how you

1 applied, how Torrey Pines applied its judgment in
2 determining that that would not have a potential safety
3 impact?

4 A (WITNESS JOHNSON) The secondary pipe supports
5 attached to the primary line, which is usually a 4- to
6 28-inch diameter line and support for basically seismic
7 purposes the vent or drain line that is usually a
8 3/4-inch to 1-inch size line, the structural integrity
9 of the primary line will not be affected by the absence
10 of a secondary pipe support or by the failure of a
11 secondary pipe support. There is just not enough
12 structural effect of the secondary support to affect the
13 integrity of the primary line.

14 In that context, we said that the secondary
15 supports locationwise in most cases did not have a
16 safety impact, and the existence question doesn't have a
17 direct safety impact in that it does not affect the
18 primary piping integrity.

19 Q Did you complete your answer?

20 A (WITNESS JOHNSON) Yes, sir.

21 Q Do you know if those secondary supports are
22 considered or classified as safety-related by LILCO?

23 A (WITNESS JOHNSON) Yes, I believe they are.

24 Q Either one of you can answer this. Why are
25 they classified safety-related if they have no impact on

1 the integrity of the primary pipes?

2 A (WITNESS JOHNSON) I think we are discussing
3 levels of significance here. The secondary support
4 certainly does have an impact on the integrity of the
5 vent line or drain line that it is supporting. And in
6 that context, there could be an effect on the drain
7 line. And in the pure sense that Judge Morris was
8 explaining earlier or questioning earlier, the full-up
9 requirements for the primary pipe integrity, which is
10 more significant than the vent or drain line, have been
11 applied to all safety-related equipment.

12 So I think they are safety-related because
13 they do affect the integrity of the vent line or drain
14 line if they don't exist. In the context of the primary
15 system they don't affect the integrity.

16 Q Well, would their failure have a potential
17 safety impact; that is, the failure of the secondary
18 supports? I am trying to get some insight into your
19 definition of your own criterion of potential safety
20 impact.

21 A (WITNESS JOHNSON) If the support was not
22 there and if you had a seismic event, in our opinion the
23 worst thing that could happen is that the vent or drain
24 line would come off. The safety system has been
25 designed to accept small leaks, and the size of the

1 vent, drain, and instrument lines is small enough that
2 it falls into the category of a small leak in the
3 system, which would not affect the primary function of
4 the system. It would not be a good thing, I agree, but
5 the safety function of the plant system by design would
6 not be significantly affected.

7 Q Now, because the DRs, the valid DRs on missing
8 secondary supports in Torrey Pines' application of its
9 criterion did not have a potential safety impact, those
10 valid DRs did not become PFRs. Is that accurate?

11 A (WITNESS JOHNSON) That is correct. And also,
12 they were not -- LILCO was not provided an opportunity
13 to show whether those areas were under control as far as
14 the construction control process was concerned, which
15 may have allowed invalidation of those DRs.

16 Q And that is part of the point I am getting
17 to. Wouldn't it have served Torrey Pines' purpose in
18 assessing the LILCO construction control program to take
19 the missing secondary support DRs further through the
20 process in order to see whether LILCO in fact had them
21 under control?

22 A (WITNESS JOHNSON) To be fully complete, yes,
23 it would have, Judge. Again, we were keying onto the
24 safety significance of what we found and trying to
25 evaluate that in the context of the effectiveness of the

1 program and providing sound safety-related hardware that
2 would function in the plant.

3 I think LILCO has taken those DRs and
4 established whether they were under control or not, but
5 that was after the fact and not during the study.

6 Q Is that right, Mr. Novarro? You answered that
7 generally before.

8 A (WITNESS NOVARRO) Yes, Judge Brenner. I
9 believe you asked earlier how we go about installing
10 secondary supports, and I explained that we have a
11 general procedure described in an E&DCR that gives the
12 typical type of clamps and angle irons that are used to
13 make up the supports. And in the instances where the
14 general criteria are not applicable, there are specific
15 E&DCRs that are issued to produce a specific design.
16 And we did go back and on our own look at these DRs
17 which were left valid but no PFR was written. And then
18 we have determined that in fact this process was under
19 way.

20 Q Let me ask one totally miscellaneous question
21 that is not totally connected to anything as a last one,
22 but just for the sake of a complete record. I don't
23 have a transcript reference. But on the morning of
24 January 17 you gentlemen were asked about whether sneak
25 circuit testing was included as part of Task C or any

1 other task. Can you just very briefly tell me what
2 sneak circuit testing is?

3 A (WITNESS JOHNSON) I can tell you my
4 understanding of sneak circuit testing, which is not in
5 the context of the nuclear industry but rather in the
6 context of the aerospace industry. I think the meanings
7 are similar, and that is how I responded to the question.

8 Q You can let Mr. Novarro take a shot first, if
9 you want to. Oh, he doesn't want to. Go ahead, Mr.
10 Johnson.

11 A (WITNESS JOHNSON) Sneak circuit testing
12 relates to logic elements in a control system where
13 there are many functions available in many, many, many
14 elements of a system in a microprocessor and things like
15 this. The sneak circuit testing that I am familiar with
16 models that circuit completely, uses a random generator
17 to put different excitations on that circuit that may or
18 may not relate to the intended function of that circuit,
19 to determine whether there are any paths within the
20 circuit that could be triggered by a random set of
21 events that would produce a result that was not the
22 desired result.

23 And that is a very extensive analysis in my
24 understanding. And it is used in the aerospace industry
25 to avoid problems that have cropped up where a system

1 circuitry was subjected to conditions that were
2 unexpected and the result of those conditions was an
3 undesirable response on the part of the circuit.

4 So with that definition, no, we did not do
5 sneak circuit analysis on the control circuitry at
6 Shoreham.

7 (The Board conferred.)

8 JUDGE BRENNER: Since Judge Morris tells me I
9 don't really need to know anything more about it, I will
10 accept his view, in deference to his expertise and the
11 hour.

12 We are ready to adjourn. Did you have
13 something, Mr. Dynner?

14 WITNESS JOHNSON: Excuse me, Judge Brenner.
15 Could I just add that I would also observe with respect
16 to the functional adequacy of the control circuits in a
17 nuclear plant, that those circuits are checked out in
18 the preoperational testing and in the start-up program
19 to perform the functions that are intended and to check
20 out all functions that are part of the design
21 requirement. So I didn't mean to imply by the fact that
22 we hadn't done a sneak circuit analysis of the plant
23 that what was necessary was not being done.

24 JUDGE BRENNER: We heard a little bit about
25 that from Mr. Youngling.

1 Mr. Dynner.

2 MR. DYNNER: We have, Judge Brenner, the
3 County's opposition to the LILCO motion for partial
4 summary disposition of the environmental qualification
5 contention as well as copies of the cross plan for the
6 Board, which are being distributed now.

7 JUDGE BRENNER: Very good. Thank you.

8 MR. EARLEY: Judge, if I may note for the
9 record, at the last break LILCO distributed to the Board
10 its cross-examination plan for the environmental
11 qualification.

12 JUDGE BRENNER: Yes. Thank you. We have
13 looked at it already.

14 I guess we had better take some time estimates
15 at some time early tomorrow to see what the situation is
16 going to be for the rest of the week and scheduling
17 beyond that on the next issue scheduled for litigation.
18 We are going to be prepared to hear arguments on the
19 summary disposition motion, but we should try to
20 complete this witness panel first, I would think, out of
21 courtesy to them, and then take up the argument after
22 that.

23 All right, we will be back at 10:00 tomorrow
24 morning.

25 (Whereupon, at 5:05 p.m., the hearing in the

1 above-entitled matter was adjourned, to reconvene at
2 10:00 a.m. on Tuesday, January 25, 1983.)

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NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the
ATOMIC SAFETY AND LICENSING BOARD

in the matter of: LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station)

- Date of Proceeding: January 24, 1983

Docket Number: 50-322-OL

Place of Proceeding: Hauppauge, New York

were held as herein appears, and that this is the original transcript
thereof for the file of the Commission.

Ray Heer

Official Reporter (Typed)

Ray Heer

Official Reporter (Signature)