

ORIGINAL

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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 Bethesda, Maryland

DATE December 8, 1982

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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: In the Matter of: :
: LONG ISLAND LIGHTING COMPANY : Docket No. 50-322-OL
: (Shoreham Nuclear Power Station) : :
: -----x

Bethesda, Maryland
Wednesday, December 8, 1982

The hearing in the above-entitled matter
convened, pursuant to recess, at 9:00 a.m.

BEFORE:

LAWRENCE BRENNER, Chairman
Administrative Judge

JAMES CARPENTER, Member
Administrative Judge

PETER A. MORRIS, Member
Administrative Judge

1 APPEARANCES:

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1 Mr. Hubbard, when we recessed yesterday we
2 were focusing on page 21, and in particular which
3 involved discrepancies between flow diagrams and
4 existing piping and hardware. And we had discussed the
5 omission of the word "minor," and we were focusing on
6 (d), which is a reference location on a drawing for a
7 drain.

8 To expedite matters, Mr. Hubbard, would it be
9 fair to say that you have conducted no engineering or
10 technical assessment or reviewed any of the flow
11 diagrams that are listed on page 21?

12 A (WITNESS HUBBARD) That is correct. And those
13 diagrams are not available.

14 Q Now, yesterday in response to questions by
15 Judge Carpenter, you said that you would not want
16 auditors to make judgments concerning whether findings
17 were major or minor. It would be fair to say, though,
18 that the significance of a finding would be important
19 for a QA Manager to know in order to make decisions
20 concerning the effectiveness of the program, wouldn't it?

21 A (WITNESS HUBBARD) Mr. Ellis, I did not say an
22 auditor shouldn't be making decisions. I said an
23 inspector shouldn't be making decisions. Or if I did
24 say "auditor," I misspoke. I believe, though, I used
25 the word "inspector."

1 Q All right, sir.

2 A (WITNESS HUBBARD) The QA Manager should be
3 making decisions on significance; likewise, quality
4 engineers can make decisions on significance in advance
5 of doing inspections by doing a thing like
6 classification and characteristics that I discussed with
7 Judge Carpenter, by structuring the program to give
8 additional inspection or additional verifications in the
9 areas that are deemed to be most important.

10 Q Well, my question, though, is, it's fair to
11 say that as a QA Manager you would certainly want to
12 know the significance of a finding in the scheme of
13 things in order to determine what it meant with respect
14 to the effectiveness of the program and to make QA
15 management decisions. Isn't that right?

16 A (WITNESS HUBBARD) Yes.

17 Q And in that connection you would want to know,
18 wouldn't you, such matters as the purposes flow diagrams
19 are used for and what particular discrepancies meant in
20 terms of whether or not the plant was being constructed
21 in accordance with the construction drawings and
22 documents?

23 A (WITNESS HUBBARD) Is that the question, Mr.
24 Ellis?

25 Q Yes, sir.

1 A (WITNESS HUBBARD) Yes, those would be some of
2 the things that a QA Manager would be interested in.

3 Q Well, you are aware, aren't you, Mr. Hubbard,
4 that the actual plant construction is not inspected
5 against flow diagrams but against construction drawings;
6 isn't that right?

7 A (WITNESS HUBBARD) I don't know that to be a
8 fact.

9 Q In light of your testimony that you do not
10 have any experience in the actual site construction of a
11 nuclear power plant, would it also be fair to say that
12 you are not familiar with the manner in which flow
13 diagrams are used at the construction site and the
14 practice with which the practice followed for updating
15 them?

16 MR. LANPHER: I object to the characterization
17 of his earlier testimony.

18 JUDGE BRENNER: It is not as simple as that,
19 Mr. Ellis. Why don't you just ask the question without
20 the characterization?

21 Or, Mr. Hubbard, if you know the question, why
22 don't you answer it disregarding the characterization?

23 MR. ELLIS: Judge Brenner, the reason I put
24 "site" in there -- but I understand that --

25 JUDGE BRENNER: I am not reaching a decision

1 as to whether you are correct or incorrect. My sole
2 comment was it is not as simple as that, and since it is
3 not necessary to get the answer, you can just move right
4 into it.

5 MR. ELLIS: I agree, Judge Brenner.

6 JUDGE BRENNER: You can each still argue in
7 your findings what the situation is as to that
8 characterization.

9 Can you answer the question, or do you need it
10 repeated? Do you know what the flow diagrams are used
11 for in constructing the plant is the gist of the
12 question.

13 WITNESS HUBBARD: I do not know exactly how
14 the flow diagrams have been used in the inspection
15 process. However, if there are drawings that are used
16 from construction that are take-offs from the flow
17 diagrams, because there is always a hierarchy of
18 drawings in any scheme, the point is that the hierarchy
19 of drawings should be in agreement.

20 And in this case, the IE inspector found that
21 the as-builts were different than the information on the
22 flow diagrams. So there was a breakdown in the control
23 in the hierarchy of drawings.

24 (Counsel for LILCO conferred.)

25 BY MR. ELLIS: (Resuming)

1 Q First of all, Mr. Hubbard, you said there was
2 a difference between flow diagrams and -- what was your
3 answer? I am sorry. The CAT inspector found a
4 difference between the flow diagrams and the
5 construction drawings; is that what you said?

6 A (WITNESS HUBBARD) No, Mr. Ellis. I talked
7 about a hierarchy of drawings like a Christmas tree --
8 that is often what it is called -- and that the
9 inspector looking at the as-built condition of the plant
10 found a difference between that and the information
11 contained on the flow diagrams.

12 Q Well, at least with respect to (d), wouldn't
13 you agree that that is not what he found, but rather all
14 he found was a mistake in where you look on a flow
15 diagram to find a particular drain and not that the
16 drains were not in the flow diagram as they were in the
17 constructed plant?

18 A (WITNESS HUBBARD) That appears to be the
19 case, Mr. Ellis.

20 Q So at least for that one, what you say isn't
21 true?

22 A (WITNESS HUBBARD) That appears to be true
23 from the reading of the words that are in the CAT
24 inspection. I would want to ask the I&E inspector why
25 he identified it as a discrepancy between the as-built

1 and the drawings. That is the category he put it. So
2 maybe there is something that doesn't meet the eye. As
3 a matter of fact, Mr. Ellis, that is actually in the
4 report two different places.

5 Q It is also in your testimony in two different
6 places, isn't it?

7 A (WITNESS HUBBARD) That is possible.

8 Q Well, let's confirm it since we are on it.
9 Look, if you would, please, at pages, page 34, breakdowns
10 34 and 35, and confirm for me, if you would, please,
11 that those are the same as your alleged breakdowns 10
12 and 11 on page 21?

13 A (WITNESS HUBBARD) That is a question I had,
14 Mr. Ellis, that I noticed that those two which are shown
15 on page 4-32, page 4-32 at the bottom, bear the same
16 words as those shown back on the previous page. But in
17 this case, they are instead of being cited to the RHR
18 system, they are cited to the closed-loop cooling water
19 system. And I have a question in my mind of why the
20 person listed it twice.

21 Q Well, did you have that question in your mind
22 when you wrote your testimony?

23 A (WITNESS HUBBARD) No, I didn't when I wrote
24 the testimony; but when I was reviewing it, I looked
25 through and noticed that this bore a lot of resemblance

1 and I was trying to figure out why he had it in twice.

2 Q You have confirmed, haven't you, that the
3 references on 34, the alleged breakdowns 34 and 35, are
4 the same as --

5 A (WITNESS HUBBARD) (c) and (d)

6 Q (c) and (d).

7 A (WITNESS HUBBARD) They surely appear to be,
8 except (c) and (d) are listed against the RHR where (a)
9 and (b) on page 34 of my testimony are against the
10 RBCLCW.

11 (Counsel for LILCO conferred.)

12 Q So your understanding is that everything that
13 is listed on page 21 on your alleged breakdowns (a)
14 through (h) are all of the RHR system?

15 A (WITNESS HUBBARD) I was trying to understand
16 that myself, Mr. Ellis, and where it talks about
17 inspection findings on page 4-16, it talks about these
18 are inspection findings as related to the RHR system
19 piping and appurtenances. And then later on the ones
20 that are listed on page 4-32, there it starts section
21 4.2, the general sections. The subject of that section
22 is the reactor building closed-loop cooling water
23 system. And there is the reference again on page 4-33
24 back to the finding 8204-02 that was listed earlier.

25 Q Well, I understand what the CAT inspector said

1 on page 4-7 -- no, 4-16; namely, that the scope was RHR
2 system piping and appurtenances. But what I am asking
3 you is whether it is your understanding that what you
4 have listed on alleged breakdowns 8 through 15 on page
5 21 are strictly limited to the RHR system.

6 A (WITNESS HUBBARD) I did not analyze that, Mr.
7 Ellis. And to me that wasn't what was really important
8 anyhow. The importance was not of what system but of
9 the disagreement between the as-built plant and the
10 drawings.

11 Q But earlier in your testimony you said that it
12 was just one system that was looked at, and a narrow
13 slice of it. Wouldn't you think it would be important
14 to have in mind what that slice was?

15 MR. LANPHER: I object to the question. That
16 is again a mischaracterization of what he said earlier.

17 JUDGE BRENNER: I will let the witness
18 straighten it out this time because it sounds pretty
19 close to me to what he said earlier. So we will let him
20 straighten it out as a part of his answer, and you can
21 come back on redirect. But I think it is a fair
22 question.

23 WITNESS HUBBARD: I think the CAT inspection
24 is pretty clear. It looked at the RHR system and it
25 looked at some of the systems that support the RHR

1 system. And it also is clear that it was a sample. I
2 mean it didn't look at all of it.

3 BY MR. ELLIS: (Resuming)

4 Q Well, we started down this line of questioning
5 originally, Mr. Hubbard, because of the mention twice of
6 the same or of what you say appear to be the same
7 matters. And you said you thought that one reference
8 you had a question about because one of the references
9 was the RHR system and the other was the RBCLCW system.
10 And then I asked you, you said you had not made any
11 analysis of whether the breakdowns (a) through (h) were
12 all in the RHR system.

13 Are you familiar with the numbering system for
14 the Shoreham flow diagrams to know whether the numbers
15 that are indicated on breakdowns (a) through (h) refer
16 to specific systems?

17 A (WITNESS HUBBARD) I am not, Mr. Ellis. I am
18 familiar with the GE system of E-11s and G-11s and
19 E-41s, up to that level, but not these FM numbers.

20 Q Well, you will agree with me, though, so that
21 we can be clear about whether this listing is restricted
22 to RHR, that at least with respect to (f) on page 21
23 referring to bird screens on crankcase vents, that there
24 aren't any crankcase vents in the RHR system? If you
25 know.

1 (Pause.)

2 A (WITNESS HUBBARD) I think that was with
3 reference to the supporting systems for the RHR that at
4 the table of contents at 4-11 it talks about five
5 different systems that are supporting systems for the
6 RHR, and I think the bird screen, what has to do with
7 the emergency diesel generators.

8 (Counsel for LILCO conferred.)

9 Q Well, Mr. Hubbard, you could have told from
10 looking at pages 4-46 through 4-51 whether a particular
11 listing that he gave for findings or observations, you
12 could have told whether FM-15A-12 was in the RHR system
13 or some other system?

14 A (WITNESS HUBBARD) That appears to be correct.

15 Q And you could have told then by looking at
16 that when this question arose after you had done your
17 prefiled testimony whether (c) and (d) were in the
18 RBCLCW system or in the RHR system; isn't that correct?

19 A (WITNESS HUBBARD) Not necessarily, Mr.
20 Ellis. Sometimes one diagram might have components for
21 two particular systems on it. That might not be the
22 normal practice, but it does happen.

23 (Counsel for LILCO conferred.)

24 Q Well, you say sometimes that could be the
25 case. You don't know that for a fact with respect to

1 Shoreham, though, do you, sir?

2 A (WITNESS HUBBARD) No. I don't.

3 Q Now, would it be a fair summary of your
4 testimony with respect to the (c) and (d) on page 21
5 that after you prepared your prefiled testimony, a
6 question arose in your mind as to whether (a) and (b)
7 and (c) and (d) -- (a) and (b) on page 34 and (c) and
8 (d) on page 21 -- were the same thing, though you
9 recognized at that time that it was the same words, but
10 you still have a question as to whether it is the same
11 or not; is that correct?

12 A (WITNESS HUBBARD) Yes, Mr. Ellis. And I got
13 the CAT inspection about 1 week before I turned in the
14 testimony; that in spite of the fact that it is dated in
15 May, that there was a normal 20-day holdup. So I would
16 like to have had more time to look it over. So that
17 appears to be an error I made.

18 Q Mr. Hubbard, with respect to the alleged
19 breakdowns 8 through 15 on page 21 you state that they
20 are contrary to the requirements of Criteria 10 and 11,
21 11 relating to test control. Criterion 11, do you have
22 that in front of you? First, Mr. Hubbard, you would
23 agree with me, wouldn't you, that the NRC did not find
24 that these were contrary to the requirements of Criteria
25 10 and 11 of Appendix B. Isn't that right?

1 A (WITNESS HUBBARD) That is correct. They were
2 identified as unresolved issues.

3 Q All right. With respect to 11, do you have
4 that now, sir?

5 A (WITNESS HUBBARD) Yes, I do.

6 Q The first sentence of 11 refers to the
7 establishment of a test program to assure that all
8 testing to demonstrate the structures, systems, and
9 components will perform satisfactory service. There is
10 nothing in the NRC's CAT inspection report that
11 indicates that the test program that is referred to
12 there had not been established, is there?

13 A (WITNESS HUBBARD) There is nothing to refer
14 that it either had been established or hadn't been
15 established.

16 Q And the same would be true, would it not, for
17 the remaining sentences of Criterion 11, test control;
18 isn't that correct?

19 A (WITNESS HUBBARD) Yes.

20 Q And isn't it fair to say that you do not know
21 whether tests under Criterion 11 had been performed on
22 the RHR and related systems at the time of the
23 inspection?

24 A (WITNESS HUBBARD) That is correct.

25 (Counsel for LILCO conferred.)

1 Q Mr. Hubbard, isn't it fair to say that a test
2 program under Criterion 11, even though it fully met
3 Criterion 11 and was fully effective, is not a test
4 program that would be designed to detect, for example,
5 whether bird screens were present on a crankcase vent?

A (WITNESS HUBBARD) Not necessarily, Mr.
Ellis. I grouped 10 and 11 together so I wouldn't get
8 into a matter of quibbling on whether a comparison of
9 the as-built plant to the drawings is really more
10 appropriate to Criterion 10 or Criterion 11 activity,
11 the combination of inspection and testing that is done.
12 And one can make some decisions on where one puts the
13 reliance on either inspection or test having to do with
14 timing.

15 But combined 10 and 11 are intended to
16 demonstrate that the plant is built to the drawings.

17 Q But we have already -- well, strike that.

18 You will agree with me, won't you, Mr.
19 Hubbard, that the drawings actually used to construct
20 the plant are the construction drawings, not the flow
21 diagrams; isn't that right?

22 MR. LANPHER: I object. That has been asked
23 already.

24 JUDGE BRENNER: Sustained.

25 MR. ELLIS: Well, Judge Brenner, the reason I

1 did that is because of his answer.

2 JUDGE BRENNER: I know what his previous
3 answer is. He doesn't know. And that is the finding I
4 am going to accept. If we go back over every question,
5 we will be here twice as long. And even though it was
6 10 minutes ago, we can juxtapose. It wasn't so long ago
7 that we don't remember it for foundation either.

8 BY MR. ELLIS: (Resuming)

9 Q Mr. Hubbard, you said you grouped these under
10 10 and 11. Does that mean that 10 applies to some and
11 not to others and that 11 applies to some and not to
12 others?

13 A (WITNESS HUBBARD) Not necessarily, Mr.
14 Ellis. What I meant is that the people, the quality
15 engineer planning the inspection and test program can
16 decide to find things in inspections which would
17 normally precede tests or they could decide to just go
18 -- to not put as much emphasis on that and go to the
19 testing program and find certain things there.

20 So within the planning function one makes a
21 decision of how much emphasis to have on tests and how
22 much on inspections. From just a preliminary look here,
23 I would expect most of the items (a) to (h) to be found
24 during an inspection function more than a test function.

25 Q Well, is it your testimony that the Criterion

1 11 then is applicable to, for example, your alleged
2 breakdown (f) on page 21?

3 A (WITNESS HUBBARD) I would have expected (f)
4 to be found as part of an inspection program. One would
5 verify that the plant was built according to the
6 applicable drawings.

7 Q Andb I take it from your answer that you would
8 not -- you would agree that 11 is not applicable to (f);
9 namely, no test is designed to find out whether you have
10 got screens on a crankcase?

11 A (WITNESS HUBBARD) It is not immediately
12 obvious to me that that would be found in a test.

13 Q So you haven't gone through here rigorously
14 and made a decision as to which, when you cited more
15 than one criteria, whether some of the criteria may be
16 inapplicable to a group even though that criteria is
17 cited with respect to that group?

18 A (WITNESS HUBBARD) Mr. Ellis, Criteria 10 and
19 11, as I said before, talked about inspection and
20 testing. For example, item (1).

21 JUDGE BRENNER: Mr. Hubbard, excuse me. I
22 think you can answer the question a little more
23 directly, I really do. It's not that complicated a
24 question.

25 WITNESS HUBBARD: Let me try.

1 JUDGE BRENNER: He wants to know if you
2 determine that 10 and 11 apply to each and every one of
3 those in the list or whether you just believe that it
4 would be fair to cite them for the group.

5 WITNESS HUBBARD: I was going to say that item
6 (a) looked to me like one that could be found by either
7 the activities performed under 10 or under Criteria 11.

8 JUDGE BRENNER: I don't want you to run down
9 the list. The question is very simple, and we are going
10 to be here too long as a result of these questions and
11 answers. And the reason I cut you off is you were about
12 to give an answer that you had already given, I
13 believe. You were going to explain why you cited 10 and
14 11, and I already have that answer. In fact, I have got
15 it about two or three times in the last 10 minutes.

16 He wants to know if you determined as to each
17 and every one of those. And don't do it now unless he
18 asks you. Just the general question, did you determine
19 as to each of those (a) through (h) that Criteria 10 and
20 11 apply? And he wants to know your reasons. And if he
21 wants to know your reasons behind that, he can explore
22 those.

23 WITNESS HUBBARD: I believe 10 or 11 does
24 apply, and in some cases both apply.

25 JUDGE BRENNER: Okay. Now, let me tell both

1 of you both the questioner and the responder, this has
2 degenerated into too much of a conversation. It is an
3 interrogation at a hearing, and I want a snappy question
4 and I want a snappy answer. You are just too relaxed in
5 terms of conversational artifices both in the question
6 and in the answers. Direct question and direct answer.

7 MR. ELLIS: Judge Brenner, I have a specific
8 reason for having asked this question, which I am going
9 to come to.

10 JUDGE BRENNER: I am not objecting to the
11 question or any individual question. It is the
12 approach: You feel you have to summarize all of where
13 you have been in order to ask the next question. And
14 that is not necessary. The record is still fresh in our
15 minds, and sometimes when you summarize it, you are
16 going to run into problems with inaccuracies. That is
17 what the findings are about afterwards.

18 You cannot cumulatively build your findings
19 expressly in each and every question without taking too
20 long to some extent. That is a valuable process, but to
21 some extent, as long as you have responded, I will
22 respond back. You are asking one, two, or three
23 questions too many in terms of trying to get the
24 ultimate findings. You can write your findings as to
25 what you think his apparent contradiction is.

1 It's only in Perry Mason where the other side
2 falls down and says, I've been wrong all my life and
3 you've been right, and I confess. And it's very helpful
4 when you get some sort of concession in the answer.
5 There's no doubt about it. But when you don't get it
6 the first time, to come back at it and say, how can you
7 answer that given all of the other answers you gave me,
8 is not highly likely to promote efficiency, in my
9 opinion, both from what I have seen here and in other
10 hearings.

11 Now, if you want to take a shot, you can ask
12 that question once, but when you don't get the answer
13 you think any reasonable person would give you, it
14 doesn't help, as I said, to go back and say, how can you
15 say that given everything else you've told me? You can
16 do that in the findings, saying the witness testified
17 this, yet to all of my other questions he said all of
18 these other things, and therefore we shoulin't regard
19 what he said.

20 MR. ELLIS: Thank you. I understand that.

21 BY MR. ELLIS: (Resuming)

22 Q Mr. Hubbard --

23 JUDGE BRENNER: Let me add for the record,
24 since the cold record won't show this, you are both
25 being very courteous to each other. And that is

1 appreciated. And that, I think, is a part of the reason
2 that we have more words in the questions and answers in
3 this effort on the part of both of you to try to be
4 fair. That is nice, but that is what I meant by getting
5 too conversational. You can be pleasant but still be
6 efficient.

7 BY MR. ELLIS: (Resuming)

8 Q Mr. Hubbard, you indicated in -- Mr. Hubbard,
9 it is fair to say, isn't it, that you do not know
10 whether at the time of the CAT inspection the bird
11 screens that are referred to in (f) on page 21 of your
12 testimony had been scheduled for installation and had
13 not yet been installed?

14 A (WITNESS HUBBARD) I don't know that that is
15 true.

16 Q And is it also fair to say that you did not
17 make any inquiry or investigation into whether any QC
18 inspections or QA inspections of the installation of the
19 bird screens had been missed or any gates had been
20 missed with respect to the installation of the bird
21 screens?

22 A (WITNESS HUBBARD) No, I did not, but that is
23 the sort of information I would have expected the LILCO
24 personnel to tell the I&E inspector and explain why the
25 screens weren't there. And so if that had been the

1 explanation, I would have expected this not to have been
2 written up because that would have been explained to the
3 I&E inspector.

4 Q With respect to item (g) on page 21, would it
5 be fair to say that you also made no investigation or
6 inquiry into whether the vent and drain lines were in
7 use during the period of the CAT inspection?

8 MR. LANPHER: I object to that question. I
9 don't understand the relevance.

10 MR. ELLIS: Let me restate the question
11 without addressing myself to that.

12 BY MR. ELLIS: (Resuming)

13 Q Mr. Hubbard --

14 JUDGE BRENNER: Okay, if you want to.

15 MR. ELLIS: I will come back to it, but I will
16 just lead up to it.

17 BY MR. ELLIS: (Resuming)

18 Q Mr. Hubbard, is it fair to say that you do not
19 know one way or the other whether there was a test
20 program under way with respect to the RHR system at the
21 time of the CAT inspection?

22 A (WITNESS HUBBARD) No.

23 Q You did know that such a program was under way?

24 A (WITNESS HUBBARD) Yes.

25 Q And you also know then, don't you, that in the

1 conduct of that sort of test program vent and drain
2 lines would be in use and not capped?

3 A (WITNESS HUBBARD) If that were the case, Mr.
4 Ellis, I would have expected a tag to be there saying
5 why the cap is removed. It's like jumpers, if you take
6 something off, you tag it.

7 (Counsel for LILCO conferred.)

8 Q So you're under the impression there is a
9 tagging program for vent cap, vents and drains?

10 A (WITNESS HUBBARD) Yes, I am under the
11 impression that when you take things off, you put tags
12 there to say something has been removed.

13 Q Have you ever reviewed the Shoreham procedures
14 to determine whether there is a requirement to tag vents
15 and caps or vents and drains when caps are removed?

16 A (WITNESS HUBBARD) No, I have not.

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1 Q It is fair to say, then, that you do not know
2 whether any of the vent and drain lines in Item (g) were
3 in use at the time of the CAT inspection.

4 A (WITNESS HUBBARD) That is correct. I also am
5 aware that this is not an isolated finding. At page
6 4-39 of the CAT inspection, in terms of the leakage
7 return system again it says caps on test vent and drain
8 lines were not completely installed as per the drawing.

9 Q And with respect to those that you referred to
10 on 4-39, you don't know whether those were in use or
11 involved in the test program at the time, do you?

12 A (WITNESS HUBBARD) No, I do not. However --

13 Q Excuse me. Go ahead. And would it be fair to
14 say that you also do not know whether the system
15 installation was complete with respect to what is on
16 4-29, the leakage return system?

17 A (WITNESS HUBBARD) That is correct. However,
18 the NRC inspectors did talk in here that when they
19 looked at the plants, they looked at things like E&DCRs
20 that were outstanding against drawings. So I would have
21 expected, if the explanation you just gave were the
22 correct one, that the I&E inspector would not have
23 written it up.

24 JUDGE BRENNER: Incidentally, I think you said
25 4-29, and it is 4-39, which is page 29.

1 THE WITNESS: Yes. Excuse me.

2 MR. ELLIS: Thank you, Judge Brenner. I did
3 say 29.

4 JUDGE BRENNER: Happily, the key is if you
5 subtract 10 from the Attachment 4 designations, we have
6 the right page.

7 [Counsel for LILCO conferring.]

8 BY MR. ELLIS: (Resuming)

9 Q Mr. Hubbard, are you familiar with the ASME
10 inspection certification program now in progress for
11 Shoreham?

12 A (WITNESS HUBBARD) Are you referring to the
13 N-5 program?

14 Q Yes.

15 A (WITNESS HUBBARD) Yes, I am familiar with it.

16 Q And isn't it true that that inspection
17 program, a part of it is designed to ensure that vent
18 and drain lines are capped where it is appropriate for
19 them to be capped?

20 A (WITNESS HUBBARD) That is one aspect that
21 would be looked at, but here we are talking about vents
22 and drain lines that are shown on drawings but aren't
23 there.

24 Q I'm sorry. You didn't mean to say that the
25 vent and drain lines weren't there; you meant to say

1 that the vents were not there, isn't that right, or the
2 caps, I'm sorry, not the vents?

3 A (WITNESS HUBBARD) I meant to say that the
4 caps were not there as required by the drawings.

5 [Counsel for LILCO conferring.]

6 Q And it is your understanding that the ASME
7 certification program inspection, that part of it is
8 designed to ensure that the caps are there where it is
9 appropriate for them to be there?

10 A (WITNESS HUBBARD) I am aware in the N-5
11 program you do a check of the as-built versus the
12 as-analyzed conditions and that it is possible that one
13 would go ahead and look at something like this to see
14 that the caps are there. That is surely not the main
15 intent of the N-5 certification process.

16 Q Look at Item (h) on page 21, Mr. Hubbard,
17 referring to locked valves, no program or hardware is in
18 place to lock valves. You did not examine or review
19 LILCO procedures to determine whether in various
20 procedures for the systems there is a requirement that
21 the valves be locked in appropriate circumstances.

22 MR. LANPHER: Could I please have the question
23 repeated?

24 MR. ELLIS: I will repeat it to save time.

25 BY MR. ELLIS: (Resuming)

1 Q Mr. Hubbard, it is fair to say, isn't it, that
2 you haven't reviewed the Shoreham procedures to
3 ascertain whether the procedures for the various systems
4 require or show that valves should be checked in the
5 locked position where appropriate?

6 A (WITNESS HUBBARD) No, I have not.

7 [Counsel for LILCO conferring.]

8 Q Do you know what a valve lineup procedure is?

9 A (WITNESS HUBBARD) In general, yes.

10 Q Would that check for whether a valve is
11 appropriately in the locked position, if you know?

12 A (WITNESS HUBBARD) It might and it might not.

13 [Counsel for LILCO conferring.]

14 JUDGE BRENNER: Mr. Ellis, this is probably
15 awfully picky, but I think your question was do you know
16 if that procedure would show if a valve is appropriately
17 in the locked position. Did you mean if it would show
18 whether the valve was locked in the proper position?

19 MR. ELLIS: Yes, sir. And I think if you will
20 give me a moment I will put it more precisely for Mr.
21 Hubbard as well.

22 [Counsel for LILCO conferring.]

23 BY MR. ELLIS: (Resuming)

24 Q Would a valve checklist provide the required
25 position, either locked open or locked closed, for the

1 specific valve?

2 MR. LANPHER: Judge Brenner, I am going to
3 object to this line of questioning. I don't understand
4 how this goes to the QA issues which we are supposedly
5 addressing. I refrained thus far this morning from
6 making this objection.

7 JUDGE BRENNER: Well, I can see the relevance
8 to the finding (h), which Mr. Hubbard has endorsed by
9 putting it in his testimony and drawing some conclusions
10 from that finding along with the others. The
11 questioning is going to whether he knows there is in
12 fact a program in place to lock valves. It is close
13 enough where I am not going to cut it off at this
14 point. How much time it is worth is something else.
15 But I am guilty of extending this one because I wasn't
16 sure of the wording of the question before.

17 Can you answer the question, Mr. Hubbard?

18 WITNESS HUBBARD: Yes. The finding was that
19 there was no program or hardware, so the program, like
20 the --

21 JUDGE BRENNER: The question is whether you
22 knew.

23 WITNESS HUBBARD: I did not know there was a
24 program and I didn't know the hardware was there. That
25 is what the finding says.

1 JUDGE BRENNER: How about the particular
2 checklist procedure Mr. Ellis asked you about?

3 WITNESS HUBBARD: And to this day I don't know
4 that there is a checklist procedure. The finding was
5 there was no program and no hardware. They may have a
6 procedure now or they may have a procedure they didn't
7 show the inspector, but at the time it was written, it
8 said no program and no hardware.

9 JUDGE BRENNER: So here again, like many of
10 the other findings we talked about, you are accepting
11 the inspector's finding, at least at the time of the
12 inspector having written the finding and the inspection
13 report, that no program or hardware was in place to lock
14 valves.

15 WITNESS HUBBARD: Yes. And also I am
16 accepting the fact that these items have still not been
17 closed out, that there is a procedure for closing out
18 unresolved items, which has the I&E go back in and say
19 we have looked and this is what we found and this has
20 now been closed out. And on this particular item, to
21 the best of my knowledge that hasn't occurred yet.

22 [Counsel for LILCO conferring.]

23 BY MR. ELLIS: (Resuming)

24 Q Mr. Hubbard, on page 22 of your testimony you
25 also conclude that Items (a) through (h) on page 21

1 violate Criterion 15. Again, the NRC inspector did not
2 conclude that, did he?

3 A (WITNESS HUBBARD) That is correct.

4 Q Now, is it your testimony that -- let's take
5 with respect to (f) on page 21, which we have talked
6 about, namely, the grid or reference locations on a
7 drawing not being correct. Is it your testimony that
8 that is a non-conforming material part or component?

9 A (WITNESS HUBBARD) No, that would appear to be
10 a nonconformance in the design checking process.

11 Q Well, if it is in your view a nonconformance
12 in the design checking process, Criterion 15 doesn't
13 have any application, does it?

14 A (WITNESS HUBBARD) No, that would be covered
15 by Criterion 3.

16 Q So wouldn't it be fair to say, then, that your
17 conclusion that Criterion 15 is applicable to (a)
18 through (h) is not correct?

19 A (WITNESS HUBBARD) I would agree that
20 Criterion 15 does not appear to be applicable to Item
21 (d).

22 Q All right. Does that mean that you think
23 Criterion 15 is applicable to the remainder of the list,
24 (a) through (h)?

25 A (WITNESS HUBBARD) In general, yes. Item (f)

1 could be a case where 15 might not be as applicable.

2 There is some question in my mind about that.

3 [Counsel for LILCO conferring.]

4 Q Well, look at Item (b). Isn't that a
5 situation where, at least according to the CAT
6 inspector's finding, the note on the drawing is not
7 accurate? I should have said flow diagram rather than
8 drawing.

9 A (WITNESS HUBBARD) Yes, that could be like in
10 the category (d), Mr. Ellis. That could have been a
11 Criterion 3 and design checking, or it might have been
12 something that the inspector would have caught when he
13 was doing the inspection.

14 Q Well, the same would be true for (e), wouldn't
15 it, also, Mr. Hubbard?

16 A (WITNESS HUBBARD) I don't believe so, Mr.
17 Ellis. The note there is that they are not constructed
18 in accordance with the Note 15.

19 Q Well, you have already indicated, haven't you,
20 that you did not review what the Note 15 said?

21 A (WITNESS HUBBARD) That is correct. I didn't
22 have the drawing to do that.

23 [Counsel for LILCO conferring.]

24 Q Well, you say, then, that there is a
25 difference as you read it between (b) and (d), (b) of

1 which you have already indicated is not appropriately
2 listed under Criterion 15.

3 MR. LANPHER: I object to that
4 characterization of his previous testimony. That is not
5 what he said. He said it might also be appropriate
6 under Criterion 9. He did not rule out Criterion 15
7 with respect to Item (b).

8 JUDGE BRENNER: He did as to (d). I think
9 that is right. Why don't you ask the question
10 directly? I don't know why we keep plowing over the
11 items again and again.

12 MR. ELLIS: Well, this is a different
13 criterion, Judge Brenner, that he has cited, and I think
14 he has indicated that some of them, even though it is
15 stated to be for all of them --

16 JUDGE BRENNER: All right. Why don't you, if
17 you want to ask it, ask it without the characterization
18 of the prior testimony.

19 MR. ELLIS: Yes, sir. Judge Brenner, if you
20 will indulge me, I will ask the witness to correct my
21 characterization if I am wrong, but that is what led me
22 to (e), is his testimony on (b), so with your permission
23 if I could just rephrase it, and correct me if I am
24 incorrect.

25 JUDGE BRENNER: Okay.

1 BY MR. ELLIS: (Resuming)

2 Q Mr. Hubbard, I understood that you testified
3 that Criterion 15 either would or might not be
4 appropriate for (b) on page 21. Isn't (b) essentially
5 the same as (e), and therefore wouldn't the same
6 conclusion apply with respect to (e)?

7 A (WITNESS HUBBARD) I don't know that (b) is
8 the same as (e), and what we are getting into is what
9 Judge Morris and I talked about yesterday, that the QA
10 is a process, and that in the design checking you try to
11 see that the various hierarchies in drawings are
12 consistent and use consistent nomenclature, and you
13 inspect to see the plant is built to the drawings. And
14 so the context of these eight items were that the
15 as-built plant is different than the drawings. That is
16 how the I&E inspector looked at it. And so for that
17 reason I cited Criterion 15.

18 When we get into the details of how this
19 occurred, the difference between the as-built and
20 drawings, it could have been either a breakdown in
21 inspection or test, which would be 10 and 11, or it
22 could be a breakdown in the design checking process,
23 which would be more appropriate for Criteria 3. But the
24 net result is a plant as built is different than what is
25 shown on a drawing.

1 Q We are looking, though, at Criterion 15 on
2 page 22, Mr. Hubbard, and your answer dealt with
3 Criteria 10 and 11.

4 [Counsel for LICO conferring.]

5 Would it be fair to say, then, that you can't
6 be sure whether Criterion 15 is applicable to Item (e)
7 on page 21 because you don't know enough about it?

8 A No. I can understand the point you have been
9 making that there was a breakdown someplace else in the
10 process other than inspection testing, but it would
11 still -- I would go back to the previous answer. If it
12 is not 15, then it is 3, but the net result is that
13 somehow in the hierarchy the process wasn't working.

14 [Counsel for LILCO conferring.]

15 Q So what you are saying is that it could be 10
16 or it could be 11 or it could be 15, but you would have
17 to know more about it to determine which of those is
18 really involved.

19 A (WITNESS HUBBARD) Yes, but it would be in
20 those general category of criteria that those would be
21 intended to prevent the installation of material that
22 did not conform to requirements. So 15 is really to
23 control that so you build things to requirements, and 10
24 and 11 is the checking and testing that is done to be
25 sure that you meet those requirements.

1 Q Well, 15 is related to non-conforming
2 material, parts or components, and not control of the
3 design process; isn't that right?

4 A (WITNESS HUBBARD) That is correct. Criteria 3
5 is control of the design process.

6 Q Mr. Hubbard, let's go move on to page 22.
7 Yes, let's do page 22, where you have an alleged
8 breakdown, number 16, relating to in part metal
9 identification tags missing from instrument lines. You
10 say this is a violation of Roman XIII again, or
11 Criterion 13. Again, the I&E inspector did not conclude
12 this, did he?

13 A (WITNESS HUBBARD) The NRC did not cite this
14 as a violation of Criterion 13.

15 Q When you cited Criterion 13, I take it you did
16 so in this context because you assumed that the tags
17 were not there because they were damaged or deteriorated
18 in some way.

19 A (WITNESS HUBBARD) No.

20 Q Well, what assumptions did you make in citing
21 Criterion 13 here?

22 A (WITNESS HUBBARD) The second sentence, where
23 it says the number of vent valves had not been plugged
24 or capped to prevent dirt and dust from entering the
25 valves. So dirt and dust would possibly cause damage or

1 deterioration. So I first keyed in on the dirt and dust,
2 and then secondly I looked at the fact that tags were
3 missing.

4 Q Are you done with your answer?

5 A (WITNESS HUBBARD) Yes, sir.

6 Q Well, my question didn't relate to the vent
7 valves, it related to the tags, and my question was,
8 because you cited Criterion 13, didn't you assume that
9 the identification tags were missing because they had
10 been damaged or there had been deterioration?

11 MR. LANPHER: I object. That is not what the
12 question was.

13 JUDGE BRENNER: Let him ask his question now.

14 MR. LANPHER: Then I object because this has
15 been asked already and he said no, and then the question
16 was, well, what assumptions did you make, and Mr.
17 Hubbard went on and explained.

18 JUDGE BRENNER: Hold it. I don't want to go
19 over the whole testimony again. The question is a
20 little different, I think, and that is why, at least in
21 focus, I will let him ask it. I can infer, you could
22 infer what the situation is from the previous answer,
23 but it would be an inference, and the previous answer
24 really wasn't directed to the part on the tags. Even
25 given the previous answer, the answer to Mr. Ellis'

1 question could be either way.

2 How important it is is another matter, but I
3 don't know the answer to Mr. Ellis' question,
4 necessarily, from the answer already given as to why Mr.
5 Hubbard cited Criterion 13.

6 MR. LANPHER: Could I get a clarification? Is
7 that the question, then, at this point?

8 JUDGE BRENNER: No, that was the previous
9 question. The question now is did you also cite
10 Criterion 13 for the reason that you thought the tags
11 were missing as a result of handling and storage
12 problems, that is, that the tags had deteriorated or
13 been inadvertently removed in one of the processes.

14 MR. ELLIS: I thought that was my first
15 question, but I could be mistaken.

16 JUDGE BRENNER: Let's just get the answer so I
17 don't have to repeat the question again. That is the
18 problem with the gratuitous interjections.

19 WITNESS HUBBARD: I cited 13 primarily based
20 on the dirt and dust into the valves. I did not key in
21 on the missing tags when I was selecting the criteria.
22 However, in reading the CAT inspection, the last
23 sentence on page 4-19, it says the licensee took
24 immediate corrective action to replace the missing tags
25 and to cap the exposed valve openings. So there is at

1 least an inference that the tags were missing, which
2 means they should have been there, so for some reason
3 they weren't. However, that was not the part of the
4 quote that I really keyed in on. I keyed in on the vent
5 valves.

6 BY MR. ELLIS: (Resuming)

7 Q So it is fair to say that your citation of
8 Criterion 13 is only applicable to the portion that you
9 quote on page 22 of your testimony related to that valve?

10 A (WITNESS HUBBARD) Not necessarily. 13 is
11 primarily the vent valves, but it looks like there is
12 also an inference that 13 was involved in the tags.

13 Q Well, that is an inference that you draw from
14 the fact that they are missing and that's all?

15 A (WITNESS HUBBARD) Yes.

16 Q Mr. Hubbard, we discussed vent valves in an
17 earlier context. Now with respect to these vent valves
18 on page 22 of your prefiled testimony it is fair to say,
19 isn't it, that you don't know whether those vent valves
20 were in use at the time?

21 A (WITNESS HUBBARD) I do not. However, I have
22 a -- it would be difficult for me to believe that the
23 NRC would cite this if they were in use.

24 Q Do you know how the NRC inspector was able to
25 identify the instrument lines from which the tags were

1 missing?

2 [Pause.]

3 A (WITNESS HUBBARD) No, I don't, Mr. Ellis. I
4 do see the lines right immediately above listed, so I
5 would assume that he took those off of one of the
6 drawings.

7 Q Mr. Hubbard, it is fair to say, isn't it, that
8 you don't know how long either of the conditions that
9 you quote on your alleged breakdown number 16 on page 22
10 had been in existence at the time of the CAT inspection?

11 A (WITNESS HUBBARD) That is correct.

12 Q Mr. Hubbard, let's move on now to --

13 JUDGE CARPENTER: If you are going to move on,
14 Mr. Ellis, I would like to ask one question about this.

15 MR. ELLIS: Yes, sir.

16 JUDGE CARPENTER: The material referenced on
17 page 22 of Mr. Hubbard's pre-filed testimony. Mr.
18 Hubbard, are you sufficiently familiar with the
19 situation so that you can tell me whether or not the
20 area that is being referenced here is part of the system
21 that was being looked at from essentially the as-built
22 condition, that this was part of that system, the RHR
23 system?

24 WITNESS HUBBARD: Judge Carpenter, E-11 means
25 it is HRH. That is the designation for the RHR system,

1 and I believe these are local piping panels. They would
2 be ones with pressure transmitters and things like that
3 that would be down inside the plant. I guess I don't
4 understand your question. E-11 means it is RHR.

5 JUDGE CARPENTER: I wasn't aware of that.
6 That is why I was asking you. I come back to the
7 fundamental issue here, which is attitude. I was trying
8 to see whether this was an area that LILCO could have
9 reasonably anticipated would be inspected and it
10 couldn't bother to pre-inspect it to see whether or not
11 these vents were plugged.

12 I am not sure which criteria that falls under,
13 but I'm just kind of curious about the fact that the
14 inspector found these valves unplugged in this
15 particular area which is planned for inspection. That
16 is why I wanted to be sure that it wasn't something like
17 the vents on the diesel generators which didn't have
18 screens on them, and thank you for helping me.

19 BY MR. ELLIS: (Resuming)

20 Q Mr. Hubbard, let's move on to page 23 where
21 you discuss electrical separation, and you quote in
22 subparagraph A concerning separation of cables and you
23 group this under failure to document activities
24 affecting quality and failure to prevent installations
25 which do not conform to requirements. Did you omit

1 something from the quote which is pertinent to whether
2 there was a failure to document activities or failure to
3 prevent installations which do not conform to
4 requirements?

5 [Pause.]

6 A (WITNESS HUBBARD) That particular quote, Mr.
7 Ellis, came from 4-21 of my attachment, and I don't
8 think I deleted anything. There is a sentence that
9 follows that says that there was a resolution with an
10 E&DCR. However, this E&DCR was imposed after a majority
11 of the cables had been installed, so it was after the
12 fact. So there is additional information on page 4-21
13 but I didn't intentionally leave anything out.

14 Q Well, that wasn't even the first E&DCR on the
15 issue, was it? Isn't there a reference on your page 25
16 to an E&DCR in 1978?

17 A (WITNESS HUBBARD) That is correct, Mr.
18 Ellis. There have been also a number of different
19 separation problems, some of them with inside
20 equipment. Oh, it dates back to the 1977 time period.
21 So there have been a number of E&DCRs on various aspects
22 of electrical separation.

23 Q You have not reviewed the E&DCR that is
24 referred to in the sentence that follows immediately
25 from the quote that you put in as Subparagraph A on page

1 23, have you?

2 A (WITNESS HUBBARD) No, I have not. And in
3 terms of what I'm writing, I don't think that would be
4 relevant.

5 Q Wouldn't you want to examine that in order to
6 determine whether or not there was a failure to document
7 activities affecting quality and a failure to prevent
8 installations which do not conform to requirements?
9 Wouldn't you want to determine whether the document did
10 cover those items?

11 A (WITNESS HUBBARD) No, because that E&DCR was
12 issued after the fact.

13 Q Well, the NRC inspector did not conclude that
14 this was a QA/QC violation of Criterion 5, did he?

15 A (WITNESS HUBBARD) Arguably, yes, he did,
16 because he says that all of this is a continuation of a
17 previous violation, the 3-22-7907.

18 Q Mr. Hubbard, hasn't electrical separation been
19 a matter under technical discussion and review by the
20 NRC and LILCO for a considerable period of time? This
21 isn't something that has been missed by anyone, is it?

22 A (WITNESS HUBBARD) I think yes, it has been
23 missed, that this discussion has been going on and, as
24 stated here, since 1978, and it has been going on for
25 four years. And reading the progress reports that I get

1 through the rate case, there were, like, 13,000
2 separation instances which violated the Shoreham spec
3 which had to be resolved, so it seems to me that there
4 was a great deal of cable installations that were made
5 that did not agree with the information in both the FSAR
6 and the Stone & Webster specifications SH-1-159, and
7 that has been going on for a long period of time.

8 Q Mr. Hubbard, let's look at the FSAR. You
9 state on page 24 that the FSAR method for determining
10 separation did not agree with IEEE 384 1974. Isn't it
11 true, though, that the FSAR very clearly states that and
12 very clearly states that it is not committed to IEEE 384
13 1974 but will only adhere when it is possible to do so?

14 A (WITNESS HUBBARD) No.

15 [Counsel for LILCO conferring.]

16 A (WITNESS HUBBARD) There was no explanation of
17 this failure to meet 223 -- well, Stone & Webster had a
18 different way of calculating distance than was in IEEE.
19 I'm not sure LILCO made a commitment to 384 74. Their
20 commitment may have been to an earlier version of 384,
21 but the idea that the way they calculated distances was
22 different than 384 I believe was a correct finding by
23 the NRC.

24 Q Well, the way that the FSAR states that
25 separation is computed is clearly set forth in the FSAR,

1 isn't it?

2 A (WITNESS HUBBARD) That is correct. However,
3 there was a specific question, 223-12, which was to list
4 all of the places where the LILCO criteria is different
5 than what is in 384, and this was not one of the ones
6 that was listed. So by looking at further documents,
7 one could figure out that they had a different way of
8 calculating it.

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1 Q Mr. Hubbard, you said it was not listed in the
2 FSAR. Let me show you a page from the FSAR or a Table
3 223.12-3 which is dated -- I believe you will see at the
4 bottom -- it is not on the xerox copies, but it is on
5 your copy -- April of 1979.

6 A (WITNESS HUBBARD) That is correct.

7 Q Now, this does note, does it not, that
8 vertical separation for Shoreham is measured from the
9 bottom of the top tray to the bottom of the side tray of
10 the bottom rail instead of the bottom of the top tray to
11 the bottom of the side rail of the bottom tray as stated
12 in IEEE Standard 384. So it is noted in FSAR in
13 response to Question 223.12, isn't it?

14 MR. LANPHER: Excuse me, Judge Brenner.
15 Unless we are going to have this record, I believe that
16 inadvertently Mr. Ellis misread the portion at the
17 bottom of the page.

18 MR. ELLIS: I'm sorry. What did I misread?
19 Oh, I'm sorry. Why don't we do mark it then? Maybe it
20 would be a good idea to mark it.

21 JUDGE BRENNER: All right. Well, it is in the
22 FSAR.

23 MR. ELLIS: Well, the reason we need to mark
24 it is that the FSAR since 1979 has gone through
25 revisions. The same note is there, but the reason we

1 used this page is because of the date.

2 JUDGE BRENNER: Let me see if I understand
3 this. The version of the FSAR for which we have already
4 assigned an exhibit number in this case has a different
5 table than this one?

6 MR. ELLIS: It has a revised page dated after
7 the CAT inspection, yes, sir.

8 JUDGE BRENNER: So you need the old table.

9 MR. ELLIS: Yes, sir.

10 JUDGE BRENNER: So this will be LILCO Exhibit
11 49 for identification, and that's all it is unless
12 somebody some day tells us this is in the FSAR.

13 (The document referred to
14 was marked LILCO Exhibit
15 No. 49 for
16 identification.)

17 JUDGE BRENNER: The date is April 1979, and
18 this version does not occur in the copy of the FSAR
19 which is an exhibit in this case.

20 Was there a revision number on this table?

21 MR. ELLIS: Yes. I believe it is Revision 26.

22 JUDGE BRENNER: Is that right, Mr. Hubbard, on
23 your copy?

24 WITNESS HUBBARD: I can't read it, but I am
25 familiar with this information as part of Suffolk County

1 Contention 31.

2 JUDGE BRENNER: All right. I just wanted to
3 know if you could see it. How come his copy has numbers
4 and dates and ours isn't?

5 MR. ELLIS: The vagaries of xeroxing is the
6 only reason I can come up with.

7 JUDGE BRENNER: But all of us have the same
8 thing in front of us.

9 MR. ELLIS: Yes. It is a telecopy and a xerox
10 from a telecopy.

11 JUDGE BRENNER: Okay. Now, as to the
12 footnote, I missed what you said, if you said something
13 different than the notes. So why don't you do it
14 correctly.

15 What did he do wrong, Mr. Lanpher?

16 MR. LANPHER: I think in the second line of
17 the footnote, I think he got some words out of -- I
18 can't remember exactly how it was wrong, but he didn't
19 read it the way the footnote reads. Since we hadn't
20 marked it, I was concerned.

21 JUDGE BRENNER: Well, let's bind it into the
22 transcript at this point for convenience.

23 (LILCO Exhibit No. 49 follows.)

24

25

INSERT #1

SNPS-1 PSAR

TABLE 223.12-3

CABLE TRAY SEPARATION IN NONHAZARDOUS AREAS

	IEEE Std. 384 and Reg. Guide, 1.25	SNPS-1
<u>Redundant Class 1E Trays</u>		
Cable Spreading Area		Redundant trays never in same vertical stack
Vertical	3 ft ⁽¹⁾	7 ft
Horizontal	1 ft	solid ⁽²⁾
Tray Covers	none required	
<u>General Plant Areas</u>		
Vertical	3 ft ⁽¹⁾	Same as above
Horizontal	3 ft	3 ft
Tray Covers	none required	solid ⁽²⁾
<u>Non-Class 1E & Class 1E Trays</u>		
Cable Spreading Area		
Vertical	3 ft ⁽¹⁾	1 ft ⁽¹⁾
Horizontal	1 ft	1 in.
Tray Covers	none required	solid ⁽²⁾
General Plant Area		
Vertical	5 ft ⁽¹⁾	1 ft ⁽¹⁾⁽²⁾
Horizontal	3 ft	1 in.
Tray Covers	None	solid ⁽²⁾
Cable Specification	no requirement except for associated circuits	Same as Class 1E
Fire Protection	none required	Auto CO ₂ in Cable Spread. Area; Diesel Generator Rooms, Emergency and Normal Switchgear Rooms

NOTES:

- (1) Vertical separation for SNPS-1 is measured from the bottom of the top tray to the bottom of the side rail of the bottom tray instead of the bottom of the top tray to the top of the side rail of the bottom tray as stated in IEEE Std. 384.
- (2) In certain isolated cases, 9 in. separation is used in the reactor building due to limitation of available space.
- (3) Tray covers for H and L trays are solid side ventilated; covers of K, C, and X trays are solid nonventilated.

To GEORGE DAVIS p. 3 of 3

1 JUDGE BRENNER: Now you can ask him whatever
2 you want to ask him, Mr. Ellis.

3 BY MR. ELLIS: (Resuming)

4 Q Isn't it true, Mr. Hubbard, that the answer to
5 Question 223.12 does in fact indicate that vertical
6 separation for Shoreham is different from that as stated
7 in IEEE Standard 384?

8 A (WITNESS HUBBARD) No, Mr. Ellis. It does
9 show how LILCO calculated vertical separation, but LILCO
10 did not go on and then answer the question in 223.12,
11 which was, as stated in the last sentence I quoted, "The
12 licensee response Question 223.12 did not address this
13 difference between the two documents."

14 Q Well, I take it then you are construing the
15 word "address" to require more information than you saw
16 in the answer to 223.12.

17 A (WITNESS HUBBARD) Yes, sir. In the previous
18 sentence it said that the question was for LILCO to
19 discuss the reason for concluding that the less
20 stringent criteria are adequate, and there were not
21 words that addressed that in response to Question 223.12.

22 Q Do you know whether the NRC construed it as
23 you are construing it by asking for additional
24 information in another question or in this question?

25 A (WITNESS HUBBARD) I don't have my separation

1 file with me. There was another question on electrical
2 separation. I don't recall the number of it. It was
3 cited, I believe, in the testimony I prefiled on SC-31.

4 Q Isn't that all part of the ongoing technical
5 discussion between the staff and LILCO concerning the
6 electrical separation issue?

7 A (WITNESS HUBBARD) I would not call it that,
8 Mr. Ellis. The staff asked a specific question, and the
9 answer they got did not appear to address one part of
10 the question. And I think that is what the I&E
11 inspector is pointing out.

12 Q Mr. Hubbard, isn't it fair to say, though,
13 that this is a technical or engineering issue and not a
14 QA/QC issue involving a failure to document activities?
15 Activities are pretty well documented, aren't they?

16 (Pause.)

17 A (WITNESS HUBBARD) For this particular one I
18 think the activities are documented. However, they are
19 documented in an inconsistent manner. LILCO was really
20 asking for an exemption to a reg guide and 384
21 requirement but didn't ask for it directly.

22 Q Mr. Hubbard, you don't need an exemption for
23 reg guides, do you?

24 A (WITNESS HUBBARD) No. But there was a
25 question, 223.12, which asked for the difference between

1 what was in the reg guide and what LILCO was doing.

2 Q I'm sorry. Did you confirm, Mr. Hubbard, that
3 you are aware that Shoreham was not committed to IEEE
4 384 in 1974 and Reg Guide 1.75 Revision 1?

5 A (WITNESS HUBBARD) That is my recollection;
6 that Shoreham committed to an earlier version to the
7 extent practicable. In Appendix 3B in the list of reg
8 guides I think those are the words.

9 JUDGE BRENNER: Do you mean they committed to
10 an earlier version and to the extent practicable would
11 meet whatever version we're talking about now, the 1974
12 version, or did you mean what you said, that they would
13 commit to an earlier version to the extent practicable?

14 WITNESS HUBBARD: My recollection is they
15 committed to meeting an earlier version of the reg guide
16 to the extent practicable, but it is written in table or
17 Appendix 3B which lists all of the reg guides. And if
18 we want to know the exact words, I will look and I will
19 tell you what the exact words are.

20 JUDGE BRENNER: When you said earlier version
21 in response to the question, I deemed that to also
22 modify the IEEE standard. Are you limiting it to the
23 reg guide?

24 WITNESS HUBBARD: The earlier version of the
25 reg guide, as I recall the reference, is an earlier

1 version of the IEEE standard. However, this part on
2 calculating distances my recollection is has always been
3 part of the IEEE standard, one part that changed from
4 revision to revision.

5 JUDGE CARPENTER: Mr. Hubbard, if you can help
6 me, you say this is a way of calculating the distances,
7 but the consequences of that are not -- the bottom line
8 comes down to the fact that the result is that the two
9 items that are being considered are different distances
10 from each other. But it is not a matter of how some
11 definition of the way in which the distance is
12 calculated, but it is a way of stating the criteria
13 which is really different.

14 Is that a correct interpretation on my part?
15 I mean in one case the cables turn out to be 12 inches
16 apart, and in another case they turn out to be 8 or 9.

17 WITNESS HUBBARD: Yes, that is the
18 significance. The LILCO method gives 8 or 9. The IEEE
19 way gives 12. So it is a reduction of about 3 to 4
20 inches of separation.

21 JUDGE CARPENTER: That is because of referring
22 to reference parts that are not the cable themselves but
23 other parts of the way the cables are supported. And if
24 so -- obviously they refer to different parts of the
25 supporting structure -- you come up with different

1 numbers. But there's no question that there is a real
2 difference in the position of the cables.

3 WITNESS HUBBARD: I think there is a real
4 difference. The IEEE standard would have the trays
5 separated by 12 inches.

6 JUDGE CARPENTER: And therefore the cables.

7 WITNESS HUBBARD: And therefore the cables.
8 The LILCO method would get them much closer to each
9 other. So we're talking about a real difference of 3 to
10 4 inches of separation if you believe that 12 inches of
11 air is a good idea, which is what the IEEE standard says.

12 JUDGE CARPENTER: Between the cables?

13 WITNESS HUBBARD: Between the trays.

14 JUDGE CARPENTER: The trays are in three
15 dimensions. What is a critical consideration of the
16 tray? Well, first of all, if you could help me, is it
17 really the spacing between the trays or the spacing
18 between the cables?

19 WITNESS HUBBARD: Well, the cables sit on the
20 bottom of the trays.

21 JUDGE CARPENTER: From a safety point of
22 view? That's my primary consideration.

23 WITNESS HUBBARD: From a safety standpoint
24 you're interested in the separation between the cables.

25 JUDGE CARPENTER: So if the rails happen to be

1 an inch high or three inches high, that is not a major
2 consideration when I view the separation between the
3 cables; the height of the rail is not a major
4 consideration?

5 WITNESS HUBBARD: No. That just says how high
6 you can pile the cables within the tray.

7 JUDGE CARPENTER: It doesn't influence from
8 the safety point of view the performance of the system,
9 the free air space between the cables, even though it
10 might restrict the passage of air in cooling and so on.

11 WITNESS HUBBARD: Yes. There are other
12 standard that say, oh, like you can only have a cable
13 tray filled 42 percent for thermal reasons, things of
14 that sort. But here we are talking about the IEEE wants
15 a distance of 12 inches between the trays of free air
16 where you have cables sitting on the bottom or the top
17 tray, and it could be up to almost the top of the bottom
18 one.

19 JUDGE CARPENTER: Thank you for helping me see
20 this a little more clearly.

21 BY MR. ELLIS: (Resuming)

22 Q Mr. Hubbard, just to -- excuse me.

23 JUDGE MORRIS: I just wanted to clarify one
24 thing, Mr. Hubbard. You were asked by Mr. Ellis whether
25 you needed an exception or an exemption if you didn't

1 follow the reg guide. Do you recall that?

2 WITNESS HUBBARD: Yes, sir.

3 JUDGE MORRIS: Isn't it the NRC practice that
4 if the reg guide is not met then technical justification
5 is required?

6 WITNESS HUBBARD: Yes, sir. And that was the
7 question that was being asked was for this justification.

8 JUDGE MORRIS: Right. Thank you.

9 MR. LANPHER: Judge Brenner, at some point
10 along here -- I don't know if this is convenient for Mr.
11 Ellis -- but I think we could use a break.

12 MR. ELLIS: Well, whatever would suit the
13 Board and the parties. I have maybe -- well, yes, sir,
14 this might be a good time.

15 JUDGE BRENNER: Okay. Let's come back at
16 10:55.

17 (Recess.)

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1 JUDGE BRENNER: Okay. We're ready to go back
2 on the record.

3 MR. ELLIS: I'm sorry, Judge Brenner. May I
4 go off the record for a moment?

5 JUDGE BRENNER: Yes.

6 (Discussion off the record.)

7 JUDGE BRENNER: Let's go back on the record.

8 BY MR. ELLIS: (Resuming)

9 Q Mr. Hubbard, just prior to the break you
10 indicated to Judge Carpenter that the difference in the
11 measuring techniques stated by LILCO in its FSAR and
12 IEEE 384 resulted in a difference of three or so inches,
13 a difference between 12 inches between the trays and 9
14 inches between the trays.

15 Isn't it a technical or engineering question
16 whether that 9 inches or 8 inches or 10 inches is
17 satisfactory as opposed to 12 inches rather than a QA
18 question?

19 A (WITNESS HUBBARD) No, Mr. Ellis, not in the
20 broad concept of QA. Clearly it is a matter of judgment
21 on justification for less stringent criteria, but it is
22 also part of the design control process that goes into
23 the FSAR.

24 Q Well, the FSAR clearly stated that IEEE 384
25 was not going to be complied with, isn't that right?

1 A (WITNESS HUBBARD) No. There is an inference,
2 but it is not clearly stated, and no justification is
3 provided for.

4 (Counsel for LILCO conferring.)

5 Q Well, Mr. Hubbard, I'm a little confused.
6 Doesn't the FSAR state very clearly how the vertical
7 separation is to be measured?

8 A (WITNESS HUBBARD) It states that -- you said
9 very clearly it states what LILCO did, but it didn't
10 then in the body of the answer go back and explain that
11 as one of the differences between 384 and the LILCO
12 approach and provide technical justification for that
13 difference.

14 (Counsel for LILCO conferring.)

15 Q So your testimony that it is a QA problem
16 rests on the absence as you see it of the technical
17 justification in the FSAR concerning the separation.

18 A (WITNESS HUBBARD) Yes, in part, and in part
19 due to the design review process that allowed this to
20 continue.

21 Q Well, didn't it continue -- that is, the
22 separation not pursuant to 384 -- didn't it continue
23 perfectly, intended to continue and controlled by E&DCRs
24 and the FSAR as well?

25 A (WITNESS HUBBARD) No. I think separation

1 without a control was out of control. There were 13,000
2 installations made that were contrary to the LILCO cable
3 specification, and so a number of those had to be
4 reviewed. And this has been an ongoing problem for a
5 number of years.

6 Q That is not --

7 (Counsel for LILCO conferring.)

8 Q Mr. Hubbard, so we're operating from the same
9 premise, the FSAR stated how the vertical separation was
10 to be measured and stated that it was not as IEEE 384
11 stated it, and that has always been known to the NRC.
12 And it is in Section 3.12.3.5.2 of the FSAR.

13 MR. LANPHER: Judge Brenner, could we ask that
14 the witness be provided a copy of this section of the
15 FSAR?

16 JUDGE BRENNER: Yes. Do you only have the
17 one, Mr. Ellis?

18 MR. ELLIS: Yes. We told them. Didn't we
19 indicate --

20 JUDGE BRENNER: Wait a minute. I just asked a
21 simple question. I think we have one right next door.
22 What volume is it?

23 Mr. Dawe, what volume is that?

24 MR. DAWE: That is Volume 6, Judge.

25 JUDGE BRENNER: Unless it gets to the point of

1 detail where we need it, we might be able to accommodate
2 you also.

3 MR. ELLIS: May I have my question?

4 JUDGE BRENNER: Wait a minute. Let's go off
5 the record. Judge Morris is getting the volume.

6 (Discussion off the record.)

7 BY MR. ELLIS: (Resuming)

8 Q Do you recall the question, Mr. Hubbard?

9 A (WITNESS HUBBARD) No, I don't, Mr. Ellis.

10 JUDGE BRENNER: I'm not going to try to repeat
11 that subsection number. Do you want it read back, Mr.
12 Ellis?

13 MR. ELLIS: Yes, I would, please, Judge
14 Brenner.

15 (The Reporter read the record as requested.)

16 BY MR. ELLIS: (Resuming)

17 Q To expedite matters, if you need to refer to
18 it --

19 MR. LANPHER: Judge Brenner, my only concern
20 with the question is -- and that has always been known,
21 and we have evidence that this, at least portions of
22 this, have been revised.

23 Is the textual section that he referred to
24 the same that has been in FSAR during the whole time
25 frame that the plant has been built?

1 JUDGE BRENNER: Let him ask Mr. Hubbard the
2 question, and instead of always why don't you talk about
3 a time frame from the beginning of installation of the
4 cables and cable trays, unless you want to put another
5 time frame in.

6 MR. ELLIS: Well, the particular document that
7 Mr. Lanpher mentioned is not the one we're referring to
8 now, but let me put the time frame on it -- since 1976,
9 which is the date of the FSAR.

10 WITNESS HUBBARD: Well, I do have that
11 problem, Mr. Ellis, that the sheet that talks about the
12 vertical separation -- well, on page 3.12-11, which is
13 Revision 27 dated August 1982, there is in the third
14 paragraph down in parentheses the statement that
15 horizontal separation is measured from the side rail of
16 one tray to the side rail of the adjacent tray, and
17 vertical separation is measured from the bottom of the
18 top tray to the bottom of the side rail of the bottom
19 tray. So it is stated that is the method that was used
20 by LILCO.

21 Now, this is not one of the sections or
22 paragraphs that has a line out showing that it was
23 changed in Revision 27; so that says at least in the
24 previous revision this statement was there.

25 Q And you can also conclude, can't you, Mr.

1 Hubbard, that it was there when the CAT inspector looked
2 at it because he cited it?

3 A (WITNESS HUBBARD) That is correct, Mr. Ellis.

4 Q So you can't tell, though, from looking at
5 this whether or not this information was known to the
6 NRC through the FSAR back before the previous revision,
7 can you?

8 A (WITNESS HUBBARD) I'm really sorry. Could we
9 have that question back?

10 Q Do you have any knowledge -- I will restate --
11 do you have any knowledge concerning when the NRC knew
12 about the manner in which electrical separation
13 distances were measured at Shoreham?

14 A (WITNESS HUBBARD) Mr. Ellis, I think that the
15 NRC may have known that LILCO did a calculation a
16 different way. The point that the I&E inspector was
17 making, though, was that when LILCO was specifically
18 asked to describe the exceptions and the justification
19 for it that they had not done that. So it seems to me
20 that the questions have not gone to what the NRC
21 inspector cited LILCO for which was the lack of
22 justification for an exception.

23 Q And so your QA problem that you are referring
24 to then is the nature of the answer to the question
25 whether or not it was complete in giving its

1 justification, isn't that right? That is what you are
2 referring to as the QA problem?

3 A (WITNESS HUBBARD) The QA problem in part
4 having to do with item D was that the answer to 223.12
5 was not complete.

6 Q And I think you testified earlier you don't
7 know whether NRR has ever asked for any more information?

8 A (WITNESS HUBBARD) That was not my testimony.

9 Q I'm sorry. Do you know whether NRR has asked
10 for any more information concerning electrical
11 separation?

12 JUDGE BRENNER: He said he seemed to remember
13 another question that was asked as part of his work on
14 Contention Suffolk County 31, but he wasn't sure.

15 WITNESS HUBBARD: There are two questions, and
16 whether this was the first one or the second one, I
17 don't recall without looking at it.

18 JUDGE BRENNER: I didn't want to take the
19 floor away from you, Mr. Hubbard. I just wanted to
20 recap that briefly. If you want to add to what I said,
21 you can.

22 (No response.)

23 (Counsel for LILCO conferring.)

24 BY MR. ELLIS: (Resuming)

25 Q Mr. Hubbard, would you look, please, at

1 request 223.67 in the FSAR? Is that the one that you
2 were referring to as the one you seem to remember was
3 the request for other information?

4 A (WITNESS HUBBARD) Yes, it is, Mr. Ellis.

5 Q They didn't ask for any justification in there
6 concerning instances, even though they knew about them,
7 isn't that right? By "they" I mean the NRR.

8 A I don't agree, Mr. Ellis, with your assumption
9 that they knew about it; that on close reading they may
10 have known about it. However, it was not one of the
11 items that was specifically justified. In fact, it was
12 omitted. However, in direct answer to your question
13 about 223.67, they do not ask about further questions
14 about the 9 inches versus 12 inches.

15 (Counsel for LILCO conferring.)

16 JUDGE CARPENTER: Mr. Hubbard, did the
17 question specifically ask about the difference between
18 the 9 inches and the 12 inches?

19 WITNESS HUBBARD: No, it did not. The --
20 well, Judge Carpenter, which question are you talking
21 about, the 223.67 -- that is the more recent question --
22 or the original question?

23 JUDGE CARPENTER: The one you were just
24 reading from.

25 WITNESS HUBBARD: The second question, 223.67,

1 is a followup to 223.12, and it asks for additional
2 information on what was practicable and possible. And
3 it does not ask questions on the 9 inches versus 12
4 inches.

5 JUDGE CARPENTER: Do you feel that you
6 reviewed the questions relating to electrical separation
7 in some detail?

8 WITNESS HUBBARD: Yes, I do. I'm familiar
9 with that having written testimony on SC-31.

10 JUDGE CARPENTER: In that review did you find
11 any place the explicit question requesting a technical
12 analysis of the safety implications of a separation
13 criteria 12 inches versus 9 inches?

14 WITNESS HUBBARD: Yes, I did. In Question
15 223.12, at page 223.12, the first question is "Compare
16 your separation design requirements to those in IEEE
17 Standard 384, 1974 as augmented by Reg Guide 1.75
18 Revision 1, and identify those requirements and aspects
19 of your design which are not in accordance with either
20 the standard or the regulatory guide. Where less
21 stringent criteria are proposed, discuss the reasons for
22 concluding that the less stringent criteria are
23 adequate."

24 When LILCO answered that, they did not
25 specifically provide an analysis for the 6 versus the 9

1 inches. The only place that you have reference to that
2 is in a footnote in a table. It was not one of the ones
3 they had culled out to provide a justification for.

4 JUDGE CARPENTER: Well, I wanted to ask from a
5 quality assurance point of view, and come back to the
6 line of questioning, do you feel that specifically --
7 failure to specifically respond was a quality assurance
8 breakdown, and under what criterion?

9 WITNESS HUBBARD: I think it is, Judge
10 Carpenter, a breakdown in the design control process in
11 that the answers are to be complete. And this is an
12 area where LILCO was doing something different than the
13 reg guide and the IEEE 384 and didn't specifically point
14 that out and then provide their justification for doing
15 it.

16 JUDGE CARPENTER: That makes me think of
17 Criterion 3 in my mind rather than the 5 that you
18 characterized. And I was just trying to explore this to
19 be sure why you thought it was 5 rather than 3.

20 WITNESS HUBBARD: In my defense I think I can
21 only answer what I answered to Judge Morris yesterday;
22 that I was grouping four different things here; that, as
23 stated on page 4-21, the third paragraph down, the NRC
24 inspector observed several apparent violations of
25 separation criteria. And he talks about violations

1 between non-Class 1-E and Class 1-E, and then another
2 violation between Class 1-E of different divisions. And
3 then when he starts in describing those in detail, each
4 of the areas, the first one he selected was one that
5 there weren't criteria or that the requirements didn't
6 exist until after the installation had taken place.
7 Well, that would go to Criterion 5.

8 Looking at it now I could probably go through
9 each one and assign criteria to it, and it might be a
10 little different; but, in general, the separation
11 problem as I would characterize it has been one that
12 installations were made before the criteria were
13 developed. So there is a subset of that which is that
14 the FSAR hasn't been as clear as it could be about
15 what the criteria that LILCO is actually using are.

16 JUDGE CARPENTER: Thank you. That makes it
17 much clearer to me.

18 BY MR. ELLIS: (Resuming)

19 Q Mr. Hubbard, I thought I heard in your answer
20 to Judge Carpenter that you said that the NRC did not --
21 was not told specifically that the reg guide and the
22 IEEE standard were not fully complied with. Turn to
23 3.B-18, please, in Volume 6.

24 Do you have Volume 6 there? You should.

25 A (WITNESS HUBBARD) Yes, Mr. Ellis.

1 Q Do you have that in front of you?

2 A (WITNESS HUBBARD) Yes, sir.

3 Q Would you read, please, the sentence,
4 sentences that appear there?

5 A (WITNESS HUBBARD) You would like me to read
6 3.B 1.75?

7 Q Yes, sir.

8 A (WITNESS HUBBARD) "The electrical systems do
9 not fully comply with Regulatory Guide 1.75." And this
10 is Regulatory Guide 1.75.

11 Excuse me. You want an exact quote?

12 Q Go ahead and read it first and then you can
13 give any explanation you like.

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1 A (WITNESS HUBBARD) "The electrical systems do
2 not fully comply with Reg Guide 1.75 due to the advanced
3 stage of the design at the time of issuance of the
4 guide. The Safety Evaluation Report (February 20, 1970)
5 precedes the implemetation date provided in section D of
6 the guide. However, within the limitations imposed by
7 the system and equipment design, an effort was made to
8 the maximum extent practicable to comply with the guide."

9 Q And then it references, doesn't it, section
10 3.12?

11 A (WITNESS HUBBARD) Yes, it does, Mr. Ellis.
12 and it also says up at the top that this is the reg
13 guide dated 1/75.

14 Q So there is no doubt -- well, strike that.
15 JUDGE BRENNER: Wait. He says this was the
16 reg guide dated 1/75. Is that the date, January '75?

17 WITNESS HUBBARD: Yes, Judge Brenner. The
18 reason I mention that is that --

19 JUDGE BRENNER: I just wanted to know if that
20 is a date.

21 WITNESS HUBBARD: It is 1/75, which is January
22 '75. That is the date of the reg guide. The date of
23 the page is Revision 4, dated February 1977.

24 JUDGE BRENNER: I was confused. We don't have
25 the page in front of us. And I don't have the unusual

1 coincidence of having the same numerical designation for
2 the date as well as the reg guide number. And you have
3 explained that.

4 BY MR. ELLIS: (Resuming)

5 Q But so far as this page is concerned, this
6 existed even prior to February of 1977, diin't it,
7 because there is no bar next to that paragraph?

8 A (WITNESS HUBBARD) That is correct, Mr. Ellis.

9 Q So just so that we are clear, there is no
10 doubt at least as early as February 1977 and earlier,
11 since this Revision 4 did not include a change in that
12 paragraph, the NRC was aware of the LILCO position with
13 respect to Reg Guide 1.75 and was aware of the manner in
14 which the separations were measured. Isn't that correct?

15 A (WITNESS HUBBARD) No, that is not correct,
16 Mr. Ellis. The NRC, as I would hypothesize, looked at
17 the answer on 3.B.175 on page 3.B-18, where LILCO states
18 they do not fully comply with the regulatory guide. And
19 that is the reason why we have questioned 223.12, which
20 asks for a description of the areas where LILCO doesn't
21 comply, and then LILCO responded by response number 1,
22 listed the areas and provided justification. And the
23 item of the 9 inches versus 12 inches was not one of the
24 ones that LILCO pointed out and specifically provided
25 justification.

1 Q But it was identified in that answer. What
2 you are saying is that the justification was not given,
3 is that what you are saying?

4 A (WITNESS HUBBARD) Well, the question was to
5 identify and provide justification, and the only place
6 it was identified was in the footnote, so you would have
7 to say that it was not specifically identified in
8 response to a question and clearly no justification for
9 it was provided.

10 Q Well, that table that you read from where you
11 conceded that it was identified was part of the
12 response, wasn't it?

13 A (WITNESS HUBBARD) Yes.

14 Q Mr. Hubbard, let's turn to another aspect of --
15 (Counsel for LILCO conferred.)

16 JUDGE BRENNER: Let's go off the record.

17 (Discussion off the record.)

18 BY MR. ELLIS: (Resuming)

19 Q Mr. Hubbard, is it fair to say that your
20 understanding then of the separation situation is that
21 -- no, strike that.

22 On page 25 of your testimony you quote again
23 from the CAT report, which in summary states that an
24 EEDCR stated that separation criteria could not be met
25 and requested approval for nonconforming installation;

1 and that the response was that it was permitted provided
2 that it was documented on an E&DCR. And then in the
3 final paragraph you say that Criterion 15 is violated
4 because it requires that measures be established to
5 control items which do not conform to requirements in
6 order to prevent their inadvertent use or installation.

7 Isn't it fairly clear that the installation of
8 the cable that is being referred to in the paragraph
9 that you cited there on page 25 was not inadvertent but
10 deliberate?

11 A (WITNESS HUBBARD) Yes. And I think that is
12 what bothers me, Mr. Ellis, that LILCO knowingly
13 violated the separation criteria in the FSAR.

14 Q And they did so in a controlled manner, using
15 E&DCRs, didn't they?

16 A (WITNESS HUBBARD) They stated that E&DCRs
17 would be used, yes. Whether that was done in all cases
18 is yet to be determined.

19 Q But you don't know that it wasn't?

20 (Pause.)

21 A (WITNESS HUBBARD) I would have to look at
22 some I&E reports to address that. The 82-24 goes into
23 the problems with electrical separation, and then 79-07
24 and 80-10 also discuss it. And as I recall, some of
25 those again pointed out that there were a lack of

1 criteria and not following criteria. But I would have
2 to pull out the I&E reports to refresh my memory on them.

3 Q You do agree, though, don't you, that for
4 Criterion 15 to be applicable, as you stated, that it
5 has to be an inadvertent use or installation?

6 A (WITNESS HUBBARD) No.

7 Q Then why did you say on page 25, and I quote,
8 "The preceding installation of cables is in a
9 nonconforming manner, is contrary to the requirement of
10 Criterion 15 that measures be established to control
11 items which do not conform to requirements in order to
12 prevent their inadvertent use or installation."

13 A (WITNESS HUBBARD) The words are "inadvertent
14 use or installation." So conform to requirements, you
15 install it in accordance with the installation
16 instructions.

17 Q I see. So you don't construe the term
18 "inadvertent" as applying to installation and only to
19 use?

20 A (WITNESS HUBBARD) Yes. I think the point of
21 Criterion 15 is that you install things that conform to
22 the requirements, and if not, then it is a nonconforming
23 material.

24 Q Well, then it is your testimony that under
25 Criterion 15 -- or Criterion 15 is violated any time

1 materials, parts, or components are installed that do
2 not conform to requirements even though that
3 nonconformance is controlled by the design process?

4 A (WITNESS HUBBARD) If it is truly controlled
5 by the design process, then it is not a nonconformance.

6 Q Well, isn't that what the "inadvertent" refers
7 to, whether or not it is properly controlled?

8 A (WITNESS HUBBARD) I don't understand your
9 question, Mr. Ellis, I am sorry.

10 Q Mr. Hubbard, let's move on.

11 (Counsel for LILCO conferred.)

12 Q Look at your alleged breakdowns 25 and 26.

13 Again, the NRC inspector, CAT inspector, did not --

14 (Counsel for LILCO conferred.)

15 Q This has been a matter that has been referred
16 to NRR for NRR's consideration, isn't it?

17 A (WITNESS HUBBARD) Yes, it has. And I
18 discussed this with NRR last week. And the indication
19 they gave me is that they are going to support the
20 inspector and hold firm on this one.

21 Q Would you agree that this involves an
22 interpretation of IEEE 279 and Reg Guide 1.62?

23 (Pause.)

24 A (WITNESS HUBBARD) Mr. Ellis, I can't draw a
25 fine line on what is interpretation. It would seem to

1 me that it was not just a matter of interpretation.

2 Q Well, if it were a dispute over the
3 interpretation of IEEE 279 and Reg Guide 1.62, that
4 would be a technical or engineering matter and not a QA
5 matter, wouldn't it?

6 A (WITNESS HUBBARD) No. If LILCO wants to have
7 an interpretation and they have a way to put that in
8 front of the NRC in the form of the FSAR to say, this is
9 our interpretation. But rather they said, it meets the
10 reg guide. And the NRC's position is, as I understand
11 it, that it doesn't meet the reg guide.

12 Q Well, have you made an analysis, engineering
13 analysis, of this situation to make up your own mind
14 independently of whether there is an interpretive
15 dispute or whether the NRR is correct?

16 A (WITNESS HUBBARD) In this particular case, I
17 did read the FSAR. And in FSAR paragraph 7.3.2.1.2.19
18 it does state that the ECCS systems meet Reg Guide
19 1.62. And that is at page 7.3-69 of the FSAR.
20 Likewise, for the reactor building closed-loop cooling
21 water system at page 7.6-41, that does state that it
22 meets the reg guide.

23 Q No one ever doubted that?

24 A (WITNESS HUBBARD) Though there is even there
25 an error that the reference is to point 18 where it

1 really should be point 19. So the cross referencing at
2 page 7.6-41 is in error.

3 Q Mr. Hubbard, my question wasn't whether LILCO
4 stated that it met those, because that is clear that is
5 in the justifications and the FSAR. My question to you
6 was, did you independently do any analysis or
7 engineering evaluation to determine whether there is a
8 basis for an interpretive dispute?

9 A (WITNESS HUBBARD) The only analysis I did was
10 to discuss this with the NRR personnel who were
11 reviewing it to get an indication from them of whether
12 this was a matter of interpretation or in support of the
13 I&E finding. And the preliminary indication I got was
14 that the words mean what the words mean and this is not
15 a matter of interpretation.

16 (Counsel for LILCO conferred.)

17 A (WITNESS HUBBARD) And there is, Mr. Ellis, a
18 place to put interpretation in the FSAR. That is in the
19 section we were just looking at, 3.B, because each of
20 the reg guides are looked at there, and if there is an
21 interpretation that the applicant has, my understanding
22 is that that is the place where that interpretation is
23 set forth.

24 In this case, there is no such
25 interpretation. So there is a place to do it.

1 Q Well, assuming that there is a question of
2 interpretation and it is clear from the LILCO response
3 that LILCO believes it is in compliance with Reg Guide
4 1.62, that is clear, isn't it, from the response to the
5 CAT report, which is Suffolk County Exhibit 70 at page 6
6 and -- well, more directly, page 8 where it states that
7 the Shoreham design is in compliance with the guidance
8 provided in NRC Regulatory Guide 1.62 as described
9 above, so no corrective action is necessary? And that
10 is after a page and a half or more of discussion
11 concerning why LILCO believes that Reg Guide 1.62 is met?

12 A (WITNESS HUBBARD) LILCO's position is set out
13 in Suffolk County Exhibit 70. And my understanding is
14 that the NRC is not going to accept that interpretation.

15 Q I understand that is what your understanding
16 of the situation is. Whether or not you are right or
17 not, we will have to wait and see. But the point I am
18 trying to make is that reasonable people might differ on
19 something like this, isn't that right?

20 (Pause.)

21 A (WITNESS HUBBARD) I don't think this should
22 properly be characterized as just a matter of
23 interpretation. And even if it were a matter of
24 interpretation, there is a procedure, which is to use
25 the reg guide portion Appendix 3.B to talk about

1 interpretations. So it would seem to me that this is a
2 breakdown in the design control process.

3 Q Are you done, Mr. Hubbard?

4 A (WITNESS HUBBARD) Yes, sir.

5 Q Well, let me ask you directly, have you
6 conducted a review of the manual initiation and
7 automatic initiation aspects of the systems involved and
8 compared it with IEEE 279 and Reg Guide 1.62 for
9 Shoreham?

10 A (WITNESS HUBBARD) No, I have not, Mr. Ellis.
11 But it is not necessary.

12 Q In your opinion?

13 A (WITNESS HUBBARD) In my opinion. Yes.

14 Q So that the quality assurance problem you see
15 here is the failure of LILCO to insert its justification
16 in the FSAR, isn't that right?

17 A (WITNESS HUBBARD) Mr. Ellis, that would have
18 been one of the failures.

19 Q And that is --

20 (Counsel for LILCO conferred.)

21 Q Well, let me ask you hypothetically, Mr.
22 Hubbard, if LILCO believed that it was in compliance
23 with Reg Guide 1.62, then there would be no reason to
24 state an interpretation or to do something different in
25 the design drawings or instructions. Isn't that right?

1 A (WITNESS HUBBARD) No, because LILCO
2 acknowledges in the first part of the LILCO position
3 that, for example, the LPCI does not provide signals to
4 the RBCLCW system in the accident mode. So they know
5 that it doesn't do it. But then they have an
6 interpretation of why that is not required. And so
7 knowing that, that if they wanted their interpretation
8 to be accepted by NRC, then the place one would have
9 done that is to have flagged back in section 3.B. And
10 that is why I believe the NRC cited for violation of
11 Criteria 3.

12 Q But if the applicant, if LILCO thought that
13 was the correct interpretation or a reasonable
14 interpretation all along, there would be no need to
15 state it in Appendix 3.B, would there?

16 A (WITNESS HUBBARD) Yes, there would, because
17 it is clear that is an interpretation. It doesn't meet
18 the letter of IEEE 279.

19 (Counsel for LILCO conferred.)

20 Q Let's move ahead, Mr. Hubbard, to --

21 JUDGE BRENNER: Excuse me, Mr. Hubbard. Would
22 it affect your judgment to know how the Staff had
23 applied the reg guide previously to this situation, or
24 if they had addressed this particular question
25 previously in this situation with respect to other

1 plants?

2 WITNESS HUBBARD: It might in a minor way,
3 Judge Brenner. But it would seem to me that even if the
4 Staff were to accept the LILCO position, the LILCO
5 position should have been set forth earlier in the reg
6 guide section.

7 JUDGE BRENNER: I am addressing your point as
8 to whether it should have been set forth in that reg
9 guide section, that 3.B section. And in order to answer
10 that question, would it be pertinent to know whether the
11 Staff in the past had approved plants with the same
12 approach as Shoreham in this matter without noting any
13 departure from the reg guide?

14 WITNESS HUBBARD: I would think that would be
15 of some interest. But then you get into did they
16 knowingly do it or unknowingly do it, and when did they
17 first become aware of this?

18 JUDGE BRENNER: Who is "they" in your answer?

19 WITNESS HUBBARD: "They" is the Staff. That
20 becomes a complicated matter to talk about what
21 regulatory procedure has been in the past and what the
22 knowledge base was for that regulatory procedure.
23 Sometimes things have occurred but not because somebody
24 made a decision; he just plain didn't know, he hadn't
25 read the words carefully enough to understand what they

1 really meant but --

2 JUDGE BRENNER: That is part, is it not, of
3 reinforcing the view that it would be pertinent to
4 explore what the Staff might have done in the past in
5 order to address the question as to whether it was
6 reasonable on LILCO's part to make the interpretation
7 they made without any special explanation of it?

8 WITNESS HUBBARD: I think that might be
9 relevant, but I think still LILCO had a responsibility
10 if they wanted to cite something as an interpretation
11 and there is a place in the FSAR to put forth
12 interpretations of reg guides and standards.

13 JUDGE BRENNER: To some extent, that depends
14 as to whether at the time it would have been reasonable
15 to believe that there was another interpretation other
16 than LILCO's.

17 WITNESS HUBBARD: Well, I can see you have
18 some questions for the Staff, yes.

19 JUDGE BRENNER: Well, I am asking you because
20 you are the one who's concluding that this is a QA
21 problem. I may also have some questions of the Staff.

22 WITNESS HUBBARD: I conclude it is a QA
23 problem. First, it was picked by the Staff as a
24 violation. It was picked as a Severity 4 violation, so
25 they did give some significance to it. It is a

1 violation of a GDC -- not a GDC, but a regulatory
2 requirement IEEE 179 -- excuse me, 279, which is culled
3 out by the regulations as stated in the notice of
4 violation at 50.55.A paragraph H.

5 And so I would expect the FSAR to be pretty
6 clear about interpretations of 50.55.A.H. And I do not
7 share LILCO's view that this is only a matter of
8 interpretation.

9 JUDGE BRENNER: It would have been
10 unreasonable, in your view, for a professional in the
11 field to believe that Shoreham complied with the reg
12 guide, given the words of the reg guide? Is that your
13 testimony?

14 WITNESS HUBBARD: I can't really say that. I
15 can say -- and the reason I can't say it is I have not
16 gone back and reviewed the reg guide and reviewed the
17 whole history, as you mentioned. However, I do know
18 that this is one of the items that came out of the Three
19 Mile Island accident in '79. And so there has been
20 additional attention to this whole area of manual versus
21 automatic initiation. So in that context, this is one
22 that has had more interest, it has been more on the
23 front burners since '79 than maybe it was before.

24 But I think you're going to have to ask the
25 Staff some of the questions you have asked me. They

1 have the direct knowledge of what they have done in the
2 past and why.

3 JUDGE BRENNER: But don't you have to know the
4 answers yourself in order to conclude that this is a QA
5 breakdown as opposed to a question on which the Staff
6 and LILCO disagree and upon which you may well agree
7 with the Staff and upon which the Staff may well be
8 right as distinguished from a QA breakdown?

9 WITNESS HUBBARD: I think not, because the
10 finding is pretty clear that it says there is no
11 system-level manual initiation for the RBCLCW system.
12 That is contrary to the requirement. It is not an
13 interpretation. So the Staff findings are pretty clear
14 that there is no system-level manual initiation and does
15 not provide signals.

16 JUDGE BRENNER: Is that an accurate
17 description in LILCO's view, given LILCO's response as
18 to what manual initiation there is for those systems?

19 WITNESS HUBBARD: LILCO's response says what
20 the LILCO response says.

21 JUDGE BRENNER: Yes. But you just made a
22 statement as if those were the facts, and I am asking if
23 you conclude that those are the facts?

24 WITNESS HUBBARD: I think even LILCO concludes
25 those are the facts. They state that there are some

1 additional facts.

2 JUDGE BRENNER: We are probably at the point
3 you wanted to break, Mr. Ellis, unless you had one or
4 two quick questions you wanted to ask before we break.

5 MR. ELLIS: No, sir, we can break now.

6 JUDGE BRENNER: Do you need extra time? We
7 can give you an hour and three-quarters, if you want it.

8 MR. ELLIS: I would appreciate it, but I am
9 reluctant to ask for it. But, yes, we would like it.

10 JUDGE BRENNER: We will come back at 1:45.

11 (Whereupon, at 12:00 noon, the hearing was
12 recessed, to reconvene at 1:45 p.m., this same day.)

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1 AFTERNOON SESSION

2 [1:50 p.m.]

3 JUDGE BRENNER: Okay, we are ready to go back
4 on the record.

5 MR. ELLIS: Judge Brenner, we have made some
6 adjustments for the convenience of the Board and the
7 parties, and we will be able to move ahead rapidly. I
8 anticipate finishing sometime tomorrow. In addition, I
9 want to return to something that may or may not be one
10 point that we were discussing before lunch, and I am not
11 sure that I will be able to do it but I want to attempt
12 it, and then I will move on.

13 Whereupon,

14 RICHARD B. HUBBARD,
15 the witness on the stand at the time of recess, resumed
16 the stand and was examined and testified further as
17 follows:

18 CROSS EXAMINATION -- Resumed

19 BY MR. ELLIS:

20 Q Mr. Hubbard, in connection with the cable
21 separation issue, did you review the original FSAR to
22 determine whether the original FSAR disclosed to the NRC
23 that the separation distance was measured from the
24 bottom of the top tray to the bottom of the side rail of
25 the bottom tray?

1 A (WITNESS HUBBARD) Mr. Ellis, you said the
2 original FSAR. Do you mean Revision 0 of the FSAR?

3 Q Yes, sir.

4 A (WITNESS HUBBARD) I did not go back to
5 Revision 0 of the FSAR because when I received it, I
6 received it at some later revision. However, I would
7 think that the words we looked at this morning had been
8 in the FSAR for a number of years. My concern was not
9 with the words that were in the brackets in Chapter 3
10 but rather the lack of responsiveness in the answer and
11 223.12.

12 Q Well, your answer to my question, though, is
13 that you are not familiar with the original version, so
14 that if I showed you a copy you wouldn't be able to
15 recognize it -- a copy of a page from it, I'm sorry.

16 A (WITNESS HUBBARD) Well, I assume that if it
17 has no revision numbers on it --

18 Q Yes.

19 A (WITNESS HUBBARD) -- that would in general
20 mean that it has never changed. However, I don't know
21 that as a fact. Usually the pages that change during a
22 particular revision are noted.

23 Q All right, Mr. Hubbard, let's move ahead now
24 to what you have denominated as alleged breakdowns 27
25 and 28, which you called a violation of Criterion 3.

1 The NRC did not label this a violation of Criterion 3,
2 did it?

3 A (WITNESS HUBBARD) No, it is an unresolved
4 item, 82-04-07.

5 Q All right. And would it be fair to say that
6 you have conducted no review of the FSAR or any
7 engineering assessment of matters listed on pages 29 and
8 30 under QA/QC breakdowns 27 and 28?

9 A (WITNESS HUBBARD) I have not reviewed the
10 FSAR, and the only engineering analysis I have conducted
11 is to review the CAT report and the words in the CAT
12 report.

13 Q All right. Let's just look very briefly.

14 [Counsel for LILCO conferring.]

15 Let's look at the matter that you referred to
16 as the "inop" alarm being sounded when one loop of the
17 single RHR pump is operating. Well, let me restate
18 that. Let's look at the matter that you refer to
19 concerning the closure of a single RHR pump suction
20 valve giving or not giving an "inop" alarm. Are you
21 familiar with whether the Shoreham system gives any type
22 of indication under those circumstances?

23 A (WITNESS HUBBARD) No, I am not.

24 Q So you are not at all familiar with the
25 Shoreham system of degraded alarms rather than "inop"

1 alarms?

2 A (WITNESS HUBBARD) No, I am not.

3 [Counsel for NRC conferring.]

4 Q If the NRC closes this matter out on the basis
5 of the explanation given by LILCO, assuming there is a
6 degraded alarm, would you agree with me then that there
7 is no violation of Criterion 3?

8 A (WITNESS HUBBARD) Not necessarily.

9 Q It might be or it might not be, is that right?

10 A (WITNESS HUBBARD) Yes.

11 Q Mr. Hubbard, let's move on. Let's go to page
12 31, at the bottom of page 30 and the top of page 31. As
13 I understand your testimony there, you are contending
14 that Criterion 16 is violated because the matter that
15 you have denominated QA/QC Breakdown 29 relating to the
16 configuration of penetrations X43 and XS-5 is
17 essentially the same as or similar to -- you call it a
18 similar situation to an I&E finding relating to the
19 location of containment isolation valves.

20 A (WITNESS HUBBARD) I can understand your
21 confusion, Mr. Ellis. That sentence is not well
22 written. There are really two thoughts. The first
23 paragraph and the quote having to do with failure to
24 meet design criteria, and the second paragraph having to
25 do with similar have to do with another matter, which is

1 the matter of as close as practicable to the
2 containment. So the first paragraph and the quote go to
3 meeting the general design criterion in terms of the two
4 check valves, and the second paragraph, though it is not
5 written the way it should be written, has to do with
6 locating CIVs as close as practical to containment.

7 Q I see. So there are the two matters that you
8 are saying are not related to one another. The
9 "similar" should be stricken; is that what you are
10 saying?

11 A (WITNESS HUBBARD) The "similar," Mr. Ellis,
12 should have been stated that CIVs not located as close
13 as practical to containment was found by CAT and that is
14 similar to a previous finding that was 81-02-01. And to
15 help you out on that, at the bottom of page 4-27, the
16 CAT inspector says the inspector did note that the
17 licensee had not yet resolved the previous violation,
18 and that was 81-02-01. This violation cited a situation
19 where CIVs were not located as close as practical to
20 containment, and then some RHR systems, CIVs are located
21 similarly.

22 [Counsel for LILCO conferring.]

23 Q I see. So you are citing Criterion 16 there
24 because in your view the matter of whether CIVs were
25 located as close as practical to containment has not

1 been resolved as promptly as you think it should have
2 been? Is that the reason for your citing Criterion 16?

3 A Yes, sir.

4 [Counsel for LILCO conferring.]

5 Q Are you aware of the NRC review and
6 consideration and discussion with LILCO on the matter of
7 the location of containment isolation valves?

8 A (WITNESS HUBBARD) I am generally familiar
9 with that, yes, Mr. Ellis, and I am familiar with the
10 recent letter from Mr. Pollock to the NRC. That is the
11 latest one I can recall, around October or so.

12 Q Are you familiar with the new studies relating
13 to CIVs at Shoreham?

14 A (WITNESS HUBBARD) I am not familiar with
15 studies in the sense of a study that I can recall being
16 docketed. I can recall information being provided about
17 how far certain CIVs were from containment, so there has
18 been some gathering of information. I wouldn't call it
19 a study, necessarily.

20 Q Isn't the proximity of CIVs to containment a
21 matter of engineering judgment and that there are no
22 specific distances provided by the regulations?

23 A (WITNESS HUBBARD) Well, the regulations are
24 GDC 55, 56 and 57, correct? These are the regulations
25 you are referring to?

1 Q Would you like me to repeat my question?

2 A (WITNESS HUBBARD) The regulations, I believe,
3 Mr. Ellis, say as close as practicable. I will get the
4 words out.

5 Q That is not necessary for my purposes, but
6 feel free to do so if you wish. My question asked you
7 whether the location of containment isolation valves,
8 the proximity of those to the containment was a matter
9 of engineering judgment and analysis and that no
10 specific distances are provided by the regulations;
11 isn't that correct?

12 A (WITNESS HUBBARD) You are correct that no
13 specific distances are provided and that the regulations
14 do use the word "as close to the containment as
15 practical."

16 Q The first part of my question was whether you
17 also agreed that the proximity of the CIVs to the
18 containment was a matter of engineering judgment and
19 analysis.

20 A (WITNESS HUBBARD) Yes, to a degree.

21 Q Well, if the NRC accepts the judgments made by
22 LILCO in connection with the placement of CIVs, would
23 you agree with me that Criterion 16 would not be
24 applicable?

25 A (WITNESS HUBBARD) Partially, yes. I still

1 feel that this is very late in the construction cycle to
2 be resolving this matter.

3 Q Mr. Hubbard, let's move ahead. On pages 40
4 and 41 of your testimony -- oh, I'm sorry. I was unduly
5 optimistic. Page 33 of your testimony. You have listed
6 there as a QA/QC Breakdown 32 the matter relating to
7 copper-nickel carbon steel bolts and nuts, and you state
8 down just prior to the quote from the CAT report, you
9 state that the inspector reviewed licensee actions to
10 replace corroded bolts and to prevent recurrence, and
11 concluded that -- and then you begin the quote, saying
12 "there was not an adequate program to identify and
13 replace."

14 Now, isn't it correct that that is not exactly
15 what the inspector said in his report? The inspector
16 didn't conclude that there was not an adequate program,
17 did he? He expressed concern.

18 A (WITNESS HUBBARD) Mr. Ellis, if you turn to
19 page 4-30 of the CAT report, there is the bottom
20 paragraph which I think presents the LILCO view.

21 Q Well, wouldn't you be more accurate to state
22 that it represents the inspector's idea of the LILCO
23 view at that time?

24 A (WITNESS HUBBARD) Yes.

25 Q Okay, go ahead.

1 A (WITNESS HUBBARD) That is correct, Mr.
2 Ellis. So that this paragraph says or states the
3 inspector's view of what LILCO was doing, and it states
4 from the inspector's point of view that the inspector
5 was concerned that the replacements might be done on
6 selective flanges only. It also presents his
7 understanding that LILCO thought or that LILCO was aware
8 of the corrosion problems and that there was still the
9 ASME certification and that the bolts and nuts on the
10 flanges were temporary. That was, I believe, his
11 understanding of the LILCO view.

12 And then the paragraph I used was that which I
13 felt that he concluded, then, after hearing the LILCO
14 explanation, that there was not an adequate program to
15 replace all, and that the corrective action to
16 date -- and that "all" dates back to the preceding
17 paragraph where it seemed to imply that the inspector
18 thought it was going to be some, not all -- and that the
19 corrective action to date had not involved appropriate
20 levels of management, and that he had a question about
21 whether it should have been reported to the NRC, which
22 also is broadly within Criteria 16 of the reporting of
23 significant conditions adverse to quality.

24 Q But the statement that precedes the language
25 that you quoted on page 33 says that the inspector

1 expressed concern, doesn't it?

2 A (WITNESS HUBBARD) On page 4-30, the bottom
3 paragraph, the words are "the inspector expressed
4 concern," yes.

5 Q No, those words there, Mr. Hubbard, reflect
6 the inspector's concern that only bolts and nuts
7 corroded substantially would be replaced and that this
8 might be done on selected flanges only. What I am
9 referring you to is that you on page 33 of your
10 testimony elected to quote from the top of page 4-31 and
11 characterize it as the conclusion, and that is where the
12 inspector again says he expressed concern; isn't that
13 right?

14 A (WITNESS HUBBARD) Yes, sir. And you could
15 change the word "concluded that" to "expressed concern
16 that."

17 Q All right. You are aware, aren't you, that
18 the LILCO response makes clear that the problem had
19 previously been identified by LILCO and that a program
20 is presently under way which entails inspection of
21 flange joints and verification that the correct bolting
22 material has been installed, and I will direct your
23 attention to page 21 of the LILCO response, Suffolk
24 County No. 70.

25 [Pause.]

1 A (WITNESS HUBBARD) Mr. Ellis, excuse me. I
2 have found the LILCO corrective action on page 21, but
3 I'm not sure what your question was about that.

4 Q Well, my question was just to get you to
5 confirm that in fact this potential problem had been
6 previously identified by LILCO prior to the CAT
7 inspection and that a program was presently under way
8 entailing inspection of flange joints and verification
9 that the correct bolting material has been installed.

10 A (WITNESS HUBBARD) No. What I read this to
11 say, Mr. Ellis, is that the potential problem had been
12 previously identified by LILCO, that is, previous to
13 CAT, and I believe that is consistent with the CAT
14 report. And a program is presently under way. That
15 would seem to be a new thought after CAT, that there now
16 is a program which is under way.

17 Q Well, do you also interpret the specification
18 addended in the response by E&DCR number given there, I
19 think it is F25-229C, to have been done after the CAT
20 inspection?

21 A (WITNESS HUBBARD) No. That looks like a
22 pretty early number. Assuming that they were done in
23 order, that looks like one from a previous year,
24 previous to 1982.

25 [Counsel for LILCO conferring.]

1 Q You don't know one way or the other whether
2 the program that is referred to in the response was
3 planned or implemented prior to the CAT inspection?

4 A (WITNESS HUBBARD) I don't know for sure, Mr.
5 Ellis, but my judgment would be that if there was a
6 program that was already in place that was addressed,
7 then the IE inspector would not have stated his concern
8 that this replacement might be done on selected flanges
9 only.

10 Q That is, unless he was not presented with the
11 program at the time that he was on site with this
12 inspection; isn't that right?

13 A (WITNESS HUBBARD) That is correct. However,
14 in other parts of the CAT report it does talk about
15 things that were being in change. For example, at 4-29,
16 in the paragraph before the bottom paragraph it talks
17 about the inspector looked at an FSAR change that was in
18 process. Also, at, oh, 4-34, the next to the bottom
19 paragraph, that talks about looking at selected
20 isometrics and approved E&DCRs, and as a matter of fact,
21 if one goes all the way back to 4-15 where it talks
22 about the inspector again, in the paragraph 3.1.1, in
23 the middle of that it talks about how the inspector
24 compared the installed components to the drawings as
25 modified by E&DCRs, and there are other references to

1 E&DCRs as modifying drawings.

2 So I think the inspector took into account
3 what was going on. For example, there is another
4 example of that on page 4-39 on the leakage return
5 system.

6 MR. ELLIS: Judge Brenner, I don't think this
7 is responsive to my question.

8 WITNESS HUBBARD: That there was an item of
9 pressure indicator.

10 JUDGE BRENNER: Wait a minute, Mr. Hubbard. I
11 don't remember the question any more, to be honest with
12 you.

13 MR. ELLIS: I asked him whether he knew
14 whether the inspector had been presented with this
15 particular program.

16 JUDGE BRENNER: I am going to allow him to
17 complete the answer. The answer is he doesn't know.
18 But once you ask him whether he knows things about what
19 the NRC inspector knew, I am going to give him leeway to
20 apply his judgment as to why he thinks what he does, and
21 you might consider whether we are wasting time asking
22 this witness whether he knows certain things once you
23 establish what his knowledge is, I would certainly
24 invite you to ask up until the point of establishing his
25 knowledge.

1 But go ahead and finish up, Mr. Hubbard, as to
2 what you think the inspector took into account as part
3 of your judgment of what the inspector had in mind. One
4 of these days we are going to find out very efficiently
5 what the inspector had in mind, I presume.

6 WITNESS HUBBARD: Well, the last indication I
7 had of what the inspector had taken into account was on
8 page 4-39 in the top paragraph, the second item. It
9 says pressure indicator 640C had been removed for work
10 and so it looks to me like the inspector did write down
11 if he saw things were removed for some reason or an
12 E&DCR was attached to a drawing or things of that
13 nature, he tried to take that into account if that
14 information was presented to him.

15 JUDGE BRENNER: Well, would you admit that
16 that is kind of a little remote in terms of trying to
17 figure out what the inspector had in mind on the item
18 you were asked about? It is not a real strong
19 indication one way or the other as to the item you were
20 asked about, is it?

21 WITNESS HUBBARD: That is, I guess, where you
22 and I disagree; that there have been questions
23 repeatedly about what did the NRC inspector take into
24 account, and I think a careful reading of the CAT report
25 shows that the inspector took account of FSAR changes in

1 process when they were presented to him, he took into
2 account the E&DCRs, he took into account that something
3 was tagged out of service.

4 Judge Brenner, I think the NRC, the record
5 shows the NRC inspector tried to take account of
6 everything that was relevant. That is what my reading
7 of CAT would say, and that was somewhat spurred on by
8 some of your questions and Mr. Ellis'.

9 JUDGE BRENNER: Well, I won't get into a
10 discussion with you as to whether the inspector's
11 consistency is such that it can be termed "habit" and
12 therefore applied to everything else, but I understand
13 your reasoning now. Suffice it to say I am not going to
14 rely upon what you said -- I want you to know this, and
15 I think you would agree with me, in fact -- as direct
16 evidence of what the inspector had in mind. It is
17 helpful in terms of understanding your thinking on the
18 point, and someday we will find out more directly, as I
19 have said a number of times.

20 [Counsel for LILCO conferring.]

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1 BY MR. ELLIS: (Resuming)

2 Q Mr. Hubbard, your conclusion that the
3 corrective action measures are inadequate under
4 Criterion 16, would that conclusion be changed if the
5 NRC accepted the LILCO response?

6 A (WITNESS HUBBARD) No. And the reason for
7 that is that the LILCO response has come after the CAT
8 observation by the inspector.

9 (Counsel for LILCO conferring.)

10 A (WITNESS HUBBARD) A further explanation might
11 be that the corrective action, as outlined by LILCO now,
12 appears to be adequate to me; so I think the corrective
13 action -- well, I think the corrective action now is
14 adequate. But the question was would LILCO have taken
15 that corrective action without the spur of the CAT
16 inspector.

17 Q Do you know whether in fact the LILCO response
18 has been accepted by the NRC?

19 A (WITNESS HUBBARD) Yes, it has been accepted
20 by the NRC in the November 4th letter, Mr. Ellis. And I
21 assume it would still be reviewed by I&E to see that in
22 fact it has been implemented. It hasn't been closed out
23 as an I&E observation yet.

24 Q Mr. Hubbard, let's move ahead now to page 36
25 and 37 of your testimony where you cite the as-built

1 program as being incomplete at the time of the CAT
2 inspection according to the CAT inspector, as being a
3 violation of Criteria 2, 3, 5 and 6. The CAT inspector
4 did not so find, did he?

5 A (WITNESS HUBBARD) No, he did not.

6 Q Now, your position is that the as-built
7 program at Shoreham was not established at the earliest
8 practicable time, as you state on page 37 of your
9 testimony, isn't that right?

10 A (WITNESS HUBBARD) Yes.

11 Q It is fair to say, isn't it, that in order to
12 do an as-built you have to wait until the plant is
13 virtually built, don't you?

14 A (WITNESS HUBBARD) No.

15 Q Do you have any firsthand experience in
16 determining when as-built programs should be implemented
17 on the construction of nuclear power plants?

18 A (WITNESS HUBBARD) No. However, I think that
19 you are always inspecting a plant to drawing, so you are
20 always verifying that the plant is built to the
21 drawings. That is a continuing process.

22 (Counsel for LILCO conferring.)

23 Q Well, when you just answered my question you
24 indicated that there should be continuous inspections to
25 see if the plant is being built in accordance with the

1 construction drawings. Is that -- this continuous
2 process, is that your understanding of the term
3 "as-built program?"

4 A (WITNESS HUBBARD) If the plant were built to
5 the drawing throughout the time that complete
6 construction, both electrical and mechanical, then one
7 would not need much of an as-built verification program
8 at the end of the process in my judgment.

9 Q But that is not -- this continuous process of
10 checking is not what is meant by "as-built" in this
11 instance, is it, Mr. Hubbard?

12 A (WITNESS HUBBARD) I think it is, Mr. Ellis.

13 JUDGE BRENNER: Mr. Hubbard, is it your
14 testimony that the NRC inspectors on this item
15 criticized or cited or use whatever words you want
16 without getting into the technical enforcement jargon,
17 LILCO for failing to develop a program to compile the
18 as-built information by a time when the inspector found
19 that that program should have been developed and the
20 as-built information compiled?

21 Is that what the CAT inspection report says,
22 starting at page 29 to 30 of the CAT inspection, because
23 that is what your heading says or implies on page 36 of
24 your testimony.

25 (Pause.)

1 WITNESS HUBBARD: What was your question
2 again, Judge Brenner?

3 JUDGE BRENNER: I will have it read back.

4 (The Reporter read the record as requested.)

5 WITNESS HUBBARD: Judge Brenner, I think the
6 CAT finding is that the as-built program was incomplete,
7 and my finding, which is the top heading of QA/QC
8 Breakdown 39, is that I would have expected that by this
9 point in time the as-built program would have been
10 developed, plus --

11 JUDGE BRENNER: But did the NRC inspector make
12 that finding?

13 WITNESS HUBBARD: Judge Brenner, as I said
14 before, the NRC inspector in the third paragraph on page
15 30 found that the program was still incomplete for
16 mechanical, and in the electrical area he found that he
17 didn't -- his last sentence -- he didn't even inspect it
18 because of the incomplete status. That is what the NRC
19 inspector found.

20 I admittedly departed from the NRC inspector's
21 point of view and said in my judgment if you had a
22 timely QA program, the as-built program would have been
23 established by this point in time. We're talking about
24 February when we were talking about September fuel load.

25 JUDGE BRENNER: My problem is when you take

1 those excerpts coupled with your heading on page 36 and
2 the quotations under that heading, and in your testimony
3 and indeed in the excerpts you orally just took from the
4 CAT inspection, that implies very directly that the NRC
5 inspector in stating what he stated, that the program
6 was incomplete, was making a judgmental adverse finding;
7 that is, stating that it is incomplete in a pejorative
8 sense as distinguished from a factual report of the
9 status and assigning the item a number so that he could
10 follow up on it when the status is appropriate for
11 followup.

12 And those are two very different things, and
13 it appears to me that the NRC inspector -- you are free
14 to disagree with the NRC inspector -- but it appears to
15 me the NRC inspector is merely taking the latter course
16 and not making any adverse findings or pejorative
17 statements in using the word "incomplete" contrary to
18 your heading which uses the word "failure." And that is
19 my problem.

20 WITNESS HUBBARD: Well, I could understand
21 your problem because you have to have a context, I
22 guess, for how I made my judgment; that at the March
23 meeting that LILCO made a presentation to Mr. Denton on
24 March 15. They presented -- "they" being LILCO --
25 presented the eight additional programs they were doing,

1 including the as-built piping and the various
2 electrical, the CABTRAP and CABRAP and all of that --
3 well, the eight additional programs.

4 I looked and thought well, why would all of
5 these additional programs be going on late in the
6 construction cycle to somehow get agreement between what
7 was built and what was on the drawings. And my judgment
8 is that one of the reasons that this is going on late in
9 the cycle, admittedly a good program, but it is going on
10 late in the cycle because earlier in the cycle there was
11 a lack of control.

12 Now, that is my judgment.

13 JUDGE BRENNER: Do you agree with me that a
14 reasonable reader could infer from your testimony that
15 what you are talking about is the NRC inspector's
16 judgment rather than your own judgment, starting in item
17 IV.A.17 in your testimony due to the way you've
18 juxtaposed your statements and the heading and the
19 excerpts from quotations from the CAT report?

20 WITNESS HUBBARD: Judge Brenner, if that were
21 to be misinterpreted, that was not my intent, and that
22 is why I included the entire CAT inspection as an
23 exhibit. I mean the CAT inspection says what it says,
24 and I drew my own inferences which, as you have noted,
25 in many cases are different from what the NRC drew from

1 the same data.

2 But at no time -- and that is why I included
3 the entire CAT report so there is no question about what
4 it said.

5 JUDGE BRENNER: Well, I personally, speaking
6 for myself, have a problem on this item with the way you
7 presented the factual reporting of what is in the
8 inspection report as distinguished from drawing
9 different judgments once you have agreed on the factual
10 reporting made by the NRC inspector. And I will just
11 leave it at that.

12 BY MR. ELLIS: (Resuming)

13 Q Mr. Hubbard, let me just follow up on one
14 item. It is fair to say, isn't it, that you did not
15 draw your conclusions from the same data that the
16 inspector drew his conclusions from? You drew your
17 conclusions from what the inspector said. You didn't
18 see the data he did.

19 A (WITNESS HUBBARD) Mr. Ellis, there seem to be
20 multiple parts to that. I will try to make sure I
21 answer it.

22 I did not see the data that the inspector
23 relied upon, but I think I relied on some data that the
24 inspector also may not have seen; that I attended the
25 March 15th meeting where these additional programs were

1 discussed, and I also obtained through discovery the
2 progress reports plus the program reports for these
3 eight additional programs.

4 So part of my judgment here on QA/QC Breakdown
5 39 was this additional information that I had received
6 from what is documented in the CAT report. So I put
7 them all together.

8 Q Mr. Hubbard, let's move on to page 39 where
9 you list a matter as a breakdown regarding adequate
10 technical specifications. The technical specifications
11 are not final at this time or at the time of the CAT
12 inspection, isn't that right?

13 A (WITNESS HUBBARD) That is correct, Mr.
14 Ellis. The record should be clear that these are the
15 proposed technical specifications.

16 Q And there is not a requirement that every
17 system be included in the tech specs, isn't that right?

18 A (WITNESS HUBBARD) That is correct, Mr. Ellis.

19 Q And it is also correct, isn't it, that what is
20 ultimately put in the tech specs is a matter of
21 discussion and negotiation between the applicant and the
22 staff and is a matter of judgment.

23 A (WITNESS HUBBARD) That is correct. And there
24 are standard technical specifications for the GE BWRs
25 also that are used.

1 Q Well, you will agree with me that the matters
2 referred to in your paragraphs a) and b) on pages 39 and
3 40 are not the matters that are in the standard GE BWR
4 tech specs, are they?

5 (Pause.)

6 A (WITNESS HUBBARD) I am not familiar, Mr.
7 Ellis, with whether the systems are in the standard GE
8 tech specs. This particular item was addressed in a
9 followup NRC inspection 82-23.

10 (Counsel for LILCO conferring.)

11 A (WITNESS HUBBARD) And, for example, at that
12 time the dry well floor seal pressurization was included
13 in the Shoreham technical specs at that time.

14 Q What time are you referring to?

15 A (WITNESS HUBBARD) This was an I&E Report
16 82-23. That was September 16th, and it was a followup
17 to an unresolved item 80-09-01 which had to do with
18 containment system tech spec requirements. And that
19 talks about the latest draft of the Shoreham tech specs,
20 included a limiting condition for operation and
21 surveillance requirements of the dry well floor seal
22 pressurization system. That is one of the ones listed
23 in item a), Breakdowns 41 and 42.

24 Q Doesn't the fact that appears there, isn't
25 that a reflection of the fact that the tech spec

1 formulation process involves the addition and refinement
2 of provisions as time goes by?

3 A (WITNESS HUBBARD) I think that is true, Mr.
4 Ellis. I don't have a big disagreement with that. I
5 think in hindsight I would have left this one out,
6 particularly the Part A. The Part B I think is possibly
7 a little bit different where some of the list was not
8 accurate. But I think in general when I saw this I
9 thought well, there is some concern about the accuracy
10 of the tech spec. In hindsight I think maybe I am less
11 concerned about it.

12 (Counsel for LILCO conferring.)

13 Q All right, Mr. Hubbard. So that we are clear
14 with respect to that item on the technical specs, the
15 CAT inspector did not find that to be a violation of
16 Appendix B, did he?

17 A (WITNESS HUBBARD) No, he did not. That was
18 listed as unresolved item number 82-04-15.

19 Q And so that we are also clear, the NRC CAT
20 inspector did not use the term "QA/QC breakdowns," did
21 he?

22 A (WITNESS HUBBARD) No. He said that the
23 discrepancies in the proposed technical specifications
24 regarding safety-related snubbers and the apparent
25 omission of tech specs for plant unique systems are

1 considered a weakness and are assigned item number
2 322/82-04-15.

3 Q And, indeed, with respect to the entire CAT
4 report, the term "QA/QC breakdown" is never used by the
5 CAT inspector, is it?

6 A (WITNESS HUBBARD) To the best of my knowledge
7 that term is not used, Mr. Ellis.

8 Q Mr. Hubbard, the CAT inspector did find four
9 violations, four deviations and eight -- I'm sorry --
10 eight deviations and four observations. Now, in order
11 to reach that conclusion is it apparent to you from the
12 CAT report that the inspector made an attempt to assess
13 a number of factors concerning the findings that he made?

14 MR. LANPHER: I object to that question. I
15 just don't understand it. It is vague. Did he attempt
16 to assess a number of factors -- I really don't know
17 what he's referring to.

18 MR. ELLIS: Let me restate the question.

19 JUDGE BRENNER: It is vague. I know where
20 you're going, and I think Mr. Lanpher knows where you're
21 going. But he is also correct that it should be
22 expressed on the record even if those of us here are
23 with you.

24 BY MR. ELLIS: (Resuming)

25 Q Mr. Hubbard, you will agree with me, won't

1 you, that in order for I&E to have made a judgment
2 concerning the significance of the various findings that
3 it considered a number of factors, including the
4 engineering significance of the items. Do you agree
5 with that?

6 A (WITNESS HUBBARD) I don't know what the NRC
7 evaluated in citing significance. For example, at page
8 4-13 where there is a summary of inspection results,
9 they do use the word "significant" in the first
10 paragraph where they talk about deviations from FSAR.
11 They say what they thought were the more significant of
12 those.

13 Q They list just two there, don't they?

14 A (WITNESS HUBBARD) Those were the two that --
15 yes, Mr. Ellis.

16 Q Well, is it your testimony that all of these
17 items, with the exception of the tech spec 1 that you
18 have just had second thoughts about, that all of these
19 items you've listed as QA/QC breakdowns are major?

20 A (WITNESS HUBBARD) I hesitate to use the word
21 "major." It would seem to me that you have to take all
22 of this together, and taking it all together I would
23 conclude that altogether these represent important
24 information about how the QA/QC program operated.

25 Q Well, you say you hesitate to use the word

1 "major" because you think they collectively provide
2 important information. You didn't hesitate to use the
3 word "major" on page 41 of your prefiled testimony,
4 though, did you, Mr. Hubbard, where you state, "Rather,
5 the evidence is clear that there have been major QA/QC
6 breakdowns." And the reference there, if you will look
7 up above, is to the preceding 43 examples of recently
8 discovered QA/QC breakdowns.

9 A (WITNESS HUBBARD) In the context, Mr. Ellis,
10 I was using "major" there. It is major when you look at
11 the preceding 43 examples. I didn't say there has been
12 a major QA/QC breakdown. I said there have been major
13 QA/QC breakdowns.

14 Q And you think that those 43 alone demonstrate
15 that, don't you?

16 A (WITNESS HUBBARD) Well, no. Turning on to
17 page 42, the first paragraph, I say that the 43 involve
18 basically the RHR system plus the auxiliary and
19 supporting systems for that. And then I conclude that
20 the breakdowns identified by CAT and then the others in
21 the I&E reports in Attachments 2 and 5, that you put
22 this all together, and it seems to me that there is
23 evidence of a breakdown in the Shoreham QA/QC program
24 implementation.

25 Q So by themselves they are not probative then,

1 is that what you are saying? Strike that.

2 By themselves they are not QA/QC breakdowns or
3 show that the program did not comply with Appendix B.

4 A (WITNESS HUBBARD) I wouldn't say that, Mr.
5 Ellis. That, for example, the two different violations
6 of general design criteria, if I were -- I would say
7 what would I as a QA/QC manager expect then. I would
8 say well, we looked at one system, the RHR, and its
9 supporting systems. And we found -- "we" being the NRC
10 in this case -- found two GDC, that there was apparently
11 a lack of conformance. There are two parts in the
12 regulations -- the IEEE 279 and the GDC.

13 And I would say based upon that if I were to
14 go look at the other 30 safety systems, I would be
15 fairly confident I would find other places where the
16 GDCs were violated or at least there was an
17 interpretation problem with LILCO. And that is really
18 what I would like at CAT, that if you look at the total
19 of these 40 some examples, what does that tell me about
20 the rest of the plant. And it would tell me that there
21 is a potential for problems in other areas of the plant
22 that have not been looked at by something like CAT.

23 Q Well, Mr. Hubbard, what I want to know is
24 whether it is your position that looking at what you've
25 listed as 1 through 43 by themselves is sufficient to

1 enable you to conclude that the LILCO program did not
2 comply with Appenix B.

3 A (WITNESS HUBBARD) My conclusions, Mr. Ellis,
4 on page 44, and my bottom line conclusion is that all of
5 the things in CAT and the I&E reports lead me to believe
6 that there is substantial doubt concerning the actual
7 quality achieved. And that is why I recommended that
8 there be an independent design review and physical
9 inspection.

10 Q I understand that. You said that more than
11 once now, Mr. Hubbard. My question was -- and perhaps I
12 ought to have it read back.

13 (The Reporter read the record as requested.)

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1 WITNESS HUBBARD: Yes.

2 (Counsel for LILCO conferred.)

3 BY MR. ELLIS: (Resuming)

4 Q Mr. Hubbard, you stated in your testimony that
5 because of your view of the status of the LILCO manuals,
6 QA Manuals, that you did not review them in preparation
7 for your prefiled testimony. Do you recall that?

8 A (WITNESS HUBBARD) Yes, Mr. Ellis. This was
9 -- that is not an accurate statement, that I didn't
10 review them. The testimony says, and we're talking
11 about operating QA now and not design and construction.

12 Q Well, let me just ask you directly. Have you
13 reviewed in detail prior to the preparation of your
14 written testimony the LILCO and Stone and Webster
15 construction QA Manuals?

16 A (WITNESS HUBBARD) I don't know what you mean
17 by "in detail." However, I did obtain and read over the
18 Shoreham or the LILCO and the Stone and Webster QA
19 Manuals prior to writing this testimony, the ones for
20 design and construction. But the emphasis on my
21 testimony was not on were there manuals because every
22 plant I have been to has had a stack of manuals a foot
23 high. The real thing I was concerned about was were the
24 things in the manuals implemented. And so what I have
25 tried to do in my testimony is go on design and

1 construction to focus on implementation.

2 And there is another reason for that, that
3 basically in an operating license hearing I didn't think
4 the Board wanted testimony to say that the design and
5 construction manual was inadequate, that the program was
6 already approved at the PSAR stage.

7 (Counsel for LILCO conferred.)

8 MR. ELLIS: Judge Brenner, we propose to move
9 on beyond the CAT inspection at this time. Whatever the
10 Board wishes, I am prepared to go ahead if that is what
11 the Board wishes.

12 (The Board conferred.)

13 JUDGE BRENNER: We will let you proceed.

14 WITNESS HUBBARD: Judge Brenner, it would be
15 helpful to me to have a break in about no more than
16 about 10 minutes, if that would be helpful.

17 JUDGE BRENNER: That is about when we were
18 planning on. Why don't you pick a convenient point at
19 about 3:15, Mr. Ellis?

20 MR. ELLIS: Yes, sir. One thing I would like
21 to do now, Judge Brenner, is not on my list, but I think
22 it would be appropriate to do it before the break.

23 BY MR. ELLIS: (Resuming)

24 Q Mr. Hubbard, would you look, please, at pages
25 55 and 56 of your testimony? And look also at pages

1 4-10 and 4-11 of an MHB report dated April 1980,
2 entitled "Improving the Safety of LWR Power Plants," and
3 confirm for me, if you would, please, that there is a
4 verbatim extraction of language from that report to your
5 testimony in 1982?

6 JUDGE BRENNER: Could you give me the page
7 reference in the testimony again, Mr. Ellis?

8 MR. ELLIS: Yes, sir. It is 55 and 56.

9 WITNESS HUBBARD: Mr. Ellis, I am at 55 and 56.

10 MR. ELLIS: Yes. Then it goes over to 57, too.

11 BY MR. ELLIS: (Resuming)

12 Q Let me be specific to help you, Mr. Hubbard.
13 Beginning where it says "In partial response," down to
14 the term "nuclear reactors" at the end of the first
15 paragraph. Do you see that? That paragraph in your
16 testimony on page 55 is directly from the references I
17 gave you to that MHB report, isn't it? That is on 4-10.

18 A (WITNESS HUBBARD) Yes. That is the same
19 paragraph with the addition of the deficiencies in the
20 I&E program are not new concerns. I wrote the one in
21 the MHB report, and I wrote this.

22 Q Now look down at the next paragraph, the
23 Sandia studies final report. Do you see that paragraph
24 beginning on the bottom of page 55 and going over to 56
25 and going over to the word "ultrasonic test data"?

1 A (WITNESS HUBBARD) That is correct.

2 Q That comes from 4-11, doesn't it?

3 A (WITNESS HUBBARD) It doesn't come from 4-11,
4 but it is consistent with page 4-11.

5 Q Well, I mean the words are the same, aren't
6 they?

7 A (WITNESS HUBBARD) You used the word where it
8 came from, and it is the same, yes.

9 Q Are you saying that the words in the MHB study
10 also came from yet another source, another report?

11 A (WITNESS HUBBARD) Well, I don't know, Mr.
12 Ellis. I wrote the words in the MHB report, and it is a
13 description I have used for some period of time to say
14 what the Sandia report is and why the Sandia report was
15 done.

16 Q Well, in any event, the words are the same,
17 aren't they?

18 A (WITNESS HUBBARD) The words are the same.

19 Q Now look down at the paragraph on the GAO
20 study that says, "In 1978" through the quote that ends
21 on page 57.

22 A (WITNESS HUBBARD) What is the question?

23 Q That also comes from, I believe, 4-11, doesn't
24 it, with the exception of the statement that you have
25 got on the bottom of page 56 indicating, "which may

1 result in QA deficiencies going undetected." Is that
2 right?

3 A (WITNESS HUBBARD) That is right. I added
4 those words, and I used the same quote from the GAO
5 report, and I wrote what is in the MHB report, and I
6 wrote this. And I am talking about the same thing.

7 MR. ELLIS: Judge, we would like to renew our
8 request to be advised of other areas where testimony may
9 have come from another source either written by Mr.
10 Hubbard or not.

11 JUDGE BRENNER: You're going to have to remind
12 me of the transcript reference, if necessary, and also
13 to update me as to what occurred off the record pursuant
14 to our direction that certain things occurred since this
15 matter was last discussed last week.

16 MR. ELLIS: I am delinquent in that respect
17 because they did not occur off the record, and I will do
18 that at the break.

19 JUDGE BRENNER: Is my recollection correct
20 that I told the parties to talk about it?

21 MR. ELLIS: That is correct. And I am
22 delinquent in that respect.

23 JUDGE BRENNER: Well, if this is going to come
24 back before us, we want the transcript reference to when
25 it came up. And I think there are at least two perhaps

1 and also what transpired in terms of the parties'
2 discussions with each other and why they failed to reach
3 an accommodation for each other, given the things we
4 said on the record for guidance.

5 Why don't we take a break at this point and
6 come back at 3:30.

7 (Whereupon, the hearing was recessed, to
8 reconvene at 3:30 p.m., this same day.)

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1 JUDGE BRENNER: Tomorrow we are supposed to
2 receive the report of the parties on the agreement or
3 the divergent position, if they are divergent, on the
4 scheduling of the testimony on the contentions which we
5 had deferred due to the still-ongoing Staff review. Are
6 we going to be able to receive a written report on that
7 the first thing in the morning or at the end of the day
8 today?

9 MR. LANPHER: My understanding, Judge Brenner,
10 is that meetings are going on on that right now. And I
11 don't know, I don't think our people are contemplating a
12 written report. I suppose we could get a call in to the
13 people if -- I didn't understand that that is what you
14 wanted.

15 JUDGE BRENNER: I don't remember how I left
16 it. My recollection is vague at this point.

17 MR. LANPHER: I was planning to be talking
18 with the people, and I am sure Mr. Ellis, too, after we
19 adjourn today.

20 JUDGE BRENNER: I think it would be helpful to
21 the Board to get a written report as early as possible
22 tomorrow morning, and we will hold off discussing it
23 until we have had a chance to read it. But we will be
24 prepared to discuss it later on in the day. And I won't
25 set a particular time, but as soon as practicable

1 tomorrow, to get that written report. We have looked at
2 it a little bit preliminarily ourselves.

3 And I think as the parties have probably found
4 by now as they are involved in the exercise, it is
5 important to know in addition to the items we talk about
6 -- that is, the contentions for which testimony has been
7 deferred -- that it would also include a precise,
8 defined, definite schedule for the wrapping up of OQA
9 through the Staff report on that inspection. And in
10 fact, in the sequence of what we are going to litigate
11 when, to factor that in in terms of filing of Staff
12 reports, filing of testimony, and litigation in
13 sequence, recognizing we can adjust the sequences as we
14 get to it, but at least to have a plan for the
15 sequence. So we would like that to be folded into the
16 process.

17 MR. BORDENICK: Were you talking about a joint
18 report or a separate report?

19 JUDGE BRENNER: We would prefer a joint
20 coordinated report. If that is not possible, separate
21 reports where at least the parties have talked to each
22 other.

23 MR. BORDENICK: I guess I have less of a
24 problem with the first part of what you said. As
25 regards the Staff on the situation with OQA, I have not

1 been in touch with the people at least in the last
2 couple of days. So I will need to do that. Well, I was
3 going to work on another matter first thing in the
4 morning, but sometime tomorrow on the OQA aspect.

5 JUDGE BRENNER: All right, let's put off the
6 whole report until either the end of the day tomorrow,
7 the whole written report until the end of the day
8 tomorrow or first thing Friday morning. But when I say
9 first thing, I mean like 8:00 o'clock. We want time to
10 talk about it before we come back on as a board before
11 we come back on the record. And that way the matter of
12 the Staff's OQA report, we are looking towards very
13 early January, given the exit interview of December 15.
14 And, of course, you should talk further to the region.
15 But I think that is consistent with the preliminary
16 report we got when Mr. Starastecki was here.

17 MR. BORDENICK: I also need to talk, I think,
18 to Mr. Dynner and the LILCO people. But I guess we can
19 do that tomorrow.

20 JUDGE BRENNER: I am afraid that unless we
21 plan this, we will be sitting up there on Long Island
22 with nothing to do on a day or two of a given week, and
23 I don't propose to travel up there and have a hearing
24 for one day and then find out we have run out of things
25 for the rest of that week. And that could happen, and

1 you will see what I mean when you get down to planning
2 things.

3 MR. BORDENICK: I assume the Board would like
4 some further scheduling from the parties on Torrey Pines?

5 JUDGE BRENNER: Well, I think we have done
6 Torrey Pines.

7 MR. BORDENICK: Thus far we have done the
8 filing of testimony. I don't recall whether we have
9 done -- well --

10 JUDGE BRENNER: I think the only one we left
11 open was whether you want to pick a date certain on the
12 week of January 11 or whether we just wanted to be in a
13 position to litigate it as early as January 11. But we
14 would be flexible in pushing it beyond that. And as I
15 also vaguely recall, I think we told the parties they
16 could hold off on telling us whether they wanted a date
17 certain until the week before, approximately. I think I
18 suggested a date of around January 5 for that
19 information, or thereabouts. So I think we are set on
20 Torrey Pines.

21 MR. BORDENICK: You are right on that.

22 JUDGE BRENNER: That's the guidepost you
23 have. Then you have to figure out what you are going to
24 litigate in what sequence after Torrey Pines as well as
25 the possibility of litigating something the week of

1 January 4. And it is the end of that week that I am
2 worried about, among other weeks, although maybe that
3 worry will come to naught if we are still doing this.

4 MR. LANPHER: Judge Brenner, could we go off
5 the record for a moment?

6 JUDGE BRENNER: Sure.

7 (Discussion off the record.)

8 (Whereupon, the hearing was recessed, to
9 reconvene at 3:58 p.m., this same day.)

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1 JUDGE BRENNER: Let's go back on the record.

2 MR. BORDENICK: Judge Brenner, I have
3 discussed the matter with counsel for the Applicant and
4 the County. And the response that I got to my
5 discussion with them was that they wanted to think about
6 what I had indicated. And I thought perhaps the Board
7 might want to do the same. So I will bring to the
8 Board's attention the same matter that I brought to the
9 attention of counsel for the parties.

10 Briefly, to put the matter in context, the
11 parties, of course, filed their QA/QC testimony
12 simultaneously. As a result, of course, the Staff did
13 not have the benefit of Mr. Hubbard's testimony at the
14 time we were preparing and filed our testimony. After
15 examining Mr. Hubbard's testimony, as has been discussed
16 over the last several days, it discusses extensively the
17 so-called CAT inspection. When we got the testimony, it
18 was our judgment that one of our Staff panel members,
19 Mr. Higgins, could adequately address any questions that
20 the parties or the Board might have regarding that
21 inspection.

22 However, as a result of principally Mr. Ellis'
23 questioning, it seems to me that we might reach a point
24 where Mr. Higgins or other members of the panel, I think
25 they will be able to address questions, obviously, of

1 what they looked at and what LILCO told them or didn't
2 tell them and that type of questioning. But once you
3 cross a potential threshold of engineering judgments, we
4 may reach a point where members of the panel indicate
5 that they really aren't qualified to address the given
6 question.

7 It turns out that I have made arrangements for
8 Mr. Stewart Ebnetter (phonetic), who is one of the
9 Engineering Division, I think Branch Chiefs, to sit with
10 me at the time the panel was up. And what I would
11 propose to do -- I am not moving at this time and I
12 don't contemplate in the future moving to add him to the
13 panel -- but I have requested that the Region send me a
14 copy of his professional qualifications. And I would
15 pre-serve those on the Board. And if we get to the
16 point where any party or the Board feels that he should
17 be answering questions, then you will have had the
18 benefit of previously looking at his qualifications.

19 As I said, I am not really moving to add him.
20 I am just pointing out that principally because of the
21 questioning by Mr. Ellis, that it has occurred to me
22 that we might get into a situation where principally Mr.
23 Higgins or other members of the panel may not feel
24 qualified to answer a question. Again, I am not moving
25 for anything. I just brought it to the attention of the

1 parties, and their reaction was they wanted to think
2 about it, and perhaps the Board would like to do the
3 same.

4 JUDGE BRENNER: All right, we will think about
5 it. We can decide that very quickly. As I recall, Mr.
6 Ebnetter signed the CAT inspection report as the IE
7 supervisor.

8 MR. BORDENICK: That is correct.

9 JUDGE BRENNER: I think it entirely possible
10 and perhaps probable that you are going to need, the way
11 things have now developed, you are going to need
12 somebody who can for the Staff state the Staff's view of
13 the significance, meaning lessons to be drawn from, et
14 cetera, from the items in the CAT inspection, both as to
15 what the inspectors thought at the time of the
16 inspection, at the time of writing the report, and what
17 the Staff now thinks given the responses given to date,
18 and any further inquiry undertaken by the Staff.

19 And if Mr. Higgins or other members of the
20 panel that you plan to put on are not going to be
21 capable of doing that, I think you are going to have a
22 problem and the record will have a problem.

23 MR. BORDENICK: I think my problem right now
24 is I can't predict whether there will be a problem or
25 there won't be a problem. My instincts tell me there

1 could well be a problem, and this is why I have
2 approached the parties and the Board. The Board I am
3 sure is aware of the fact that we will be moving to add
4 to our panel as a result of the OQA inspection. But
5 this is a separate matter from that. And also it is a
6 more immediate problem since it now appears that the
7 Staff will start testifying next week.

8 JUDGE BRENNER: It seemed to me -- and maybe I
9 am the only one who thought of this and maybe I am so
10 removed from the case planning that the parties have to
11 do that this is completely erroneous -- but it seemed to
12 me, given the nature of part of the case on the part of
13 both the County and LILCO, that each of those parties,
14 both of those parties, would want to be in a position to
15 ask the Staff questions about the CAT inspection.

16 The County's witness has placed heavy reliance
17 on it. I don't think that's an exaggeration. And
18 cross-examination has attempted to distinguish the
19 County's conclusions from what the Staff's conclusions
20 might have been. And once you've gone that far with
21 both these parties, it seems to me the record would be
22 benefitted -- and I am not reaching the point of saying
23 essential -- but it seems to me the record would be
24 benefitted greatly by being able to directly hear from
25 the Staff witnesses on those points.

1 And given that, you might even want to leap
2 ahead of having somebody in reserve, and if you now know
3 that Mr. Higgins alone -- and we shouldn't single him
4 out, you have other witnesses. But he is the one who
5 most prominently comes to mind in terms of involvement
6 in the CAT inspection of those who you have proposed to
7 be on the witness panel. And maybe I am forgetting
8 somebody, but I think he is the only one who was
9 involved in the CAT inspection.

10 MR. BORDENICK: I think he is the only one
11 directly involved.

12 JUDGE BRENNER: And you have to judge for
13 yourself as to how extensive his involvement was. But
14 you may want to have somebody else up there from the
15 beginning as opposed to hopping back and forth. But
16 that is up to you and the parties. And we will think
17 about it. When will the parties know?

18 MR. BORDENICK: Well, I have requested that
19 Mr. Ebnetter send a copy of his qualifications down. I
20 will serve that on the Board and the parties as soon as
21 I get it. I can't speak for the other parties as to
22 when they are going to make their decision. But as I
23 say, if the parties and the Board want to proceed with
24 the panel as is and see how far we can go, at least Mr.
25 Ebnetter will be here with me. So there won't be any

1 delay in getting him down here.

2 JUDGE BRENNER: That was going to be my
3 question. He is going to be physically here anyway?

4 MR. BORDENICK: That is the present
5 arrangement I have. But he was going to more or less be
6 my technical consultant while the panel was testifying.

7 JUDGE BRENNER: All right. Why don't the
8 parties resolve this and tell us Tuesday morning. Now,
9 the Staff is going to have to help the parties, and you
10 may have already by giving them a feel to the extent you
11 can for how far the panel can go in answering the
12 questions of the type and the category I mentioned,
13 without somebody else on the panel. And you, in turn,
14 are entitled to an indication from the parties as to
15 whether they intend to ask those questions. As I said,
16 I might be completely wrong.

17 MR. BORDENICK: Well, in my mind, the latter
18 aspect is fairly crucial, since I can't predict what
19 they are going to ask my panel.

20 JUDGE BRENNER: Okay. I think the record
21 would be benefitted. And if the parties think that is
22 not the case -- I don't have any current cross plans
23 from which I can judge. That is why I am a little bit
24 more in the dark than I usually am on this. For all I
25 know, the people you propose can answer pretty much all

1 of the questions in the area.

2 MR. BORDENICK: It may well turn out to be
3 that way.

4 JUDGE BRENNER: So let the parties talk about
5 it, and we will think about it also, so we will not be
6 hearing it for the first time when we come back to it on
7 Tuesday morning. That will be the earliest that the
8 Staff will take the stand, so it will not be too late to
9 discuss that, and we will know more on Friday as to
10 whether they will even take the stand on Tuesday. Okay.

11 MR. EARLEY: Judge, before we start, I have a
12 couple of things. I handed out a revised QA cross
13 plan. And upon sitting down here and reviewing it, I
14 note that it ate several sections. So before anybody
15 gets enthusiastic, several sections have been omitted.
16 I will have a revised copy done up and deliver that
17 first thing in the morning. But I think it should
18 outline where we are going this afternoon since we are
19 going to section 5 of the cross plan. And that should
20 take up the rest of the afternoon.

21 And on the matter of identifying areas in Mr.
22 Hubbard's testimony coming from various documents, the
23 County has given us a list of five sections from the
24 testimony indicating various documents it came from.
25 And we may come back to that in our cross plan. We have

1 to take a look at those.

2 JUDGE BRENNER: Now that we have given you a
3 long recess, Mr. Ellis, you may proceed.

4 MR. ELLIS: Thank you, Judge Brenner. And
5 specifically where I think I will start right now will
6 be on 5 on the subject generally referred to in 5.E.

7 BY MR. ELLIS: (Resuming)

8 Q Mr. Hubbard, on page 51 of your testimony you
9 indicate that the I&E program is deficient because it
10 has no objective baseline criteria to measure
11 quantitative -- or quantitatively compare the
12 effectiveness of the Shoreham quality program. Is it
13 your testimony that such a baseline criteria is a
14 regulatory requirement?

15 A (WITNESS HUBBARD) Yes. In the broad sense.

16 Q Which regulation do you rely on?

17 A (WITNESS HUBBARD) Well, I went back and was
18 trying to figure out why you even have an I&E program.
19 And the documents I read said that it was in response to
20 the original Atomic Energy Act that the Commission was
21 to have some evidence that the commitments had in fact
22 been implemented. And one of those commitments is the
23 quality assurance program. But I can't cite you a
24 regulation in the paragraph.

25 Q Are you done, Mr. Hubbard?

1 A (WITNESS HUBBARD) Yes.

2 Q Can an experienced or qualified person make
3 judgments as to the effectiveness of a quality assurance
4 program at a nuclear power plant without the use of what
5 you term "objective baseline criteria"?

6 A (WITNESS HUBBARD) Could we have that question
7 read back, please?

8 MR. ELLIS: Yes, sir.

9 (The reporter read the record as requested.)

10 WITNESS HUBBARD: Yes, I believe that a person
11 can make subjective judgments based upon experience.

12 BY MR. ELLIS: (Resuming)

13 Q And are those subjective judgments reliable?

14 A (WITNESS HUBBARD) Not necessarily.

15 Q In what circumstances would they not be
16 reliable?

17 A (WITNESS HUBBARD) They might not be reliable
18 for a number of reasons. I haven't really thought of
19 that all, Mr. Ellis, but they might be unreliable
20 because of inadequate data; they might be inadequate
21 because not enough aspects have been looked at, so it
22 would be like both depth of review and extent of review
23 -- that is, both parts of data. It might be that there
24 was some bias in the way the samples were selected on
25 which the judgments were made, so that extrapolation was

1 not proper. Those would be some examples.

2 Q Mr. Hubbard, you mentioned amount of data. Is
3 there a sufficient amount of data available with respect
4 to Shoreham to enable an I&E person to make judgments as
5 to the effectiveness of the Shoreham QA program without
6 the aid of what you termed an "objective baseline
7 criteria"?

8 A (WITNESS HUBBARD) No. I think there is
9 enough evidence to indicate that there is a problem.
10 But there is not enough evidence to indicate that there
11 is no problem. And it also has to do with how the
12 evidence was selected. While one might be able to reach
13 that conclusion by the expenditure of 7-10,000 hours, it
14 would have to be structured in advance if the samples
15 one had taken could be statistically extrapolated.

16 Q I see. So that the 7-10,000 hours that I&E
17 has spent on Shoreham, in your opinion, is sufficient
18 provided that statistical sampling techniques have been
19 employed to select the samples of things that they look
20 at. Is that right?

21 A (WITNESS HUBBARD) That is possible, that if
22 you used the statistical techniques and had a pretty
23 defined program of how you were going to reach your
24 conclusion, that with 7-10,000 hours you might be able
25 to conclude that the program had been effectively

1 implemented.

2 But the way that the NRC has spent their
3 7-10,000 hours doesn't allow one to make that type of
4 extrapolation. So it would be possible, but the program
5 isn't structured that way.

6 Q You have indicated that there is not enough
7 data with respect to Shoreham to say that there is no
8 problem. Isn't it fair to say that the data that exists
9 -- strike that.

10 You said there was not enough data to say that
11 there was no problem but that there was enough data to
12 say there is a problem. Isn't it fair to say that at
13 best if you say there is not enough data to say there is
14 no problem, there is also not enough data to be certain
15 that there is a problem?

16 A (WITNESS HUBBARD) I would, in general, be in
17 agreement with your statement, but you added the word
18 "certain," to be "certain there is a problem." I think
19 based upon the data that the NRC has collected, as I
20 stated in the testimony, there is substantial doubt
21 about the effectiveness of implementation.

22 (Counsel for LILCO conferred.)

23 Q Is it your testimony that an experienced,
24 qualified I&E person cannot make comparisons between
25 Shoreham and other stations he reviews without the aid

1 of what you have termed "objective baseline criteria"?

2 A (WITNESS HUBBARD) No. I think he can make
3 some comparisons, but I think they would be very
4 subjective. I testified in the Diablo Canyon proceeding
5 and the Board asked the NRC people, how would you
6 compare the Diablo Canyon to other plants? And the
7 answer was, well, it's about the same. And I have heard
8 that in other proceedings.

9 And in my own personal opinion, that sort of a
10 statement doesn't have a lot of value in terms of the
11 real assessment of the implementation of a QA/QC
12 program. If you want to know how well it was done, you
13 can say there are statistical techniques that talk about
14 confidence levels. You can say, I looked at these
15 attributes, and based upon that I have this degree of
16 confidence. I think that type of answer is more
17 meaningful than the more subjective-type answer that I
18 previously cited.

19 Q Mr. Hubbard, is it fair to say that any
20 attempt to develop objective baseline criteria in fact
21 involves substantial judgments, subjective judgments on
22 the part of those attempting to develop it?

23 A (WITNESS HUBBARD) Yes. I think that is true,
24 Mr. Ellis, that it is subjective or it takes judgment in
25 the sense that one would have to make a judgment of what

1 things would need to be looked at and get peer review on
2 that. For example, you might want to see how the
3 purchasing is going, so you would say, okay, one of the
4 things we are going to look at is purchase orders.
5 Another might be we are going to look at radiographs.
6 And so judgment would have to be made in selecting which
7 items would be looked at.

8 And then also, judgment would have to be made
9 on what type of statistical reliability one is
10 interested in. But once you have made those judgments,
11 then you would have a path by which you could reach your
12 conclusion.

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1 Q In addition to that, wouldn't you have to make
2 judgments as to sample size and where to draw the
3 boundaries between samples with respect to issues like
4 homogeneity of the samples?

5 A (WITNESS HUBBARD) Sample size would fall out
6 somewhat based upon your confidence that you were trying
7 to obtain and based upon the total size of the
8 population, and then on homogeneity there are tests and
9 stratified sampling techniques that are available to
10 address that.

11 Q But aren't judgments still involved in those
12 issues?

13 A (WITNESS HUBBARD) I think that judgments are
14 involved in statistical sampling techniques, but the use
15 of statistics validates the judgments in the sense that
16 one can take a small sample and extrapolate that to an
17 entire population on a reasoned basis.

18 [Counsel for LILCO conferring.]

19 Q It is fair to say, Mr. Hubbard, isn't it, that
20 the I&E does not use what you term objective baseline
21 criteria anywhere, not just with respect to Shoreham,
22 but anywhere? Isn't that right?

23 A (WITNESS HUBBARD) That is not correct, Mr.
24 Ellis.

25 Q All right. Would you tell me where I&E uses

1 the objective baseline criteria that you refer to?

2 A (WITNESS HUBBARD) Well, one example I have is
3 that at the Marble Hill project where there were
4 problems with concrete, the NRC said that a statistical
5 sampling program should be set up to get a certain
6 degree of confidence in the previous concrete
7 inspections, so they made use of sampling in that case.

8 Another case was the Diablo Canyon independent
9 design review program. Well, the staff felt that the
10 statistics could not be used in all cases and had some
11 reservations about it. As part of their order, they did
12 ask the independent auditor to hire a statistician and
13 to make a presentation on what the information might
14 mean statistically, and I think this is also consistent
15 with what applicants -- well, those are two examples
16 that come to mind.

17 A third set of examples that would come to
18 mind is that when a problem is found at a site like the
19 E&DCR problem that LILCO found back in the '76 time
20 period, one way of answering those is to go out and take
21 a random sample based upon statistical bases and then
22 from that make a judgment, and that is exactly the way
23 LILCO did it, and I have seen utilities do that before
24 in response to violations that were found, and the NRC
25 was find that was an acceptable way of answering the

1 question.

2 Q Well, the examples you gave, Marble Hill and
3 Diablo Canyon, in your discussion, that type of
4 reverification, use of statistics were as a tool for a
5 narrow area such as concrete at Marble Hill, that is not
6 the use of the statistical method for a completed
7 program over a long period of time, is it?

8 A (WITNESS HUBBARD) No, but it is indicative of
9 the fact that it could be used.

10 [Counsel for LILCO conferring.]

11 Q The examples you gave, Mr. Hubbard, were, I
12 take it, examples of what you consider to be objective
13 baseline criteria?

14 A (WITNESS HUBBARD) Yes.

15 MR. ELLIS: Judge Brenner, that is all the
16 questions I was going to ask on Roman V-E. Shall I
17 proceed?

18 JUDGE BRENNER: Yes.

19 BY MR. ELLIS: (Resuming)

20 Q Mr. Hubbard, look at 53 of your testimony.
21 Would you tell me, please, for clarification, whether
22 the phrase "important to safety" as it appears on the
23 fifth line from the bottom on page 53 is used in the
24 same sense as "important to safety" and that it stands
25 for the same set as on page 9 of your testimony?

1 [Pause.]

2 A (WITNESS HUBBARD) Mr. Ellis, I only have one
3 definition of important to safety, and that is the
4 definition used by Mr. Denton. That is the definition
5 of important to safety I have in mind.

6 Q Yes, but my question was more specific, Mr.
7 Hubbard. Important to safety, as you have testified,
8 includes the subset of safety-related and also includes
9 another subset of important to safety but not safety
10 related. My question is are the same sets referred to
11 on page 53 as on page 9?

12 A (WITNESS HUBBARD) The intent is to have the
13 same group co . . . As Judge Morris pointed out, my
14 writing on page 9 was not very artful. But my intent is
15 clear: there is to be a QA program for items important
16 to safety, and I intend my definition of important to
17 safety to be consistent with that used by Mr. Denton in
18 his memo.

19 Q So you stand by the testimony you gave
20 previously on which subset was referred to on these two
21 pages?

22 MR. LANPHER: I object to that.

23 WITNESS HUBBARD: I don't understand.

24 JUDGE BRENNER: You see how much easier it is
25 when you let the witness object for you in nicer terms?

1 MR. LANPHER: I think I have been very
2 restrained.

3 JUDGE BRENNER: He doesn't understand the
4 question, and I don't understand the question either.

5 MR. ELLIS: Well, there was previous
6 testimony, and I don't have the transcript page number,
7 that is the problem, so I will have to get that.

8 BY MR. ELLIS: (Resuming)

9 Q On the bottom of page 53 of your testimony,
10 Mr. Hubbard, you stated when I went through the errata
11 that it was a hard question whether the term "staff" on
12 the fourth line from the bottom should be NRR. Is that
13 because you are uncertain whether NRR does in fact
14 review QA/QC with respect to a number of items,
15 structures, systems and components that are not safety
16 related?

17 MR. LANPHER: I object. We went through this
18 before.

19 JUDGE BRENNER: He didn't ask that question
20 before. If he did, I don't remember it.

21 MR. LANPHER: I believe he was asking
22 questions about, well, doesn't the staff look at QA for
23 turbines and this sort of thing, or for stop valves. I
24 think he has been through this.

25 JUDGE BRENNER: I just don't remember that

1 particular question. There is no doubt he asked
2 questions about why he made that change or whether that
3 change was appropriate.

4 MR. LANPHER: Then I will withdraw the
5 objection, Judge Brenner, as long as there is no
6 characterization of his prior testimony. If he wants to
7 ask the questions again, that will be fine.

8 JUDGE BRENNER: All right.

9 MR. ELLIS: I have no problem with that.

10 JUDGE BRENNER: I think the characterization
11 was mild. It was only as to the fact that there was a
12 change.

13 MR. ELLIS: I will rephrase the question,
14 Judge Brenner.

15 BY MR. ELLIS: (Resuming)

16 Q Mr. Hubbard, do you know whether NRR reviews
17 structures, systems and components, the QA/QC with
18 respect to structures, systems and components that are
19 not safety related?

20 A (WITNESS HUBBARD) I don't believe -- no, they
21 don't. I do not believe that NRR systematically reviews
22 the QA program for items important to safety.

23 Q All right. What do you mean by
24 systematically? Are you saying that they do review some
25 but they don't do it in a systematic way?

1 A (WITNESS HUBBARD) I have seen no evidence at
2 Shoreham that the Staff or the NRR, which is you
3 question, during design and construction or operation
4 has reviewed a QA program of LILCO that addresses items
5 important to safety. It gets back to an earlier
6 question that you had, Mr. Ellis, that when I reviewed
7 the LILCO construction QA program, I saw that that was
8 only addressed to safety-related items, not the broader
9 category of items important to safety. So they couldn't
10 review it on Shoreham because there isn't a program at
11 LILCO that addresses items important to safety in a
12 systematic manner.

13 Q Mr. Hubbard, you have said that there was no
14 evidence that NRR had reviewed any items that are not
15 safety related at Shoreham. Has NRR published any
16 guidance on QA requirements for items other than safety
17 related?

18 A (WITNESS HUBBARD) Do you mean a regulatory
19 guide, Mr. Ellis?

20 Q Any kind of guide -- or guidance, I'm sorry.

21 A (WITNESS HUBBARD) I am not aware that they
22 have. My understanding in discussions with Mr. Haass
23 and his testimony on 7B is that the Staff is still
24 developing criteria by which to review QA program for
25 GD&G-1 compliance. I have a new report from EG&G that

1 the Staff just had done for them where the Staff -- this
2 was published in November, where items for both BWRs and
3 PWRs are ranked in importance to safety and then graded
4 QA guidelines are assigned. This is still a draft
5 report, but my understanding is this guidance is now
6 being developed. But it was always intended that this
7 guidance be provided. That was my previous testimony.

8 JUDGE BRENNER: Is that the same report that
9 the parties and the Board received under cover of a
10 letter from Staff counsel in the case? The EGG-EA-6109,
11 dated November '82, identification and ranking of
12 nuclear plant structures, systems and components and
13 graded QA guidelines? Is that the one?

14 WITNESS HUBBARD: Yes, sir. That is to me an
15 example of the type of guidance that the Commission is
16 developing now, and consistent with what Mr. Haass had
17 previously testified.

18 [Counsel for LILCO conferring.]

19 BY MR. ELLIS: (Resuming)

20 Q Would it be fair to say, Mr. Hubbard, that you
21 don't know one way or the other whether the Staff
22 reviews any items that are not safety related at
23 Shoreham with respect to QA and QC?

24 A (WITNESS HUBBARD) No.

25 Q You do know that it reviews some or do you

1 know that it reviews none that are not safety related?

2 A (WITNESS HUBBARD) Well, I know that the SER
3 prepared by the Staff addresses only in Section 17.2
4 safety-related items, and that is consistent with the
5 LILCO operational QA manual which addresses, only with
6 the exception of perhaps fire protection, safety-related
7 items. So I don't know how the Staff can be reviewing a
8 program for items important to safety where I am unaware
9 that any such program in a systematic manner exists.

10 Q You are under the impression, therefore, that
11 the only review is pursuant to Section 17 of the FSAR
12 and not under some other mechanism?

13 MR. LANPHER: I object to that question. A
14 review pursuant to Section 17. I don't know what he
15 means by review pursuant to Section 17 of the FSAR.

16 JUDGE BRENNER: I'm not sure either, Mr.
17 Ellis, and you changed the terminology from your
18 previous question, so even if there is a consistency, it
19 isn't immediately apparent.

20 [Counsel for LILCO conferring.]

21 JUDGE BRENNER: That is, even if Mr. Hubbard
22 knows and can answer the question, the record would have
23 trouble putting that answer together with your previous
24 two questions.

25 BY MR. ELLIS: (Resuming)

1 Q Well, you mentioned fire protection as one
2 nonsafety-related area that is reviewed by NRR. Can you
3 think of any others?

4 A (WITNESS HUBBARD) I did not say that fire
5 protection was reviewed by NRR, Mr. Ellis. There are
6 some I&E reviews of the QA program as it relates to fire
7 protection, but I am not aware that NRR reviewed that
8 aspect of the LILCO QA program. The NRR review, to the
9 best of my readings, only uses the word "safety-related."

10 Q Well, maybe my question has not been -- let me
11 be more specific. Are you aware or do you know whether
12 NRR or I&E, any portion of the Staff, reviews any of the
13 quality assurance or quality control aspects of
14 nonsafety-related structures, systems and components?

15 A (WITNESS HUBBARD) I believe NRR addresses
16 only safety-related in the QA review. The I&E's QA
17 review may in some cases go beyond safety-related.
18 However, I get back to at Shoreham the operations QA
19 manual is in general limited to addressing
20 safety-related items, so there is no program that I&E
21 could review for items important to safety other than
22 the one in the appendices for items such as fire
23 protection.

24 Q Well, without regard to whether there is a
25 program or not, my question, Mr. Hubbard, is whether the

1 QA and QC aspects relating to specific structures,
2 systems and components are reviewed by the Staff, and
3 I'm talking about those that are not safety-related.

4 A (WITNESS HUBBARD) I don't know.

5 Q Let's turn next -- Mr. Hubbard, you cite the
6 Sandia study on pages 55 and 56. It is true, isn't it,
7 that a number of the recommendations in that study,
8 including direct inspection and testing of hardware and
9 evaluation of radiographic and ultrasonic test data,
10 have been done by the NRC at Shoreham?

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1 A (WITNESS HUBBARD) That is correct, Mr.
2 Ellis. But other recommendations such as the
3 application of QA to elements not safety-related but
4 important to safety have not been implemented by the
5 NRC. So the recommendation of Sandia about applying
6 Appendix B to other items with important safety
7 significance has not been implemented.

8 (Counsel for LILCO conferring.)

9 Q Mr. Hubbard, it is also true, isn't it, that
10 the Sandia study does not conclude, as you did, that the
11 I&E effort is too limited to permit I&E to reach an
12 informed conclusion concerning the adequacy or the
13 implementation of programs?

14 A (WITNESS HUBBARD) I don't know what sentence
15 you are looking at in conclusion. If you would point me
16 to a particular sentence I could comment on that, Mr.
17 Ellis.

18 Q How about just answering my question?

19 MR. LANPHER: Judge Brenner, if he is
20 referring to a specific aspect of Mr. Hubbard's
21 testimony, there is a lot of writing, and I think it is
22 entirely proper to direct Mr. Hubbard where it is.

23 JUDGE BRENNER: Yes. I think so, too. He was
24 paraphrasing on page 56, Mr. Hubbard, your testimony
25 there.

1 MR. LANPHER: About the middle of the page.

2 JUDGE CARPENTER: Line 9.

3 (Pause.)

4 WITNESS HUBBARD: I'm sorry. I would like the
5 question read back. I don't understand.

6 (The Reporter read the record as requested.)

7 WITNESS HUBBARD: I am not aware that Sandia
8 makes that quote, Mr. Ellis. It may here in this
9 study. But as I state at the bottom of 55, that the
10 report says that further improvements are warranted of
11 both industry quality programs and NRC regulation of
12 these programs.

13 MR. ELLIS: I thought my question was simpler
14 than that. Let me try again.

15 BY MR. ELLIS: (Resuming)

16 Q You testified that the I&E effort -- and I'm
17 referring to page 56 -- is too limited to permit I&E
18 from reaching an informed conclusion. My question to
19 you is -- oh, you say that LILCO has complied with
20 Appendix B.

21 My question to you is that the Sandia study
22 which you refer to in your testimony does not reach any
23 general conclusion, does it, that the I&E effort is too
24 limited to permit I&E to reach an informed conclusion?

25 A (WITNESS HUBBARD) That is my opinion, that

1 the I&E effort has been too limited to reach an informed
2 conclusion. An informed conclusion in my context
3 included the use of statistical techniques to be able to
4 say with some degree of reliability that the program has
5 in fact been implemented.

6 Q I understand that, but I just wanted you to
7 confirm for me that that conclusion that you have is not
8 a conclusion that is reached by the Sandia study.

9 A (WITNESS HUBBARD) That is my conclusion, Mr.
10 Ellis.

11 JUDGE BRENNER: Yes, but you're not answering
12 the question, Mr. Hubbard, and I'm sure you're not
13 appreciating that you are not. You see, we understand
14 it is your conclusion. That doesn't tell us whether it
15 is also Sandia's conclusion or rather whether it is your
16 conclusion, although not Sandia's conclusion. You see,
17 those are two different cases, both consistent with your
18 answer. And I think that is what Mr. Ellis wants to get
19 at.

20 WITNESS HUBBARD: It is my conclusion. It is
21 not the Sandia conclusion.

22 (Counsel for LILCO conferring.)

23 MR. ELLIS: Judge Brenner, this is one of
24 those sections that we referred to earlier as having
25 other origins, but at most I think what we will do is

1 tomorrow we will have a means of doing that very
2 briefly. I don't propose to do any more of that today.

3 JUDGE BRENNER: Well, you already did some of
4 that as to this. I mean even prior to the immediate
5 questions.

6 BY MR. ELLIS: (Resuming)

7 Q Mr. Hubbard, on page 56 through 58 you discuss
8 a GAO study, and on page 57 you point out that there
9 were eight items deficient in the review of the Shoreham
10 I&E reports. And you set forth the nature of those on
11 page 58.

12 Do you think that description of the nature of
13 them fairly represents the conclusions of GAO with
14 respect to the significance and nature of those items?

15 A (WITNESS HUBBARD) Well, first of all, yes.
16 These numbers are right from the GAO report at page 13,
17 and these are exactly GAO's words on the two sets of
18 numbers.

19 I would have liked more information than GAO
20 provided on what the content of the 13 deficiencies
21 were, but I was not able to obtain that from the GAO
22 report.

23 Q You say you were not able to obtain more
24 information from the report. Let me hand you, Mr.
25 Hubbard, an excerpt from the report, and it will be page

1 12, 13, and 31.

2 And, Judge Brenner, I guess it would be
3 appropriate to mark this as an exhibit.

4 Would this be 50, Judge Morris?

5 JUDGE MORRIS: Yes. That would be LILCO
6 Exhibit 50.

7 (The document referred to
8 was marked LILCO Exhibit
9 No. 50 for
10 identification.)

11 JUDGE BRENNER: And these are excerpts, the
12 pages you indicated, from the report which is fully
13 identified in Footnote 52 on page 56 of Mr. Hubbard's
14 testimony, as I understand it.

15 MR. ELLIS: Yes, sir. I think the EMD number
16 is in the righthand corner of the cover page.

17 BY MR. ELLIS: (Resuming)

18 Q Mr. Hubbard, would you turn to page 12 of
19 LILCO Exhibit 50 and read, if you would, please, the
20 bottom paragraph aloud, please.

21 A (WITNESS HUBBARD) Yes. "We discussed these
22 deficiencies with NRC regional personnel. Based upon
23 our findings and NRC's responses, we concluded that 31
24 of the 45 inspection report items, about 69 percent,
25 were deficient in some manner. We note, however, that

1 some of these items are insignificant and others reflect
2 our judgment as opposed to NRC's. Also, while we did
3 not attempt to determine the safety significance of
4 these inspection deficiencies, NRC does not consider any
5 of them major safety concerns or items of noncompliance
6 with regulatory requirements."

7 Q That is information, isn't it, that is
8 available in the GAO report? That is certainly
9 pertinent to the nature of those eight findings or
10 observations that you rely on and that are set forth on
11 page 13 of Exhibit 50, LILCO Exhibit 50.

12 A (WITNESS HUBBARD) Yes. That is important,
13 Mr. Ellis, that the GAO always presents what the
14 person's being audited opinion is, and this was the
15 NRC's opinion as of that day. But you still have to go
16 back to what the recommendations of GAO are, and those
17 are shown on the front page: that they recommended to
18 improve inspection and reporting practices, that to use
19 the inspector's time and talents more efficiently, and
20 better documented inspection findings.

21 JUDGE BRENNER: Do you think all of those
22 conclusions are fully consistent?

23 WITNESS HUBBARD: Yes.

24 JUDGE BRENNER: One might argue that if you
25 increased the time spent putting fully adequate details,

1 in GAO's view, in the reports, that might affect the
2 inspector hours spent on inspection which GAO also
3 criticized as part of the quote you read. That is why I
4 asked the question.

5 WITNESS HUBBARD: What was the question, Judge
6 Brenner?

7 JUDGE BRENNER: The question was do you think
8 those inclusions, which you just read, by GAO, whether
9 you think they are all consistent?

10 MR. LANPHER: Consistent with each other,
11 Judge Brenner?

12 JUDGE BRENNER: Yes. I'm sorry. Consistent
13 with each other. Thank you.

14 WITNESS HUBBARD: Yes, I think they are
15 consistent with each other.

16 JUDGE BRENNER: And I also added the reason I
17 asked, it appears that they would be happier if -- not
18 happier, but one of the things they criticized was the
19 lack of detail in the reports, in the inspection
20 reports; and they also criticized the underutilization
21 of what they termed the professional inspector and time
22 spent on inspections.

23 WITNESS HUBBARD: Yes, sir. That is what is
24 in paragraph 1 and 2 of this exhibit. I mean you read
25 that the inspectors did their work without proper

1 attention to detail and accepted inadequate corrective
2 actions from utilities. And it goes on.

3 I think that what is reported in the GAO
4 report is then consistent with the recommendations, but
5 they have an obligation to report everybody's view, and
6 they did that. They said this is what the NRC's view is.

7 JUDGE BRENNER: Well, I asked you for your
8 view, because part of what we're looking at is the NRC
9 inspection effort at Shoreham, and you in turn relied in
10 part on the GAO report.

11 MR. ELLIS: Shall I proceed?

12 JUDGE BRENNER: Are you not finished, Mr.
13 Hubbard? I thought you were.

14 WITNESS HUBBARD: I thought you had asked why
15 did I rely on the GAO report.

16 JUDGE BRENNER: No. I just commented that you
17 did.

18 WITNESS HUBBARD: That is correct.

19 BY MR. ELLIS: (Resuming)

20 Q Mr. Hubbard, confirm for me, please, that with
21 respect to Shoreham the eight items that they found
22 deficient, there is no indication, is there, in the
23 report whether any of those eight are included in the
24 categories on page 12 that were deemed either
25 insignificant or reflecting GAO's judgment as opposed to

1 NRC's.

2 A (WITNESS HUBBARD) There are some multiple
3 parts to that. I could not find anything, Mr. Ellis, in
4 the GAO report that talked about Shoreham specifically
5 so I could break out Shoreham from these numbers.

6 Q My point, Mr. Hubbard, is a fairly simple
7 one. You see the eight deficiencies that you referred
8 to on page 57 of your testimony and appear on page 13 of
9 the LILCO Exhibit 50?

10 A (WITNESS HUBBARD) Yes, sir.

11 Q You don't have any way of knowing, do you,
12 whether those are among the items that the GAO said at
13 the bottom of page 12 were either insignificant or
14 reflected GAO's judgment as opposed to NRC's judgment?

15 A (WITNESS HUBBARD) Well, I know that the eight
16 are part of the 31 that are referred to on page 12 of
17 LILCO Exhibit 50, but I don't know which of those eight
18 are further broken down.

19 Q Well, your answer to my question then is you
20 don't know whether any of the eight are either
21 insignificant as noted by the GAO or reflect a
22 difference in judgment between the GAO and NRC?

23 A (WITNESS HUBBARD) That is correct, Mr. Ellis.

24 Q Mr. Hubbard, you referred to the quote on the
25 cover page of LILCO Exhibit 50. Do you see that? Do

1 you see the quote on the cover page?

2 A (WITNESS HUBBARD) Yes.

3 Q Do you know whether the writers of the report
4 wrote that or whether that is some sort of precis or
5 summary?

6 A (WITNESS HUBBARD) I don't know who wrote
7 this, Mr. Ellis, but I think I can find those words
8 given time in the body of the report.

9 Q Would you undertake to do that tonight and let
10 us know? I frankly could not find it. It is the
11 language, is it not, that you quote at the top of page
12 57 in your testimony?

13 A (WITNESS HUBBARD) Yes, it is.

14 Q Well, you may well find that we just didn't
15 have a sharp enough eye. And I would appreciate it if
16 you could.

17 Mr. Hubbard, with respect to the GAO report,
18 do you consider it relevant whether or not the NRC
19 agreed or disagreed with any of the findings or
20 recommendations?

21 A (WITNESS HUBBARD) I think it is relevant. I
22 also think that what the NRC has done in the intervening
23 years is relevant. So the NRC had some opinion or
24 responses at the time of the GAO audit. I think their
25 response to the same questions today is also relevant.

1 Q All right. You said that you think what the
2 NRC said is relevant. Turn to page 31 which is the
3 final page of LILCO Exhibit 31 and confirm for me, if
4 you will, please, at the bottom of the page an
5 indication that the NRC did not agree with certain
6 specific conclusions and recommendations in the handling
7 by GAO of data in the report.

8 A (WITNESS HUBBARD) I'm sorry, Mr. Ellis. What
9 was your question?

10 Q Let me repeat it. You indicated that whether
11 the NRC agreed or disagreed with the findings and
12 conclusions would be relevant, and now I'm directing
13 your attention to page 31 and asking you to confirm for
14 me, please, that on page 31 at the bottom there are
15 specific, three specific areas where the NRC indicated
16 that it did not agree with the conclusions and
17 recommendations or handling of data by the GAO.

18 A (WITNESS HUBBARD) That is correct.

19 Q And for the record would you just read those
20 three, please, sir?

21 A (WITNESS HUBBARD) The first one was use of
22 manpower utilization data. The second one was the use
23 of construction craftsman interviews as an inspection
24 technique. And the third one was the need to improve
25 inspection documentation and reporting practices.

1 Q So looking back then at the front cover of
2 LILCO Exhibit 50, two of the three that are stated there
3 by the GAO are -- well, disagreed -- let me start again.

4 The NRC disagrees with two of the three that
5 are stated on the cover of LILCO Exhibit 50 by the GAO,
6 isn't that right?

7 Strike that question and let me ask it this
8 way.

9 How many of the GAO recommendations on the
10 cover page of LILCO Exhibit 50 does the NRC disagree
11 with?

12 A (WITNESS HUBBARD) Maybe it is just late in
13 the day, but the words don't exactly compute back and
14 forth.

15 JUDGE BRENNER: Let me try. In the portion on
16 the cover of LILCO Exhibit 50 for identification which
17 you in turn quoted at page 57 of your testimony there
18 are three conclusions which could have been set off by
19 bullets that were set off by two dashes in your
20 testimony and on the report.

21 Mr. Ellis' question is do you agree that as
22 stated in the GAO report itself that the NRC disagrees
23 that two of those conclusions are valid?

24 WITNESS HUBBARD: That wasn't his question.
25 He withdrew that one.

1 JUDGE BRENNER: Is that right, Mr. Ellis?

2 WITNESS HUBBARD: He asked me just where did
3 they disagree.

4 MR. ELLIS: Judge Brenner, your question that
5 you asked was the question I asked previously, and
6 because I didn't want to limit it to two or the three, I
7 changed it to how many of the three on the cover page
8 did the NRC indicate that it disagreed with.

9 WITNESS HUBBARD: If I go down them, the first
10 one, use of manpower utilization data, that was not one
11 of the three recommendations.

12 JUDGE BRENNER: Wait a minute. Your second
13 question is still dealing with the quotation on the
14 cover, is that right, Mr. Ellis? Or am I missing the
15 boat completely?

16 MR. ELLIS: Yes, sir.

17 JUDGE BRENNER: So we still have those three
18 conclusions.

19 MR. ELLIS: Yes, sir.

20 JUDGE BRENNER: I don't really understand how
21 your different wording changes the question.

22 MR. ELLIS: I don't think it really changes it
23 in substance except it doesn't limit him to two of the
24 three.

25 JUDGE BRENNER: Do you see the three

1 conclusions, Mr. Hubbard?

2 WITNESS HUBBARD: The first objection, the use
3 of manpower utilization data, doesn't go to any of the
4 three conclusions.

5 JUDGE BRENNER: What are you reading from?

6 WITNESS HUBBARD: Page 31.

7 JUDGE BRENNER: You're starting the other way
8 from where I would have started, but go ahead.

9 JUDGE CARPENTER: Mr. Hubbard, can you help
10 me? What manpower is being referred to?

11 WITNESS HUBBARD: I would like to look at the
12 whole report to figure that out myself, because up above
13 the NRC says it is initiating changes to improve its
14 manpower management, and then down here they disagree
15 with the use of manpower utilization data.

16 I would need to take some time and look at the
17 details of that and the recommendations and the report.
18 I would be glad to do that, Dr. Carpenter.

19 JUDGE CARPENTER: I just thought if you knew
20 it would be nice if I knew, and if we don't know, it's
21 not going to make a very good record.

22 JUDGE BRENNER: Why don't you keep running
23 down the ones -- you were on page 31 -- to answer Mr.
24 Ellis' question, if that is the approach you want to
25 take to answer it.

1 WITNESS HUBBARD: The second item on 31, use
2 of construction craftsman interviews as an inspection
3 technique, that is not one of the three
4 recommendations. And then the third item, the need to
5 improve inspection documentation and reporting
6 practices, that is probably consistent with the first
7 recommendation which is improve its inspection and
8 reporting practices.

9 And I would need to review the report to see
10 if it is, since the word "documentation" is used in 31,
11 if it is also directly in conflict with the
12 recommendation to better document its inspection
13 findings.

14 JUDGE BRENNER: We're going to break. I was
15 going to let you finish up the GAO report questions.
16 Have you done that, or are you on the verge of doing
17 that, or do you want to break anyway?

18 MR. ELLIS: I am on the verge of doing it, but
19 I would like to break anyway, and it may be that I have
20 done it.

21 JUDGE BRENNER: I should have asked my last
22 question first. I always get that wrong.

23 Let's adjourn now, and we will be back at 9:00
24 tomorrow morning.

25 (Whereupon, at 5:05 p.m., the hearing was

1 recessed, to be reconvened at 9:00 a.m., the following
2 day, Thursday, December 9, 1982.)

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NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the
BEFORE THE ATOMIC SAFETY & LICENSING BOARD

in the matter of: Long Island Lighting Company (Shoreham Nuclear Power
Station)

Date of Proceeding: December 8, 1982

Docket Number: 50-322 OL

Place of Proceeding: Bethesda, Maryland

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)