

NUCLEAR REGULATORY COMMISSION

— ORIGINAL

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:

LONG ISLAND LIGHTING COMPANY)
(Shoreham Nuclear Power Station)) DOCKET NO. 50-322-OL
)

DATE: September 15, 1982 PAGES: 10,208 thru 10,274

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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

Third Floor, B Building
Court of Claims
State of New York
Veterans Memorial Highway
Hauppauge, New York

Wednesday, September 15, 1982

The hearing in the above-entitled matter
convened, pursuant to recess, at 9:05 a.m.

BEFORE:

- LAWRENCE BRENNER, Chairman
Administrative Judge
- JAMES CARPENTER, Member
Administrative Judge
- PETER A. MORRIS, Member
Administrative Judge

1 APPEARANCES:

2 On behalf of the Applicant, LILCO:

3 W. TAYLOR REVELEY, III, Esq.
4 ANTHONY F. EARLEY, Esq.
5 T.S. ELLIS, III, Esq.
6 Hunton & Williams
7 707 East Main Street
8 Richmond, Virginia 23212

9 On behalf of the NRC Regulatory Staff:

10 BERNARD BORDENICK, Esq.
11 DAVID A. REPKA, Esq.
12 Nuclear Regulatory Commission
13 Washington, D.C.

14 On behalf of Suffolk County:

15 LAWRENCE COE LANPHER, Esq.
16 ALAN ROY DYNNER, Esq.
17 Kirkpatrick, Lockhart, Hill,
18 Christopher and Phillips
19 1900 M Street, N.W.
20 Washington, D.C. 20036

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C O N T E N T S

VOIR
DIRE

WITNESSES:

DIRECT

CROSS

REDIRECT

RECROSS

T. Tracy Arrington,
Frederick B. Baldwin,
Robert G. Burns,
William M. Eifert,
T. Frank Gerecke,
Joseph M. Kelly,
Donald G. Long,
William J. Museler,
Edward J. Youngling
By Mr. Lanpher

10,217

RECESSES:

PAGE

Morning
Noon
End

10,258
10,262
10,274

P R O C E E D I N G S

1
2 JUDGE BRENNER: Good morning. We are going to
3 resume on a quorum basis with Judge Morris and myself as
4 we start off this morning. As you can see, Judge
5 Carpenter is not here. And if there are no preliminary
6 matters, County can continue the cross.

7 MR. REVELEY: Judge, I've got two quick
8 preliminary matters. The first one is, I want to note
9 for the record that yesterday I distributed two
10 settlement agreements, one on SC-19, which is human
11 factors procedures, the second on SC-26, which is
12 ALARA. I also distributed a stipulation concerning the
13 supplemental testimony by LILCO on water hammer
14 procedures and training.

15 Now, the remaining six items that the County
16 and the company and the Staff have been working on in
17 recent weeks we trust will be forthcoming fairly
18 shortly.

19 My second item concerns the ready agreement I
20 stated yesterday to hearings in Bethesda beginning on
21 October the 12th. I should have qualified that in this
22 fashion. The company has no problem at all with
23 hearings concerning Staff testimony on QA and the
24 County's. We will have a problem if we have to take our
25 exceptionally numerous witness panel and their even more

1 numerous documents to Washington -- rather, Bethesda.

2 Thus, if at all possible we would like to
3 complete the cross-examination of our panel in New York
4 as opposed to Bethesda. That should pose no problem if
5 in fact it is completed in the next two weeks. We
6 realize it may pose a problem if it extends beyond
7 that. But there would be significant logistical burdens
8 involved in moving our 11 people and all of their
9 documents and other support to Bethesda.

10 JUDGE BRENNER: I would like to accommodate
11 you, but I can't. This is the reason. I cannot leave
12 it that up in the air until the last moment in
13 determining where we are going to be. I understand
14 there will be a two-week gap. But nevertheless, there
15 are some logistics involved in our arranging for hearing
16 space and putting other Boards to inconvenience once we
17 are holding space in Bethesda, and then figuring out
18 where we are going to be back here and whether back here
19 is Happaugue or Riverhead, and so on and so forth.

20 As it is, I don't know what proceeding I'm
21 going to be trying when in October, and in fact I don't
22 know where in all cases. And I just have to have it
23 settled right now. In order to settle it, I just want to
24 go back there for starting that week.

25 MR. REVELEY: We understand that. I would ask

1 that if humanly possible we not have to bring our entire
2 panel and all of their support to Bethesda. If Mr.
3 Lanpher in fact finishes in two weeks, as suggested when
4 I agreed to no hearings for two weeks, there will be no
5 difficulty.

6 If that isn't possible, if we could finish at
7 least with some portions of our panel and their
8 documents, that would be useful. We understand the
9 logistical difficulties of not knowing where the
10 hearings are going to begin on October the 12th, and we
11 certainly accept your decision.

12 That does not, however, obviate the logistical
13 problems that we will have if we've got to take
14 everybody down to Bethesda starting on October the
15 12th.

16 JUDGE BRENNER: I guess I don't fully
17 understand your problem, now that I have ruled that we
18 are starting there. I understand it would be nice not
19 to have to bring them, but what is the difference
20 between bringing four witnesses or eight witnesses from
21 Long Island?

22 I'm worried about the state of the record in
23 terms of dividing witnesses up on a subject that is
24 fairly interrelated? I don't know if it could work.

25 MR. REVELEY: It may not. And Mr. Ellis is

1 whispering in my ear that it can't, which suggests to me
2 that I am not as interested in it perhaps as I thought I
3 was.

4 I'll come back to you, Judge, if I think I
5 need to, in two weeks.

6 JUDGE BRENNER: All right. We certainly will
7 try to accommodate LILCO as well as any other party in
8 terms of convenience. If we see a way to do it and
9 therefore have a concrete suggestion, we will certainly
10 be willing to entertain it.

11 MR. ELLIS: Judge Brenner, is this an
12 appropriate time to mention chapter 13 in the FSAR?

13 JUDGE BRENNER: What do you want to say about
14 it?

15 MR. ELLIS: What I said yesterday, and you
16 asked me to remember to put it on the record.

17 JUDGE BRENNER: All right, go ahead.

18 MR. ELLIS: In response to one of the
19 questions that Judge Morris had concerning the amendment
20 or revision to chapter 13, I can report now to the Board
21 that revision to chapter 13 is out and is in the FSAR
22 that is here in the courtroom as the exhibit.

23 JUDGE BRENNER: Thank you.

24 I should note that Judge Carpenter joined us
25 about five minutes ago and in fact appeared probably

1 within a transcript page of the point at which I said we
2 would be starting as a quorum. So the full Board is
3 here.

4 We may have some questions as to some of the
5 settlement agreements and the stipulation that was
6 filed, and we will try to do it all in one place. Maybe
7 I should ask now two quick questions as to the
8 stipulation.

9 There's no mention in there of whether the
10 Staff wishes to cross-examine or is waiving its right to
11 cross-examine, although the Staff has signed the
12 agreement. So either I missed that particular language
13 or I infer from that that the Staff does not wish to
14 cross-examine LILCO's witnesses on the water hammer
15 procedures additional testimony; is that correct?

16 MR. BORDENICK: You are correct in both
17 regards. There is no expressed reference one way or the
18 other in the agreement and you correctly inferred that
19 Staff did not have any cross-examination.

20 JUDGE BRENNER: Okay. I also think that it
21 would be of some benefit to the Board to get an
22 explanation regarding the withdrawal of question and
23 answer 22, I guess it is, if memory serves me correctly,
24 from that additional testimony.

25 MR. REVELEY: It is a fairly short and

1 inelegant explanation. The County's initial suggestion
2 was that we drop all of the material that had been
3 subject to their motion to strike. My reaction to that
4 was dismal, but I agreed to drop question and answer 22
5 on the ground that they seemed to focus far more on
6 design issues than on procedures and training, and in
7 recognition of the fact that settlements involve give
8 and take and that seemed to be a relatively minor bit of
9 give on our part in the larger scheme of things.

10 JUDGE BRENNER: Do you think that same
11 information one way or the other is already in the
12 record? I'm not saying necessarily that same
13 conclusion.

14 MR. REVELEY: Yes, we felt that the design
15 adequacy for water hammer purposes at Shoreham was
16 adequately in the record, and we felt that question and
17 answer 22 got far more to that, as I said, than the
18 procedures and training.

19 JUDGE BRENNER: All right, we can proceed with
20 the cross-examination at this time.

21 MR. LANPHER: Judge Brenner, perhaps I should
22 have stated this yesterday for the record. Mr. Dynner,
23 my colleague, will be handling the operating QA aspects
24 of this testimony. Just so it is clear up front that
25 some of the things that I will indicate along the way I

1 am not covering in my cross plan. That is to have
2 sufficient handling of the matter at one time.

3 For instance, there are some operating QA
4 things that are mentioned up front in the testimony, and
5 in order not to have two bites at the apple also, so to
6 speak, some of those things will be handled later when
7 the bulk of the operating QA testimony is addressed.

8 For the Board's benefit, I'm going to start at
9 the bottom of page 11 of the cross plan.

10 Whereupon,

11 T. TRACY ARRINGTON,
12 FREDERICK B. BALDWIN,
13 ROBERT G. BURNS,
14 WILLIAM M. EIFERT,
15 T. FRANK GERECKE,
16 JOSEPH M. KELLY,
17 DONALD G. LONG,
18 WILLIAM J. MUSELER and
19 EDWARD J. YOUNGLING,

20 the witnesses on the stand at the time of recess,
21 resumed the stand and, having been previously duly
22 sworn, were examined and testified further as follows:

23 CROSS-EXAMINATION -- RESUMED

24 BY MR. LANPHER:

25 Q. Gentlemen, I'd like to direct your attention

1 to the last two questions on page 3 of your prefiled
2 testimony, where you discuss E&DCR's and NND's. And I
3 would like to just get some background on these two
4 documents which are discussed by you in more length
5 later in your testimony.

6 With respect to E&DCR's, you state that these
7 are Stone & Webster Engineering Corporation forms. Are
8 they also used by other contractors on this project,
9 even though they were originally a Stone & Webster
10 form?

11 (Panel of witnesses conferring.)

12 A (WITNESS MUSELER) Yes, sir. The forms are
13 used by not only Stone & Webster personnel; they are
14 also used by contractors, by the startup organization,
15 and by LILCO. The purpose of the form and the reason it
16 is a Stone & Webster form is that the use of that form
17 requires an engineering answer or assessment or
18 decision.

19 And the question or the request for
20 information or the request for engineering change can
21 originate from any organization who is responsible for
22 construction or testing of the plant.

23 Q Can the request for a change also arise from
24 an organization involved in the design?

25 (Panel of witnesses conferring.)

1 Q The reason I was asking that, Mr. Museler,
2 your last answer referenced construction. I understood
3 that the E&DCR's were used in the design, too.

4 A (WITNESS MUSELER) Yes, they are. Virtually
5 all of the design, with the exception of the NSSS scope
6 of supply, is performed by Stone & Webster, although
7 there are -- obviously, vendors are responsible for the
8 design of their equipment and there are some instances
9 where other design -- other portions of the plant are
10 designed by other organizations.

11 In those cases, the E&DCR could be used by
12 those organizations as well, and is and was.

13 Q In your testimony you state that these are for
14 the purpose of getting engineering department approval
15 of a change or clarification of a requirement. What
16 precisely do you mean by a requirement? Is it
17 specification, a drawing, all of those?

18 A (WITNESS MUSELER) The major ones are
19 specifications and drawings, just as you indicate.
20 However, it also might be a question relating to a
21 procedure, a weld procedure, a qualification procedure,
22 a material selection question. But the majority of them
23 relate to drawing and specification requirements.

24 Q Would it be fair to state, then, that E&DCR's
25 are utilized to control the design process and ensure

1 that design documents, such as specifications and
2 drawings, are maintained up to date?

3 (Panel of witnesses conferring.)

4 A (WITNESS MUSELER) The E&DCR's are what I will
5 characterize as a leading document. They authorize --
6 by "leading" I mean they come before. They authorize a
7 change to a drawing or provide a clarification to a
8 specification in advance of the next reissue of that
9 drawing or specification. They are control documents
10 and they do carry the force of design control. In other
11 words, the plant, portions of the plant are changed in
12 accordance with E&DCR's prior to the final issuance of a
13 revised drawing.

14 Q So until there is a final issuance of a
15 drawing, specification or whatever the E&DCR is
16 changing, the E&DCR becomes part of that document; is
17 that correct?

18 (Panel of witnesses conferring.)

19 A (WITNESS MUSELER) Only if the E&DCR really
20 changed the document. There are a large number of
21 E&DCR's which are clarification type E&DCR's which do
22 not have -- which do not require a change in the
23 document, and the document would not ultimately be
24 changed. Some of them do refer to changes in the
25 documents and to that extent they are -- they do have to

1 be associated with those documents for document control
2 purposes.

3 So it is a dual -- they serve a dual purpose.
4 Not all of them are actual changes to drawings and
5 specifications. Probably -- I don't think we have the
6 number, but it's probably a large fraction of them that
7 are not actually associated with changing a document.

8 Q These would be the ones that are for
9 clarification or information purposes?

10 A (WITNESS MUSELER) They would be the ones that
11 would be for information purposes, yes.

12 Q Even E&DCR's which are for information
13 purposes, however --

14 A (WITNESS MUSELER) I'm sorry, would you please
15 repeat that?

16 Q Even where an E&DCR, sir, is for information
17 purposes and does not actually change a requirement,
18 does it not serve to clarify and provide information
19 regarding a requirement and thus need to be referred to,
20 or possibly be referred to, by engineers or other
21 persons that are utilizing the basic document?

22 A (WITNESS MUSELER) It may or may not.
23 Certainly the person who requested the E&DCR needed an
24 answer, and he would have gotten that answer. Whether
25 it's required for the use of other people depends on the

1 particular circumstances involved.

2 (Pause.)

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1 Q Can you please provide an example of an ENDCR
2 which would just clarify a document?

3 A (WITNESS MUSELER) Sure. If you will just
4 give us a moment, we will give you an example.

5 (Whereupon, the witnesses conferred.)

6 A (WITNESS MUSELER) An example of an ENDCR that
7 might -- that would not result in a drawing change might
8 be one where a dimension was taken from a column line,
9 for instance, to a hanger or pipe center line. There
10 may have been instances when the way the particular
11 drawing of that pipe hanger or pipe support was drawn
12 may not have been clear, but the particular dimension
13 shown was taken from a particular column line, because
14 that column line is not shown on the drawing. Someone
15 might ask a question and say that that comes from --
16 does Dimension XYZ come from Column Line Y? That would
17 be one example.

18 Mr. Baldwin refreshed my memory on another
19 type of example which doesn't exactly fit your question
20 but I think is related to it, and that is, there are a
21 number of occasions equipment in a vendor shop would be
22 ready to ship except for the compilation and the
23 shipping of, let's say, a certain documentation package
24 that would be required, say the seismic documentation
25 package.

1 In that case, and it also would have been
2 verified that the documentation did exist somewhere but
3 was not available at the time of shipping. Since it is
4 a specification requirement that equipment be shipped
5 with this documentation package, in order to ship that
6 equipment first, and send the documentation later,
7 someone would have to generate an ENDCR to have
8 engineering say in that particular case that it is okay
9 to ship the equipment and ship the documentation
10 separately at a later time.

11 So, that would be another example of an ENDCR
12 that is not a specification change. None of the
13 specification requirements have been changed by that,
14 but just the order in which it is shipped to the job
15 site would have been changed.

16 So those are both cases where the ENDCR would
17 not be checked for drawing change. It would have no
18 effect on the final product. In other words, in the
19 case of, say, a pump being shipped, the pump and the
20 documentation requirements remain unchanged, and would
21 be shipped to the job site. It is just that they
22 wouldn't be shipped together, and in the case of the
23 dimensional ENDCR I mentioned, it would be a request for
24 clarification from a field supervisor who wanted to make
25 sure that we put the pipe -- that he was taking the

1 right starting point for his tape measure.

2 Q If I understand your testimony correctly,
3 those ENDCR's that actually constitute a drawing change,
4 a specification change, those are subject to your full
5 document control procedures, correct?

6 A (WITNESS MUSELER) Sir, all ENDCR's are
7 subject to the same document control procedures, whether
8 they are these informational type ENDCR's we were
9 referring to or the ones that do require a drawing
10 change or a specification change.

11 Q Why do you require all ENDCR's to be subject
12 to the document control procedure?

13 A (WITNESS MUSELER) The entire plant is subject
14 to the same document control procedure. That is in
15 order to make sure that whatever it is realistically it
16 would be impractical to have more than one system, and
17 also, from the standpoint of how you build a power plant
18 or in fact how you build anything, it is the entire
19 plant that has to be considered in the design control or
20 document control process, so, to ensure that, whether
21 the change is safety related or on a non-safety related
22 piece of equipment, that the same design control and
23 document control process, same document control process
24 is applied to it.

25 Q Gentlemen, could you turn to Attachment 18 of

1 your prefiled testimony, which is the sample ENDCR
2 form?

3 (Pause.)

4 Q Gentlemen, directing your attention to
5 Attachment 18, which is the ENDCR report form of Stone
6 and Webster, toward the top it is called Problem
7 Description. That is where someone would explain the
8 clarification or the information or the proposed change
9 that is needed. Is that correct?

10 A (WITNESS MUSELER) Yes, sir, that is correct.

11 Q Farther down it refers to implementation
12 verification is or is not required. Does this relate to
13 the verification, ENDCR verification program which is
14 discussed later in your testimony, I believe, starting
15 at Page 179?

16 A (WITNESS MUSELER) Yes, it does.

17 Q What are the criteria for determining whether
18 verification is or is not required?

19 (Whereupon, the witnesses conferred.)

20 MR. ELLIS: Mr. Lanpher, was that reference to
21 179?

22 MR. LANPHER: My reference is directing the
23 witnesses to Attachment 18, where the verification
24 program is discussed. It is Page 179, yes. I am asking
25 regarding really how you fill this form out, how do you

1 determine which box to check there in the verification
2 section.

3 MR. ELLIS: And what was the question now as
4 to which box you check?

5 MR. LANPHER: No, what are the criteria for
6 determining that.

7 JUDGE BRENNER: I assume, Mr. Lanpher, you are
8 asking for something other than a summary of the
9 information already contained starting at Page 179?

10 MR. LANPHER: Yes, I am.

11 JUDGE BRENNER: Because the question is rather
12 broad, and those pages address it. Now, you may feel
13 there is something missing. I don't know where we are
14 going beyond what is in the testimony. Is it possible
15 to be more particular? We are likely to get a summary
16 of what is already in there from the witness, unless you
17 guide the witnesses a little more specifically.

18 MR. LANPHER: My intent here, Judge Brenner,
19 is to find out how a line person utilizing this form
20 would make a determination. Is there a procedure he has
21 to go to? Is there a particular criteria that guides a
22 person's determination as to whether verification is
23 required? I don't believe that is addressed in detail
24 later in the testimony. With that clarification, maybe
25 the witnesses can answer.

1 JUDGE BRENNER: Mr. Museler, if you are going
2 to be the one answering, why don't you start off with
3 who has authority to make that indication and who, if
4 anyone, will use it, so that we can be oriented from
5 that point, and then you can go into the criteria.

6 WITNESS MUSELER: Yes, sir. I think I should
7 preface my remarks, however, by saying that the ENDCR
8 verification program, as I believe is stated in our
9 testimony, is not the only method used to verify that
10 the ENDCR's have in fact been incorporated into the
11 plant.

12 The resident engineer who is a member of the
13 UNICO construction management organization is the
14 person, or his organization is the organization that
15 determines what the -- determines whether or not an
16 ENDCR requires verification. They review all the
17 ENDCR's and make that determination. That determination
18 is made on the basis of functionality. That is, all
19 ENDCR's which have an effect on the function of a system
20 or ENDCR's which require non-destructive testing are
21 checked or are indicated for verification.

22 Again, let me say that there are a number of
23 other programs on the job site and in the quality
24 assurance program that also verify the proper
25 implementation of ENDCR's. They are all checked prior

1 to final turnover of the system to the start-up
2 organization by one of our organizations or another.
3 This program was instituted as an added program to
4 ensure on a fairly real time basis that those ENDCR's
5 affecting the function of the plant receive this, what I
6 will characterize as an extra check. It is also done
7 by, in many cases, by a different organization than the
8 organization who performs the final turnover check to
9 the start-up organization.

10 Excuse me. One additional thing, and I
11 believe this was Judge Brenner's question. There is a
12 construction site instruction, a construction management
13 procedure which is used by the resident engineer to
14 promulgate this program, and that CSI was in the -- I am
15 not sure whether the county has it, but it was in the
16 group of documents that were available for discovery at
17 various times.

18 JUDGE BRENNER: Actually, what my question was
19 is the testimony -- go ahead, you can confer for a
20 moment now if you want.

21 (Whereupon, the witnesses conferred.)

22 WITNESS MUSELER: Judge Brenner, I think Mr.
23 Youngling can add something to that.

24 WITNESS YOUNGLING: Mr. Museler in his
25 testimony stated that the verification program continues

1 at the turnover point. In addition, when the systems
2 are turned over to start-up and are under our control,
3 that verification is continuing and ongoing.

4 JUDGE BRENNER: All right. My narrow question
5 goes to the fact that the testimony is rather oddly
6 phrased in talking about an office reviewing the
7 document and determining which box to check. Offices
8 are made up of people, and I want to know what type of
9 authority within that particular office an individual
10 has to have in order to make the decision as to which
11 box to check in the implementation verification box, and
12 whether anybody reviews that decision before it is sent
13 out to distribution for the verification to be made in
14 the field.

15 (Whereupon, the witnesses conferred.)

16 WITNESS MUSELER: The actual individual who
17 would be the one to make the initial determination would
18 be one of the engineers in the resident engineer's
19 office. There are approximately -- today the number is
20 smaller than it was several years ago, but there are
21 approximately seven engineers in the resident
22 engineering office at the present time. Those
23 engineers, the particular individual who does most of
24 that work now, is an individual who has been on the job
25 site, I believe, for six or seven years, and is quite

1 knowledgeable in the systems in the plant.

2 The determination is, does the ENDCR have an
3 effect on the operation of that system, or does it have
4 a non-destructive test valuation? His decisions, in
5 other words, the ENDCR verification, is reviewed by the
6 resident engineer, who is a fairly senior level person
7 in the organization for correctness, and the whole
8 process is audited. The procedure I mentioned, the
9 construction site inspection, is subject to audit, and
10 is audited periodically to ensure that the program is
11 functioning in accordance with the procedure.

12 JUDGE BRENNER: Even an initial decision that
13 verification is not required is reviewed by the field
14 engineer? Resident engineer?

15 WITNESS MUSELER: The decision would be
16 reviewed by the resident engineer. In other words, if
17 the resident engineer disagreed one way or the other
18 whether verification was or was not required, the change
19 would be made at that point.

20 JUDGE CARPENTER: On Page 181 of your
21 testimony, you indicate 6,205 EDCR's had been verified
22 and 1,366 EDCR's remained to be verified. Just to give
23 me some feeling, how many of the total was the decision
24 reached that they didn't need to be verified? Let me
25 get a feel for whether this is a rare case when the

1 document -- you tell me the criteria is whether it
2 affects the functioning, and I am trying to get a feel
3 for whether there are lots of these that don't affect
4 the functioning of the equipment.

5 WITNESS MUSELER: Yes, there are, Judge
6 Carpenter. Let me give you the principle or the primary
7 example where verification is not accomplished by this
8 program, but by another program, and that would be for
9 large bore pipe supports. Large bore pipe supports,
10 unless in an unusual case where some non-destructive
11 testing was required, would not be verified by this
12 program. They would be verified by the quality
13 assurance FQC program where the final sign-off of the
14 hangers includes a review of all of the ENDCR's to
15 assure that any design change documents that were
16 associated with a particular hanger would have been
17 included in the final work.

18 The numbers, the total number of ENDCR's is
19 somewhere over 40,000 at this point, so that would give
20 you a numerical feel for how many are not verified. A
21 large number of those, of the non-verified ones, are
22 informational. The pipe supports, the large specific
23 category that is not verified through this program but
24 is verified through the FQC inspection program in the
25 case of safety related and for the construction site

1 instruction program in the case of non-safety related
2 pipe supports.

3 Does that answer your question, sir?

4 JUDGE CARPENTER: That helps give me some
5 perspective that a majority of these are not considered
6 to required verification. I am still having a problem
7 with understanding the answer to Mr. Lanpher's question
8 as to what the criteria is affecting the functioning of
9 the equipment. It is kind of a broad criterion.

10 WITNESS MUSELER: I think perhaps I can
11 clarify that a little further. Let me say first,
12 though, that all ENDCR's are verified. All ENDCR's are
13 checked to assure that the change, if it was a change
14 that was required in the field, was in fact properly
15 made. Perhaps the best way to address the question of
16 what does the criteria function mean, for instance, any
17 wiring changes to a system obviously can have an effect
18 on the function. Those would require verification. Any
19 change in the logic of the system, either electrically
20 or mechanically, if a small bore line routing were
21 changed, a bypass line around the pump for whatever
22 reason were changed, that would require verification,
23 because it changes somehow the way the system operates,
24 either in automatic or checkout or whatever.

25 Those kinds of things would require

1 verification. Structural steel modifications do not
2 affect the operation of the system. They are verified
3 through a different type of program. Does that help?

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1 JUDGE CARPENTER: Well, it's making it a
2 little more complex. I think I heard you say that all
3 of these are in one sense or another verified, and
4 what's implied by the form that Mr. Lanpher was
5 referring to is a specific kind of verification. That
6 wasn't clear from my reading of the testimony as to what
7 that particular verification was.

8 Now you're telling me that they all are, and
9 we have been talking about many of them not being. So I
10 am kind of lost as to what specifically happens if that
11 verification box is checked, coming back to Mr.
12 Lanpher's question, which was, what are the criteria
13 that you use to decide to check the box, "verification
14 not required."

15 And I can see that apparently it's not spelled
16 out anyplace. It's more a matter of judgment.

17 (Panel of witnesses conferring.)

18 WITNESS MUSELER: The central criteria in this
19 verification program is, does it affect the operability
20 of the system. Perhaps it would be useful to just go
21 through the cycle that occurs at this point. A member
22 of the resident engineering office would review an E&DCR
23 and determine whether or not it affected, either
24 electrically or mechanically or hydraulically, in any
25 operating mode the operation of that system. In other

1 words, if this E&DCR were not incorporated would the
2 system function differently than it was supposed to
3 based on the design change?

4 Let's take, for example, an E&DCR which added
5 a relay to a system, added an electrical relay to a
6 system. That would obviously be a change that changed
7 the function or affected the operability of the system.
8 That would be checked as requiring verification. At the
9 same time, that information is in the quality control
10 organization's records, and it is also in the records of
11 the construction management organization.

12 The verification in this program is
13 accomplished by the construction management
14 organization. The E&DCR verification program requires
15 that, in this case, the electrical department verify
16 that the relay was installed and that any associated
17 cabling was connected, and that would be done by either
18 physical inspection in the field or by reference to the
19 cable ticket records and the component records in the
20 plant.

21 And that E&DCR, independent of everything
22 else, would then be checked as being verified and
23 returned through the resident engineer who tracks the
24 program to accomplish the verification required by
25 checking that box on this form. Independent of that,

1 for example, if it were a safety-related system, when
2 the time came to complete that work or generally
3 immediately upon the completion of that work, the
4 quality control inspection of that component and those
5 cables would be conducted in accordance with the same
6 E&DCR by Mr. Tracy's organization, independent of
7 whether it said verification required or not on this
8 form.

9 That box only means something to the
10 construction management organization. The quality
11 control organizations verify that the E&DCR's have been
12 properly incorporated at the time they do their
13 inspection on the components that are listed, the relay
14 and the cables in this case.

15 So the E&DCR verification program is a
16 redundant program on top of the quality assurance
17 program. And I think Mr. Youngling can also clarify
18 that, since E&DCR's are also issued after systems are
19 completed and turned over, that it also carries over at
20 that point in the process.

21 WITNESS YOUNGLING: Considering the example
22 Mr. Museler used, there would be another layer placed on
23 top of the verification and the construction QA
24 verification. That is our entire test checkout
25 program. We would go in safety-related equipment and we

1 would perform wire checks and functional checks and
2 subsequent preoperational checking of the E&DCR
3 implementation, if you will.

4 JUDGE CARPENTER: Thank you.

5 (Pause.)

6 BY MR. LANPHER: (Resuming)

7 Q Did I understand correctly that the
8 verification program which is referenced at page 179,
9 that special or extra verification program, that is run
10 by construction management? It is not a program which
11 is under the quality assurance program; is that
12 correct?

13 A (WITNESS MUSELER) The program is administered
14 and run and the majority of the inspections are done by
15 construction management personnel, although some of them
16 are done -- some of the items are indicated for field
17 quality control to verify and for the startup
18 organization to verify.

19 But the program is subject to audit by the
20 quality organizations, and in that respect is a quality
21 program.

22 Q If I also understood correctly, one of the
23 other means by which E&DCR's are verified, aside from
24 that program, is the field quality control conducts
25 inspections of all E&DCR's; is that correct?

1 (Panel of witnesses conferring.)

2 A (WITNESS ARRINGTON) That is correct. E&DCR's
3 that are referenced as a change to an installation
4 document would be verified at our inspection time, yes.

5 Q So, looking at attachment 18, any E&DCR on the
6 lower left which implements a drawing change, a
7 specification change, a procedure change, or an
8 engineering service scope of work change, are these the
9 ones which FQC would verify?

10 A (WITNESS ARRINGTON) The ones that we would
11 verify would be a drawing change, a specification
12 change, or a procedure change. These are the documents
13 that would be used for the installation of a
14 safety-related component.

15 Q And FQC performs a 100 percent inspection on
16 those E&DCR's?

17 A (WITNESS ARRINGTON) For those E&DCR's that
18 are considered to be changes to those documents, yes,
19 that would be a 100 percent check.

20 Q Now, when you say a 100 percent check, sir,
21 does that mean -- well, for instance, one of the things
22 on this form, over on the right-hand side it indicates
23 whether an FSAR change is required or not. Would field
24 quality control check in its inspection process to
25 determine that that determination has been made

1 correctly?

2 A (WITNESS ARRINGTON) I would like to refer
3 this to Mr. Eifert.

4 (Panel of witnesses conferring.)

5 A (WITNESS EIFERT) It would not be the field
6 quality control organization's responsibility to make
7 that check. Part of the E&DCR process would be
8 evaluated during engineering assurance audits, where we
9 in auditing the E&DCR process would audit for the
10 decision made by the engineers, whether or not any E&DCR
11 affected the FSAR.

12 We also audit the process of updating the FSAR
13 to see that they're incorporating the appropriate
14 E&DCR's.

15 Q Mr. Arrington, can you please explain what
16 field quality control does in terms of inspection of
17 E&DCR's? Apparently it's not everything that is
18 referenced on this sheet is inspected. Can you give us
19 background on what that inspection entails?

20 (Panel of witnesses conferring.)

21 A (WITNESS ARRINGTON) What we would be looking
22 for out there is the condition that is cited on the
23 E&DCR as it affects the document that we are using to
24 install the product. If the E&DCR calls for a change in
25 dimensions, we would verify that that change is in fact

1 implemented in that particular instance.

2 Q So would it be fair to state that anything
3 that is written out under "problem solution," you would
4 be inspecting to assure implementation of that
5 solution?

6 A (WITNESS ARRINGTON) If it were to be a spec
7 change or a drawing change, we would verify that it has
8 in fact been installed in accordance with the
9 disposition of the E&DCR.

10 Q Do you purposely leave out procedure change?

11 A (WITNESS ARRINGTON) No, it could be a
12 procedure as well.

13 Q Now, the inspection process that you are
14 referring to, does that apply where, in that same box,
15 if you indicate that the change will not be incorporated
16 in particular documents, you still have an inspection by
17 FQC?

18 A (WITNESS ARRINGTON) If you are referring to
19 the classification on the lower left side, that is
20 correct. If it is not incorporated into the document
21 but it is a change to that document, we still verify
22 that it is in fact installed in accordance with this
23 document. It means that it will be attached to that
24 document.

25 A (WITNESS MUSELER) Mr. Lanpher, let me clarify

1 that, and I will do that by reference to an example. A
2 piping change might well be required in some instances,
3 and the piping change would be implemented via an
4 E&DCR. The piping drawing itself, which is the physical
5 drawing of the piping in the plant, might be -- would be
6 the drawing that would be referenced, and in that
7 particular case it would -- the box would be checked not
8 to be incorporated.

9 And the reason for that in that particular
10 case would be because the drawings as corrected to show
11 the final as-built location of the piping are isometric
12 drawings, which are different drawings. So the original
13 piping drawings, which were the first drawings made of
14 the plant, have since been supplemented by the
15 isometrics, which are all maintained up to date. But
16 the particular E&DCR would say drawing, piping drawing
17 FP-XYZ is the affected drawing.

18 But the E&DCR would not be incorporated in
19 that drawing. Mr. Arrington's organization would still
20 be responsible for verifying that the E&DCR was in fact
21 incorporated into the plant in accordance with the E&DCR
22 and at a later point in time would also be verifying the
23 -- excuse me -- would be verifying the isometric drawing
24 in its final as-built condition.

25 So I am just trying to give you an example of

1 the kinds of drawings where we would say that the actual
2 E&DCR would not be incorporated in the drawing
3 ultimately. It would always be referenced against it if
4 anyone were interested, but the drawings of record, the
5 drawings that are maintained as-built up to date in the
6 plant, are a different set of drawings. So this
7 particular one would not be updated as a drawing,
8 although the E&DCR would always be referenced against
9 it.

10 Q Staying with this same attachment, but below
11 the section we were just talking about, Mr. Arrington,
12 the box says "nuclear safety-related, QA category 1,"
13 and under that "not nuclear safety-related, QA
14 categories 2 and 3."

15 Who has the responsibility for making the
16 determination whether the E&DCR affects safety-related
17 or non-safety-related equipment or procedures or
18 whatever?

19 (Panel of witnesses conferring.)

20 A (WITNESS ARRINGTON) You are directing the
21 question to me?

22 Q I was talking with you. As usual, anyone can
23 answer unless I specifically say no one else, something
24 like that.

25 A (WITNESS EIFERT) The responsibility for

1 completing that portion of the E&DCR is with project
2 engineering. That is filled out as part of the activity
3 in dispositioning the E&DCR.

4 Q What criteria -- criterion is followed by
5 project engineering in making this determination? How
6 is this determination made?

7 A (WITNESS EIFERT) An E&DCR in this case is a
8 change, normally to a specification or a drawing, which
9 indicates the quality assurance category for that
10 portion of the design. So this is really a transfer of
11 information from the appropriate design documents to the
12 E&DCR form.

13 Q Am I correct that field quality control
14 performs the inspection, E&DCR inspection for the
15 safety-related E&DCR's?

16 A (WITNESS ARRINGTON) Primarily, that's true.
17 There are cases, as Mr. Museler indicated, where
18 non-destructive test examination will be required for
19 verification of non-safety-related areas, and we would
20 also verify that that has been installed and properly
21 executed.

22 Q But generally, field quality control would not
23 do the inspection on the non-nuclear safety-related?

24 A (WITNESS ARRINGTON) Generally, that is true.
25 However, it would be done by the construction inspection

1 program.

2 Q Going to the right-hand side of the document,
3 we referred before to the FSAR change, yes or no. Who
4 has the responsibility for making that determination,
5 the initial determination whether an FSAR change is
6 required?

7 A (WITNESS MUSELER) The engineering
8 organization is responsible for making that
9 determination, Stone & Webster.

10 Q That's the project engineering office or
11 organization that you referred to before, Mr. Eifert?

12 A (WITNESS EIFERT) That is correct.

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1 Q And is that determination supposed to be made
2 at the same time that the problem solution is proved?

3 A (WITNESS EIFERT) Yes, it is.

4 Q And then the FSAR change is supposed to be
5 reflected in the next amendment to the FSAR? Is that
6 correct?

7 (Whereupon, the witnesses conferred.)

8 A (WITNESS EIFERT) The project engineering
9 organization tracks all changes that are needed to the
10 FSAR, including those indicated on the ENDCR's, and
11 ensures that all are eventually factored into amendments
12 to the FSAR. It is not a mandatory requirement that the
13 next amendment pick up all outstanding ENDCR's, that
14 they all are picked up in due process.

15 Q Gentlemen, could you turn your attention
16 please to Exhibit 19 or Attachment 19, excuse me, to
17 your prefiled testimony?

18 Under the Category column -- Well, first, I
19 really want this whole document explained. What does
20 the Type column refer to?

21 (Whereupon, the witnesses conferred.)

22 MR. ELLIS: For the record, Mr. Lanpher, why
23 don't you identify the document. It is referred to, I
24 think, in the text of the testimony as well.

25 MR. LANPHER: I believe I referred to the

1 document already as Attachment 19. It is entitled
2 Master ENDCR Log By Affected Document.

3 MR. ELLIS: For the board's assistance, that
4 document is referred to on 98 and 99 of the prepared
5 testimony. Ninety-seven and 98. I am sorry.

6 WITNESS MUSELER: Mr. Lanpher, the primary
7 function of the Master ENDCR Log is to assure that all
8 ENDCR's are logged against the affected documents, so
9 that there exists an accurate reference of what advanced
10 changes have been considered when someone is utilizing
11 in this particular case the drawings. The documents
12 listed on this particular page of the ENDCR log are all
13 drawing types.

14 BY MR. LANPHER: (Resuming)

15 Q Mr. Museler, thank you for that information,
16 but my question was, can you please explain this
17 attachment? What is Type 5? What do these types mean?
18 Does that mean it is a drawing?

19 A (WITNESS MUSELER) As I said, Mr. Lanpher, all
20 documents indicated on this page by Type 5 are design
21 drawings.

22 Q Okay, so that number indicates drawings.

23 A (WITNESS MUSELER) Yes, sir. There are some
24 keys on this page that are utilized by the personnel who
25 handle the computer program. We are not as familiar

1 with that as others. So I would have to say that that
2 would require confirmation. I am just observing that
3 all the documents on this page indicated as Type 5 are
4 drawings. We are not familiar with the keys, the
5 numerical keys, what the key for a specification is,
6 what the key for a drawing is. We can recognize them by
7 the number of the document, but we don't recognize them
8 by the type number in the left column.

9 Q A person utilizing this master log would have
10 to go to the key in order to be sure of what the
11 document was?

12 A (WITNESS MUSELER) No, sir. Anybody who is
13 going to utilize this document would know what the
14 documents were by looking at the affected document
15 number, excuse me, the affected document column.

16 Q So the Type column is superfluous?

17 A (WITNESS MUSELER) It is superfluous from the
18 standpoint of the end user. It is not superfluous from
19 the standpoint of the system. That key is used for
20 computer sorting and tracking type functions. Your
21 question was, would someone who went to this have to
22 know what the key is, a user, and the answer is, no, he
23 wouldn't.

24 Q The third column is Category. Does that refer
25 to the QA category, sir?

1 (Whereupon, the witnesses conferred.)

2 A (WITNESS MUSELER) Yes, it does, and in some
3 cases, as you see here, a particular drawing, for
4 example, a flow diagram of a large system, would have
5 Category 1, 2, and 3 components depicted on it.

6 Q The next column, ENDCR Number, is that the
7 latest ENDCR number affecting that drawing or a portion
8 of that drawing?

9 (Whereupon, the witnesses conferred.)

10 A (WITNESS MUSELER) The ENDCR's listed there,
11 the ENDCR number column are the ENDCR's currently
12 outstanding against that drawing. There may be more
13 ENDCR's that were written against that particular
14 drawing which had already been incorporated in it, but
15 it is again based on the timing of the ENDCR's at the
16 time this particular copy of the log were issued. It
17 would have affected the ENDCR's that were outstanding at
18 that time, realizing, of course, that ENDCR's could have
19 been issued some time before this and may not have
20 gotten through the system yet, and may not be
21 incorporated. So, there can be a negative date overlap
22 in some cases, but primarily it is an up to date version
23 of what is outstanding.

24 Q So I was mistaken. This isn't just the latest
25 ENDCR., These are all the outstanding ENDCR's that have

1 not been actually incorporated into the drawing or the
2 affected document, correct?

3 (Whereupon, the witnesses conferred.)

4 A (WITNESS MUSELER) Mr. Lanpher, we are going
5 to check the answer to that, because there may be a
6 difference, to make sure we give you an accurate answer
7 as to whether or not this listing includes all ENDCR's
8 which may have already been incorporated and are still
9 outstanding, or if it just lists the ones which have not
10 yet been incorporated in the drawings. And we will have
11 that answer for you right after the break.

12 Q Okay. Thank you, Mr. Museler. Let me just
13 outline some other questions I was going to ask, and
14 maybe we can get it all after the break and save time
15 now. I would also like to know what the letter after
16 some of the ENDCR numbers means. Some have no letter.
17 Some have C. Some have A.

18 I am also going to want to know what the other
19 columns mean, Incorporate Drawings, Date Closed, and the
20 Record Serial.

21 A (WITNESS MUSELER) Yes, sir, we will provide
22 all that information right after the break.

23 Q Well, whenever it is available, that would be
24 great. Thank you.

25 Mr. Eifert, earlier we talked about the FSAR

1 change on Attachment 18. Turning your attention to
2 Attachment 20, that is entitled Final Safety Analysis
3 Report Change Notice. Is this the kind of notice that
4 project engineering would utilize to effect an FSAR
5 change?

6 A (WITNESS EIFERT) This is one of the
7 mechanisms that are used. I do not believe, for
8 example, that the ENDCR form when it is indicated that
9 it requires FSAR change is entered into a log that is
10 maintained by the project engineering group, and this
11 form would then be used as the routing form for an
12 amendment in that case that incorporates that ENDCR and
13 possibly other changes, and routes the proposed change
14 through the appropriate review and approval process for
15 processing.

16 Q That approval process on Attachment 20
17 indicates that a licensing engineer needs to approve it,
18 the project engineer, and also LILCO. Is that the
19 approval process?

20 A (WITNESS EIFERT) That is not the complete
21 approval process. That approval is indicated on the
22 form because it is the standard for all changes. There
23 are other approvals that are obtained on individual
24 change notices, and the blocks to the right there of the
25 names at the bottom of the form are used by the project

1 licensing people to identify the individuals who are
2 required to approve as well as the three listed.

3 Examples of other people who would be in the
4 approval circuit would be our quality assurance people
5 if the change affected the quality assurance aspects or
6 requirements contained in the FSAR and also our division
7 licensing representatives who are staff specialists, so
8 to speak, on licensing matters, who review those changes
9 that affect their discipline.

10 Q Gentlemen, turning your attention back now to
11 Attachment 18, in the bottom center of the page there is
12 a place for signature by quality systems division or
13 engineering assurance division. Is sign-off by Stone
14 and Webster quality assurance, either the quality system
15 or engineering assurance division, required for all
16 ENDCR's?

17 A (WITNESS EIFERT) No, it is not. Our
18 procedures for processing ENDCR's to review and approval
19 identify the responsibilities of individuals in the
20 review cycle, and require that the quality systems
21 division or engineering assurance division concurrence
22 or approval is required for all changes that affect
23 quality assurance requirements in the affected
24 documents.

25 Q, I am sorry?

1 A (WITNESS EIFERT) To give a specific example,
2 a change to a technical requirement that in no way
3 affected the assurance requirements of inspection, test
4 documentation would not require an assurance review,
5 because we are not changing those requirements.

6 Q Then if I understand, the QA sign-off is
7 required only where the change, it constitutes a change
8 in some of the responsibilities of the quality assurance
9 division. For instance, the change called for an
10 additional audit or something? Is that correct?

11 A (WITNESS EIFERT) Not necessarily. The
12 quality assurance requirements that I was referring to,
13 implementation of those is not exclusively the
14 responsibility of the quality assurance department in
15 either Stone and Webster's or LILCO's quality assurance
16 department. For example, there could be an ENDCR change
17 in a procurement specification, and the quality
18 assurance requirements affected could be the
19 responsibility of the quality assurance organization of
20 the vendor and not Stone and Webster's.

21 A (WITNESS BALDWIN) Mr. Lanpher, maybe I can
22 add a little something there in the example that Mr.
23 Eifert used, and particularly the Shoreham
24 specifications. When we talk about the quality
25 requirements or the quality assurance requirements, we

1 talk in terms of the test inspection and documentation
2 required by either activities that are taking place in
3 the manufacturing cycle or out in the field at the
4 construction site, and whether it is being performed by
5 a vendor or a Stone and Webster procurement quality
6 assurance person or a contractor out in the field or Mr.
7 Arrington's group.

8 If there was a change to those tests,
9 inspections, and documentation requirements, then it
10 would have to come through the quality systems division
11 for quality assurance review. In the particular case,
12 the engineer for a reason may be changing the acceptance
13 criteria or something, and we would verify that that is
14 appropriately an adequate change in accordance with not
15 only company standards but the national codes and
16 standards if they apply.

17 So, basically it is that type of thing, test,
18 inspection, and documentation, categorized as quality
19 requirements or quality assurance or quality control
20 requirements. The quality requirements are those that
21 are stipulated by the engineer. One must go back to
22 also appreciate the specification to begin with prior to
23 this change is also reviewed and signed off for those
24 similar things by both quality systems and engineering
25 assurance.

1 So, before it even hits the street or is used,
2 it has that review. Additionally, it has the similar
3 review when the changes are made.

4 Q Then the fact that --

5 A (WITNESS EIFERT) Excuse me. I would like to
6 make one clarification. Rick indicated that quality
7 systems division and engineering assurance both sign
8 off. The quality systems division signs off for
9 specifications, which is a procurement document for
10 typically hardware. Engineering assurance signs off on
11 engineering service, scopes of work for procurement of
12 services.

13 MR. ELLIS: For the record, I think "Rick" was
14 a reference to Mr. Baldwin.

15 BY MR. LANPHER: (Resuming)

16 Q Does the quality systems division or
17 engineering assurance sign off on any ENDCR's that are
18 marked not nuclear safety related?

19 A (WITNESS EIFERT) Yes. If the requirements
20 are the quality assurance requirements, the same process
21 would be followed.

22 (Whereupon, the witnesses conferred.)

23 A (WITNESS BALDWIN) Mr. Lanpher, Mr. Burns just
24 reminded me of something that might help in talking to
25 this review cycle and who finds what and when. If

1 quality assurance was involved or engineering assurance
2 in the original specification for these requirements,
3 whether safety related or non-safety related, it is
4 automatic that when these changes to these types of
5 requirements happen, that it would cycle through and we
6 would pass judgment again on it. It is not a case by
7 case basis.

8 Q Maybe I am wrong, but that changes the
9 previous answer. Let me come at it a different way. If
10 an item is not nuclear safety related, sir, originally
11 quality assurance would have been involved with the
12 original specification, for instance. Correct?

13 A (WITNESS EIFERT) That is correct.

14 Q Let's assume that a change is made in the
15 specification that does not change any of the quality
16 assurance activities. I mean, you are going to still
17 test and inspect and do everything as before. Is it
18 your testimony that that change, even though it doesn't
19 change your QA responsibilities, that change will need
20 to be approved and signed off by QA?

21 A (WITNESS EIFERT) No, that type of change
22 would not require a QA signature.

23 (Whereupon, the witnesses conferred.)

24 A (WITNESS EIFERT) Mr. Burns indicated -- he
25 reminded me that the distribution control of the ENDCCR's

1 would ensure that the quality assurance organization
2 received a copy of all ENDCR's for their information and
3 use regardless of whether their signature was required
4 during the review process.

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1 Q Gentlemen, going back to the bottom of page 3,
2 the nonconformance and disposition --

3 JUDGE BRENNER: Mr. Lanpher, before -- are you
4 finished with the E&DCR's for now?

5 MR. LANPHER: Yes, sir.

6 JUDGE BRENNER: I want to discuss something
7 with the Board members and then I want to discuss
8 something with you and the other parties as to where we
9 are going and how we're going about it. So I want to
10 take a mini-break to talk to the Board for about five
11 minutes. Then I want to have another discussion before
12 the normal mid-morning break, so that you and everybody
13 else can consider what we say, if anything, over the
14 break.

15 So let's take about five minutes right now.

16 WITNESS EIFERT: Excuse me, Judge Brenner.
17 May I make one more comment?

18 JUDGE BRENNER: No.

19 WITNESS EIFERT: Okay.

20 JUDGE BRENNER: Don't go too far, particularly
21 counsel. I don't care about the witnesses.

22 (Whereupon, at 10:25 a.m., a brief recess was
23 taken.)

24

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1 JUDGE BRENNER: Together we are going to find
2 a better way of getting at the crux of what we think is
3 potentially important in this QA area, and we want to
4 get at it first, and that is the fact that in our view
5 an important part of the bases, and in fact the bases
6 for acceptance of the contention, as well as the thrust
7 of the substantive content of the allegations of
8 contention 12 in totality and most, if not all, of
9 contentions 14 and 15 are based on the allegation that
10 through the nitty-gritty occurrences alleged there is a
11 pattern of breakdowns and QA-QC problems that illustrate
12 a failure in ability or attitude or both to want to
13 correct the deficiencies.

14 And part of this is a reference to root causes
15 not being addressed, as opposed to symptoms perhaps
16 being addressed. What we've been hearing so far in our
17 view is questioning on construction-related,
18 design-related, non-operational-related QA-QC, much the
19 same as we would get at a construction permit
20 proceeding, which necessarily is predictive. And you
21 don't have any particular instances which form the basis
22 for the three contentions.

23 That may be useful for foundation later. But
24 right now its usefulness is not apparent when we
25 approach it in as abstract a fashion. We are not

1 interested in everything you could possibly ask, and we
2 are not afraid to ask about E&DCR's and the logs and so
3 on. To the extent some of this might become important
4 later because arguably the way LILCO states they used
5 these documents is inconsistent with particular
6 instances in which there was a failure in proper use,
7 then it will become important.

8 But we will see it applied, as opposed to this
9 whole abstract discussion. I have been putting
10 operating QA aside and will for purposes of this
11 discussion. I recognize a necessary distinction in
12 approach to contention 13, but I'm not talking about
13 that contention right now.

14 There is a 56-page cross-examination plan. It
15 doesn't get to the nitty-gritty, which we think is the
16 crux of what we are interested in learning, about
17 whether or not the QA-QC program is acceptable or
18 whether or not it isn't any good at all. And that
19 doesn't start until page 24. It only runs for a few
20 pages, with the indication that it's a reference that
21 you're going to go into these incidents. And obviously
22 it can be, it may well be, a lengthy examination, and
23 that's okay if you are bringing out important things.

24 But I note by saying that it is misleading to
25 think of the cross plan as only 56 pages, because it's a

1 lot longer if you consider what is going to occur in
2 those pages. We want you to go to that point in the
3 cross plan, get at these particular occurrences,
4 incidents, series of incidents, so we can stay alert,
5 stay keyed in with you, and follow along and hear the
6 allegations.

7 In particular, there has been a lot of
8 discussion throughout the course of the prehearing and
9 into the hearing stage of this proceeding that the
10 contentions on QA-QC were not specific enough. We are
11 past that point now, but now we are at the litigation
12 and it is time to get specific.

13 After going through everything you want to go
14 through, provided it is material and important, you can
15 then return to the area that I'm asking you to leave in
16 the beginning of your cross plan, if you think there are
17 some overall things in general about these documents and
18 so on that further explanation in the record would be
19 useful in your findings, to tie up to the incidents.
20 But we want to see in the first instance the QA program
21 as applied for these incidents that form the crux of the
22 allegations and the admission of those contentions.

23 And you can give us a reaction now or you can
24 give us a reaction after the break. In addition, I will
25 let you -- if it is too quick for you to adjust, I will

1 let you proceed the way you were until lunch break. Do
2 you want to think about it over the break?

3 MR. LANPHER: I would prefer that.

4 JUDGE BRENNER: The long and the short of it
5 is, we want to get to the nitty-gritty now, not next
6 week or two weeks from now. Then come back to the
7 overview and we can then more intelligently decide how
8 important it is to hear all these details. I'm afraid
9 we're getting a lot of details that are not going to be
10 used in findings at all. Maybe they are going to be
11 used, but by then we'll have a better understanding of
12 seeing where they might be used.

13 And to put it bluntly, all of this is
14 presumably for our benefit in the first instance and we
15 are not being helped. We are not getting a handle on
16 whether the QA-QC program is working as claimed by LILCO
17 or whether it's not working because of a pattern alleged
18 by the County of breakdowns showing that the root causes
19 have not been addressed.

20 All right, let's take the normal 15-minute
21 break this time, and we will come back at 10:55.

22 (Whereupon, at 10:40 a.m., the hearing was
23 recessed, to reconvene at 10:55 a.m. the same day.)

24

25

1 (10:55 a.m.)

2 JUDGE BRENNER: Mr. Lanpher?

3 MR. LANPHER: Judge Brenner, in response to
4 your remarks before the break, I must give my personal
5 belief that the examination that I was pursuing and have
6 outlined is relevant to laying a foundation for what
7 you, I think, aptly described as the nitty-gritty
8 discussion of pattern which is referenced on page 25 of
9 the cross plan.

10 My perception of the best way to go about
11 development of that pattern is first to lay the
12 foundation, as much also for my own benefit to find out
13 in various areas these witnesses' responses, their
14 perceptions, their understandings of various aspects of
15 the programs which later will be addressed in the audits
16 I am planning to go through.

17 I'm sorry that the Board disagrees with that
18 view or feels that there is another order of proceeding
19 that is preferable or, if I understand your comments --
20 and I do want to understand them -- is mandatory from
21 the Board's point of view for this quality assurance
22 examination.

23 JUDGE BRENNER: I didn't go so far as to say
24 it is mandatory, because I didn't have to go that far
25 until hearing your response, which we are hearing now.

1 MR. LANPHER: Well, I'm not trying to argue
2 with the Board. I understood it as, take until lunch if
3 necessary on other stuff, then I want you to go to page
4 25 and get us interested in those things.

5 JUDGE BRENNER: We are already interested in
6 those things and we want to go through them with you, if
7 you give us the details.

8 MR. LANPHER: I will be very honest. My
9 purpose is not to argue. I recognize the Board controls
10 the examination. I disagree, but if that is the Board's
11 desire I will revise the order that I had planned to
12 proceed in to address what you call the nitty-gritty,
13 the pattern argument. And as I disclosed to LILCO's
14 counsel, it is going to be based, not in whole but in
15 large part, with a review of certain audits.

16 For the Board's information, these are the
17 audits that I have. I can pass them out to the Board.
18 We have field quality control audits and we have
19 engineering assurance audits, and we are planning to go
20 through selected portions of a great many of those.

21 I have to say that one aspect of the Board's
22 remarks I find would put me personally, and perhaps the
23 witness panel -- they will have to speak for themselves
24 -- at an extremely severe disadvantage. And that is in
25 terms of preparation, to switch in the middle of the

1 game, so to speak.

2 Pursuant to your request yesterday, or the
3 Board's request, I informed Mr. Earley last night the
4 areas I was intending to cover, the documents I was
5 intending to cover. I did advise Mr. Earley of one
6 engineering assurance audit that I want to get to today,
7 but I did not advise him -- I did provide to Mr. Earley
8 all of these audits which I just showed the Board,
9 mainly a request to him to have his people look through
10 and make sure that our sets were complete. There are
11 some places where some things are missing.

12 This is getting long, so let me finish this
13 up. If you want me to go to the nitty-gritty, to go
14 through these audits and some other things that
15 establish the pattern, which I am willing to do, I'm not
16 prepared to do so immediately. I think I can be
17 prepared to do so tomorrow morning if I have time this
18 afternoon to rearrange my examination, to confer with my
19 consultant, and try to organize that into a very direct,
20 specific examination as to specific areas.

21 I do not have the details of exactly what
22 order, which audit, et cetera, I am going to go through
23 on each example. And given the volume of materials, I
24 think I would lose the Board again if I were to start
25 stumbling. I would like to have the afternoon to do

1 that and I will be prepared to go forward tomorrow
2 morning with this stuff.

3 JUDGE BRENNER: Okay. You have hit on an
4 aspect that I was worried about. I think it is very
5 fair of you to point out that it is difficult, at least
6 for you -- LILCO and the witnesses can worry about
7 themselves. But speaking for yourself, I certainly
8 perceive why that might be difficult.

9 I guess I felt you were going to get to it in
10 the next few days anyway, and therefore I had hoped that
11 you wouldn't state that you needed the entire afternoon
12 in order to do it tomorrow. I was willing to consider a
13 long break, even now, and then hoping we could come back
14 this afternoon on it at some point, being vague as to
15 the time purposefully.

16 MR. LANPHER: Judge Brenner, I seriously
17 considered my words before about when I could be ready
18 to do that. If I have the afternoon to prepare it -- I
19 mean, there's a very large amount of stuff.

20 JUDGE BRENNER: I know, and that's one reason
21 we were concerned. That is, we could have gone through
22 the way you were going for a week or a week and a half.
23 You knew the foundation you were building. But we would
24 have to search back in our memories to --

25 MR. LANPHER: That's true, Judge Brenner. I

1 thought I had specified in my cross plan how I thought
2 things like the E&DCR questions were relevant and
3 constituted foundation -- I think they are relevant at
4 any rate, since they are in the opposing testimony -- to
5 the areas that I was going to probe later.

6 I must say, though, that I need the
7 afternoon. I don't like to ask for adjournment just
8 after we have had a break. In that sense, I'm sorry to
9 ask for it. But with that afternoon we will be ready to
10 go forward tomorrow morning promptly.

11 JUDGE BRENNER: All right. We will hear about
12 that in a moment.

13 Let me point out that none of my remarks dealt
14 with relevance. They were rooted, if you will, in
15 efficiency, and it was expressly indicated that to the
16 extent that you felt you had to come back later in order
17 to tie together some of what you could term the
18 nitty-gritty, you could do that.

19 I just felt the foundation was, in terms of
20 our following things, was going to weigh down what it
21 was going to be the foundation for. The foundation was
22 perhaps going to be larger than the structure.

23 Are there things that you need to develop,
24 particularly narrow things that you need to develop, in
25 further foundation before going to the nitty-gritty? Or

1 is it premature to ask you that? I am not encouraging
2 that. In fact, as I said before the break, I prefer it
3 the other way.

4 MR. LANPHER: If we are going to go to the
5 nitty-gritty, I am sure there will be other preliminary
6 foundation questions that I will need to ask. They will
7 be kept to a very minimum, in light of the comments that
8 have been made.

9 So there are not a lot that I would want to
10 do. I can see -- I will just be blunt. I can see
11 foundation questions in the area of document control.
12 You have to have document control, don't you? Then
13 maybe I will try to prove that they don't have document
14 control, by going through nitty-gritty. That is
15 foundation.

16 I would prefer to lay much more foundation
17 than that, but I will leave that aside for now.

18 JUDGE BRENNER: Bear in mind that you are not
19 dealing with a jury trial, and some of us know a fair
20 amount about QA-QC. So some of the foundation -- and
21 that's not a reason for putting it expressly in the
22 record, but in terms of our following things we will be
23 aware of some of the very elementary foundation, and
24 then you can fill it in later.

25 If I had not butted in, am I right that you

1 would not have gotten to these particular instances
2 until the very end of the week, if that quickly? And
3 this is midday Wednesday.

4 MR. LANPHER: I think that's correct, sir.

5 JUDGE BRENNER: All right. I will hear from
6 the other parties and then I will talk to the Board.
7 The options are to break, come back tomorrow and go
8 right to the particular elements, or to continue as we
9 have been for today, because I think Mr. Lanpher is
10 correct that it would be unfair for the Board to force
11 him to go directly to those instances after just a very
12 short break when he wasn't planning to do that today.

13 And the recess today would include, after Mr.
14 Lanpher has gone through things, a conference with other
15 counsel as early in the day as possible as to what
16 documents he would be going into and the approximate
17 order of those documents.

18 MR. ELLIS: Judge Brenner, we have no
19 objection to Mr. Lanpher's request. We are prepared to
20 proceed in whatever way the Board deems is most
21 expeditious and an economic use of the Board's time.
22 Mr. Lanpher identified some documents last night. If he
23 has others that he's going to identify as early as
24 possible this afternoon, we will be prepared to respond
25 to him tomorrow if that's the way the Board wishes to

1 proceed.

2 JUDGE BRENNER: All right. I am interested in
3 your view, if you want to offer one, as to whether one
4 way is better than the other. You know, there is an old
5 adage about, you don't mind when the court jumps in as
6 long as they don't screw up the case. That's a loose
7 paraphrase.

8 And if I am missing something here from other
9 parties' point of view -- Mr. Lanpher has already
10 commented that he is willing to accommodate us, but he
11 believes that his approach was preferable. You don't
12 care?

13 MR. ELLIS: Judge, there are lots of ways to
14 skin the cat. I don't believe this cat is going to be
15 skinned anyway, but I don't have any comments about
16 various ways to do it.

17 I think getting to the nitty-gritty has a lot
18 of appeal to it. But as I say, in fairness to Mr.
19 Lanpher, it's not the only way to do it and I'm not so
20 sure I wouldn't have done it his way had I been doing it
21 as well.

22 JUDGE BRENNER: I did not bother noting, but
23 in fairness to him, he is taking it up not inconsistent
24 with the sequence of the way that LILCO chose to present
25 the testimony to a large extent. But that's neither

1 here nor there in terms of our current view.

2 Mr. Bordenick?

3 MR. BORDENICK: I have nothing substantive to
4 add to anything that Mr. Lanpher or Mr. Ellis or the
5 Board has indicated. I certainly have no objection to
6 Mr. Lanpher having the afternoon off. I think
7 essentially it puts him on the spot to come back
8 tomorrow morning and do what the Board has asked him to
9 do.

10 JUDGE BRENNER: I don't like recessing for
11 this long a period in the middle, but my hope would be
12 that in doing that, if we did it -- and I will confer
13 with the Board in a minute -- by losing a little time in
14 the short run, we would save time in the long run.
15 That's the same approach that has proved out on
16 settlements. It might prevail in this instance, too, in
17 a different context.

18 MR. ELLIS: I would be very disappointed to
19 learn that we go beyond two weeks anyway, even with this
20 attempt to get to the heart of the matter immediately.
21 So that is one of the advantages I see to what the Board
22 has proposed, that it will expedite matters.

23 MR. LANPHER: Judge Brenner, I think it was a
24 conference call last week, probably, where I expressly
25 said I could not promise to be done in two weeks. I

1 have no desire to drag it out. Enough said.

2 JUDGE BRENNER: I was going to say it for you,
3 that you did not promise to finish in two weeks. That
4 is accurate. We will deal with time in terms of how
5 efficient we think things are as we go along, rather
6 than having a predetermined block.

7 All right. Give us a moment.

8 (Board conferring.)

9 JUDGE BRENNER: All right, we will do it.
10 That is, we will recess and come back at 9:00 tomorrow
11 morning. This is a longer time period than we thought.
12 We had contemplated that more than the normal lunch
13 break would certainly be appropriate. And I suppose I
14 had in mind an extra two hours or so, and if we added
15 that onto a normal lunch break that gets us closer to
16 the end of the day, anyway.

17 And on reflection, I certainly cannot disagree
18 with Mr. Lanpher's view of the time he needs. And we
19 are also requiring some of that time to be spent in
20 conference with other counsel at an appropriate point,
21 which, Mr. Lanpher, should be early enough that the
22 witnesses have a chance to react and look at those
23 documents and still get a decent night's rest.

24 So hopefully you will be able to get back to
25 LILCO in the vicinity of 4:00 o'clock, give or take an

1 hour.

2 MR. ELLIS: Judge Brenner, we may need -- I
3 think Mr. Lanpher may already know what areas and
4 documents generally, because we may need to use some of
5 the working normal operating, normal business hour time
6 to find material. It's very difficult for us to do
7 things at 8:00 or 9:00 o'clock at night.

8 JUDGE BRENNER: Okay, that is a fair comment
9 by Mr. Ellis. So everybody do your best.

10 MR. LANPHER: I will consult with Mr. Ellis
11 shortly after lunch, right after lunch, and work up
12 until lunch on trying to do this.

13 Let me ask the Board, would the Board like
14 copies of these audits that we have? We are going to
15 place them in evidence. I have copies for the Board
16 now. I don't know if you would like them for your
17 perusal this afternoon or not.

18 JUDGE BRENNER: Yes. These are ones that you
19 are going to use in your time frame?

20 MR. LANPHER: Yes.

21 JUDGE BRENNER: Yes, we would like them if
22 they are available now.

23 MR. LANPHER: I have to get them from
24 downstairs.

25 JUDGE BRENNER: All right. Well, we will

1 learn from experience. We have not done this before,
2 but we hope it works out. I suppose if it doesn't Mr.
3 Lanpher can later say, I told you so.

4 We will recess now and come back at 9:00
5 tomorrow morning.

6 (Whereupon, at 11:15 a.m., the hearing in the
7 above-entitled matter was recessed, to reconvene at 9:00
8 a.m. on Thursday, September 16, 1982.)

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NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

in the matter of: LONG ISLAND LIGHTING COMPANY (SHOREHAM NUCLEAR POWER
STATION)

Date of Proceeding: September 15, 1982

Docket Number: 50-322-OL

Place of Proceeding: Hauppauge, N.Y.

were held as herein appears, and that this is the original transcript
thereof for the file of the Commission.

Susan Harris

Official Reporter (Typed)

Susan A. Harris

Official Reporter (Signature)