

ORIGINAL

OFFICIAL TRANSCRIPT
PROCEEDINGS BEFORE

NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

DKT/CASE NO. 50-322-OL
TITLE LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station)
PLACE Bethesda, Maryland
DATE December 21, 1982
PAGES 17,194 - 17,394

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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) :

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Bethesda, Maryland
Tuesday, December 21, 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 Applicant:

3 T. S. ELLIS III, Esq.
4 ANTHONY F. EARLEY, Esq.
5 DONALD P. IRWIN, Esq.
6 Hunton & Williams
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Richmond, Va. 23212

7 On behalf of the Regulatory Staff:

8 BERNARD BORDENICK, Esq.
9 DAVID A. REPKA, Esq.
Washington, D.C.

10 On behalf of Suffolk County:

11 LAWRENCE COE LANPHER, Esq.
12 KARLA LETSCHE, Esq.
13 Kirkpatrick, Lockhart, Hill,
Christopher & Phillips
1900 M Street, N.W.
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C O N T E N T S

<u>WITNESSES:</u>	<u>DIRECT</u>	<u>CROSS</u>	<u>REDIRECT</u>	<u>RECROSS</u>	<u>BOARD</u>
Lewis Narrow, Robert Gallo, and James Higgins (Resumed)					
By Mr. Ellis		17,239			
By Judge Carpenter					17,272
By Judge Morris					17,281
By Mr. Ellis		17,283			

(Afternoon Session...17,287)

Lewis Narrow, Robert Gallo, and James Higgins (Resumed)					
By Mr. Ellis		17,287			
By Mr. Bordenick			17,328		
By Judge Morris					17,343
By Judge Brenner					17,357
By Judge Morris					17,363
By Judge Carpenter					17,385
By Judge Brenner					17,390

E X H I B I T S

<u>NUMBER</u>	<u>IDENTIFIED</u>	<u>RECEIVED</u>	<u>BOUND IN TRANSCRIPT</u>
LILCO 53	17,294		17,297
LILCO 54	17,301		17,303
Staff 10	17,358		17,358

Resolution of Suffolk County Contentions -- Remote
Shutdown Panel.....page 17,198

RECESSES:

Morning - 17,238
Noon - 17,286
Afternoon - 17,342

P R O C E E D I N G S

(9:05 a.m.)

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3 JUDGE BRENNER: We are prepared to begin. I
4 gather from the persons present that you have decided to
5 go ahead with the preliminary matters of discussing the
6 status of pending settlements.

7 MR. IRWIN: That is correct, Your Honor.

8 JUDGE BRENNER: We have only one proposed
9 agreement which has previously been filed before us in
10 excuted form. We had expected to see more, and we
11 commented on that the other day and presumably we will
12 hear more in a moment.

13 The one we have is the Resolution of Suffolk
14 County Contention 1, Remote Shutdown Panel. It is
15 essentially acceptable to us and we're prepared to
16 approve it. I have only one very minor clarifying
17 question. Do you have the agreement?

18 MR. LANPHER: I forgot mine. I can look over
19 Don's shoulder.

20 JUDGE BRENNER: Page 9, numbered paragraph (4)
21 in part states, and I will paraphrase, that the
22 instrumentation and controls, which is the subject of
23 that paragraph by reference to other portions of the
24 agreement, will be installed prior to fuel load, or else
25 justification as to why the instrumentation and controls

1 will not be installed will be provided.

2 I take it that paragraph is not meant to
3 override footnote 2 on page 5 which denotes certain
4 indicators and controls which LILCO has committed to
5 have available prior to fuel load.

6 MR. IRWIN: I believe that is correct, Judge
7 Brenner.

8 JUDGE BRENNER: Do you want to check it?

9 MR. IRWIN: Let us assume that that is correct
10 unless I come back later today with a different view
11 from the LILCO engineers, but I believe that is correct.

12 MR. LANPHER: It is my understanding that that
13 is correct.

14 JUDGE BRENNER: Well, we can approve it at
15 this time, in that event. And once again, we commend
16 the parties, as we have in the past, for reaching
17 reasonable agreement on matters such as this. We can
18 approve it and bind it in the record at this point.

19 (The document entitled, "Resolution of Suffolk
20 County Contention 1, Remote Shutdown Panel," follows:)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of)	
LONG ISLAND LIGHTING COMPANY)	Docket No. 50-322 (OL)
(Shoreham Nuclear Power Station,)	
Unit 1))	

RESOLUTION OF SUFFOLK COUNTY CONTENTION 1 --
REMOTE SHUTDOWN PANEL

This Agreement among Long Island Lighting Company (LILCO), the Nuclear Regulatory Commission Staff (Staff), and Suffolk County (SC) (hereinafter collectively, the Parties) resolves SC Contention 1 in accordance with the terms stated below, subject to the approval of the Atomic Safety and Licensing Board (Board).

SC Contention 1 concerns the adequacy of the instrumentation and controls on the remote shutdown panel (RSP) at Shoreham. SC has alleged that the RSP instrumentation and controls associated with three systems controlled from the RSP (i.e., Reactor Core Isolation Cooling System (RCICS), Residual Heat Removal System (RHRS), and Service Water System (SWS)) are inadequate to provide indication of the operability of remotely

controlled pumps and valves within these three systems. SC has alleged that LILCO has failed to demonstrate that sufficient instrumentation and controls exist on the RSP to enable an operator to diagnose and mitigate a postulated single failure in each of the three systems identified above. As a result, SC has alleged that LILCO has not ensured the capability to achieve hot, and subsequently cold, shutdown of the Shoreham reactor from a location outside of the main control room, and therefore violates 10 CFR 50, Appendix A, GDC 19.

On October 6, 1982, the NRC Staff filed supplemental Shoreham Safety Evaluation Report (SER) input documenting its evaluation and resolution of SER Open Item 62, "Remote Shutdown Panel." This evaluation stipulated described actions which LILCO agreed to undertake to obtain Staff resolution of outstanding SER concerns regarding the remote shutdown panel.

Subsequent to the filing of the Staff evaluation, the County met with LILCO and the Staff to discuss the County's concerns. SC consultants have reviewed the Staff SER input evaluation and the LILCO commitments specified therein, as well as additional information requested of and provided by LILCO regarding the remote shutdown panel. SC consultants also performed a single failure analysis of RCICS, RHRS, and SWS equipment, instrumentation, and controls associated with remote shutdown, and have concluded that additional actions will be required of LILCO to satisfy the County's concerns.

By this Resolution Agreement, LILCO documents that it will take the steps described below, which respond to the concerns raised in SC Contention 1. SC has determined that LILCO's actions, detailed below, will respond to the matters set forth in SC Contention 1 and thus satisfy the County's concerns. In the County's view, these actions materially improve the RSP instrumentation and controls, and will ensure the capability to achieve safe shutdown of the plant from remote locations, assuming a single failure in the RCICS, RHRS, or SWS equipment controlled from the RSP. Accordingly, based upon LILCO's agreement to carry out these actions, SC finds that SC Contention 1 is resolved.^{1/}

As a result, the County, LILCO, and the Staff request the Licensing Board to accept this Resolution Agreement to terminate litigation of SC Contention 1. The details of this Resolution and LILCO's agreement to implement the actions specified herein are described below.

Subsequent to the filing of the Staff evaluation of the Shoreham RSP, SC consultants reviewed information provided by LILCO regarding the Shoreham remote shutdown panel. This information included a current listing of the instrumentation

^{1/} LILCO does not, by the fact of joining in this Agreement, concede either that the RSP as designed and installed at Shoreham failed to comply with any pertinent requirements or that the actions and undertakings agreed to herein, or any of them, were necessary to bring the RSP into compliance with such requirements.

and controls provided on the RSP, a single failure analysis of the remote shutdown system prepared by LILCO, and current remote shutdown system operating procedures to be used by the operator at the RSP.

The result of the RSP single failure analysis performed by LILCO was a listing of alternate system equipment, instrumentation, and controls, presently located at either the RSP or in the plant, that could be used to achieve hot and cold shutdown in the event of a postulated single failure. Single failures were analyzed for equipment, instrumentation, and controls associated only with those items of equipment, instrumentation, and controls located at, or controlled from the RSP. SC consultants have reviewed the results of the LILCO analysis, and concur with the following conclusions:

1. Sufficient redundancy of mechanical equipment exists in the plant for those systems controlled from the remote shutdown panel, assuming a total mechanical failure of any of these systems, to enable plant shutdown.
2. Sufficient control capability exists in the plant for alternate equipment credited to enable plant shutdown in the event of a postulated single failure. However, most of these alternate equipment control devices are located in locations remote from the RSP, and some are not easily accessible.

The NRC Staff has also reviewed the Shoreham remote shutdown panel and the alternate system equipment, controls, and indicators credited to achieve remote shutdown assuming a postulated single failure. The Staff evaluation, by which remaining concerns associated with SER Open Item 62 were resolved, concludes as follows:

The following additional instrumentation and controls must be provided in accessible locations remote from the main control room to enable safe plant shutdown assuming a single failure:

1. Safety Relief Valves - Provide controls for the Division II safety relief valves on a local panel in the relay room.2/

2. RHRS - Provide control capability for the RHR-A pump and valves from the Division I emergency switchgear room and the reactor building secondary containment, respectively.

Provide a RHRS-A flow indicator on a local panel.

3. SWS - Provide control capability for the SWS-A pump from the emergency switchgear room and control capability for valves from the screenwell pump house and reactor building secondary containment.

Provide a SWS-A flow indicator on a local panel.

4. Spent Fuel Pool Cooling System - Provide control capability for the SFPCS-A pump on a local panel.

5. Miscellaneous Local Indicators -

Provide:

a. Division II indicator for reactor water level.2/

b. Division II indicator for reactor pressure.2/

c. Division I indicator for suppression pool water level.

d. Division I and II indicators for suppression pool temperature.

2/ LILCO has committed that these indicators and controls will be available prior to fuel load.

Subsequent to the County's review of the information identified above, including LILCO's commitment to install the accessible controls and additional instrumentation required by the Staff, SC consultants have concluded that sufficient redundancy of equipment and controls exist in the plant to compensate for the single failure of any mechanical component or control relied upon from the remote shutdown panel. However, SC consultants also identified additional concerns regarding potential single failures of RSP instrumentation and system indicators associated with the use of the RCIC, RHR, and SW systems. These concerns can be summarized as follows:

1. Assuming a single mechanical, instrumentation or control failure in either RCICS, RHRS, or SWS, would there be sufficient redundancy and/or diversity of indicators on the remote shutdown panel to allow the operator to correctly diagnose such single failure?
2. Once diagnosed, would there be sufficient instrumentation on the remote shutdown panel to monitor the shutdown of the plant using the controls located at the panel?
3. If alternate, remote equipment and controls are needed to compensate for the given single failure, would sufficient instrumentation be provided in the plant to monitor the use of the alternate equipment for plant shutdown?
4. If alternate, remote equipment and controls are needed to compensate for the given single failure, should additional indicators associated with the use of the alternate, remotely-controlled equipment be provided for the operator at the remote shutdown panel?

To address these concerns, SC consultants independently performed a single failure analysis of system equipment, instrumentation, and controls associated with the use of the

RCICS, RHRS, and SWS from the remote shutdown panel. The analysis of single failures was performed in a manner coincident with the sequence of operator actions required for plant shutdown from the remote shutdown panel. SC consultants conducted the analysis in this manner to address the additional concern whether the remote shutdown system operating procedures were adequately written to address the effects of single failures which would require the use of equipment, controls, or indicators at remote locations.

The SC analysis concludes that additional instrumentation and controls are necessary to ensure safe remote plant shutdown in the event of a single failure, and thereby to meet the requirements of 10 CFR 50, Appendix A, GDC 19. SC consultants conclude that the following additional instrumentation and controls must be provided in accessible locations remote from the main control room:

1. All of the additional instrumentation and accessible controls identified by the Staff in its resolution of Shoreham SER Open Item 62;
2. Local indication of the SWS train "B" flow to the Reactor Building Closed Loop Cooling Water System (RBCLCWS) train "B" heat exchanger.

This additional indicator for field verification of service water flow through the RBCLCW-"B" heat exchanger has been determined to be necessary based on the potential single failure of the heat exchanger outlet valve located in the service water discharge flow path. SC consultants determined that

should this valve, or its position indicating light on the RSP, fail, field determination of service water flow through the heat exchanger will be required since no other indicator on the RSP provides this verification. This field indication of service water flow is necessary to ascertain whether adequate RBCLCW-"B" cooling of the RHR-"B" pump seal is being achieved, which is necessary for fluid temperatures greater than 212±F., such as those occurring during the RHRS shutdown cooling mode.

Furthermore, SC consultants have determined, through the methodology employed for the single failure analysis, that the Shoreham operating procedures for plant shutdown from the RSP do not adequately address the use of alternate equipment in the event of a single failure. The procedures of concern are:

1. SP 29.022.01, Rev. 2: "Shutdown from Outside Control Room Emergency Procedure"
2. SP 23.133.01, Rev. 4: "Remote Shutdown Control System"
3. SP 23.121.01, Rev. 2: "Residual Heat Removal (RHR) System"
4. SP 23.122.01, Rev. 2: "Service Water"

As a result of this analysis, SC consultants conclude that the County's concerns regarding the ability to achieve safe shutdown from the remote shutdown panel and other remote locations, if necessary, due to a single failure, are resolved by LILCO's agreement, set forth below, to institute the following additional actions:

1. LILCO will provide an accessible local indicator of SWS train "B" flow to the Reactor Building Closed Loop Cooling Water System train "B" heat exchanger.
2. LILCO will provide documentation of its commitment to install the additional instrumentation and controls identified by the County and the NRC Staff above.
3. LILCO will provide documentation of the location, type, display range, and power supply division of all additional instrumentation and controls identified above.
4. LILCO will provide documentation that the instrumentation and controls identified above will be installed on accessible, remote local panels prior to fuel load, or justification as to why such instrumentation and controls will not be installed on local panels prior to fuel load. LILCO further agrees that all instrumentation and controls identified above, but not installed prior to fuel load, will be installed by the end of the first refueling outage.
5. LILCO will update the following operating procedures to reflect the implementation of, and operator actions associated with the use of the additional instrumentation and controls identified above:
 - a. SP 29.022.01, Rev. 2 (9/7/82): "Shutdown From Outside Control Room Emergency Procedure"
 - b. SP 23.133.01, Rev. 4 (4/21/82): "Remote Shutdown Control System"
 - c. SP 23.121.01, Rev. 2 (6/11/82): "Residual Heat Removal System"
 - d. SP 23.122.01, Rev. 2 (1/31/80): "Service Water"

In addition, LILCO will incorporate into SP 23.133.01 (Remote Shutdown Control System), Section 8.1.6 (SWS Operation at RSP), a caution step advising the operator to be aware that a potential SWS-to-RBCLCWS leak path could occur during shutdown of the plant.

LILCO will supply the County with the revised operating procedures by the end of the first refueling outage, will provide SC consultants with an opportunity to review those procedures and provide recommendations, as appropriate, and will either implement such recommendations or, provide a written explanation

with respect to any such recommendations which it decides not to implement.

Based on the actions and undertakings of LILCO described above, SC considers SC Contention 1 to be resolved.

David A. Ripka
Attorney for NRC Regulatory Staff

David Rubin
Attorney for Long Island Lighting Company

Lawrence Co. Taylor
Attorney for Suffolk County

DATED: 12/14, 1982

CERTIFICATE OF SERVICE

In the Matter of
LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1)
Docket No. 50-322 (OL)

I hereby certify that copies of RESOLUTION OF SUFFOLK COUNTY CONTENTION 1 -- REMOTE SHUTDOWN PANEL were served upon the following by first-class mail, postage prepaid, by Federal Express (as indicated by an asterisk), or by hand (as indicated by two asterisks) on December 14, 1982.

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Atomic Safety and Licensing
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U.S. Nuclear Regulatory
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Washington, D.C. 20555

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DATED: December 14, 1982

1 MR. IRWIN: Judge Brenner, Mr. Lanpher and I
2 just talked about another agreement which we had thought
3 would be before the Board this morning and I, frankly,
4 don't know where it is. It is the ICC agreement. I
5 know that it has been agreed upon by all parties. I
6 know that it has been excuted by me on behalf of LILCO,
7 and I obtained SOC's proxy to execute it, and the County
8 has signed off it and somebody was supposed to be
9 physically carrying it up to the County's offices
10 yesterday, and apparently it did not get there. But it
11 is on its way and I can assure the Board that we will
12 find it.

13 MR. LANPHER: We were expecting to receive
14 that yesterday for what is just really an administerial
15 final read-through to make sure that there were no typos
16 or anything else that might have been changed, and we
17 have authorization to execute the agreement subject to
18 just reading it through a final time. But we didn't get
19 it yesterday. We're hoping we receive it today.

20 And Mr. Miller of my office can read it over
21 as soon as he receives it, and if there have been no
22 changes, we are going to execute it.

23 JUDGE BRENNER: All right. Get it to us as
24 soon as you can; hopefully, today, certainly by
25 tomorrow, and early tomorrow. And the fact that it is

1 executed gives us more confidence than we had yesterday,
2 although it is consistent with the prior confidence of
3 the parties that there would be no need to litigate the
4 matter. And we just want to make sure we have no
5 remaining problems.

6 Again, our purpose is not to take the week of
7 January 4th out of hearing unless we are absolutely sure
8 there is nothing to litigate that week, or reasonably
9 sure, at any rate.

10 We can take the other matters up in any order
11 the parties would like to discuss them.

12 MR. IRWIN: Judge Brenner, I think it might be
13 useful to take up the open SER item issues as the first
14 matter. And if the Board can't hear me, ask me to speak
15 louder. I've got a terrible cold and can barely talk.

16 Last Friday, Suffolk County, the staff and
17 LILCO met virtually all day and discussed environmental
18 qualification and seismic qualification. There is, as
19 the result of that meeting, a series of proposal still
20 in unwritten form on the table, but LILCO has advised
21 the county that with the exception of one of the issues
22 raised by its proposals, LILCO believes that there is a
23 probable basis for settlement.

24 As to that one remaining issue, we still need
25 to talk further with the county, and I don't want to

1 belabor the point with that issue this morning.

2 We have a meeting scheduled for later today on
3 the issue of containment isolation. It will begin about
4 10:30 this morning, in fact. The issue of electrical
5 separation -- excuse me, electrical penetrations was
6 also discussed last Friday, and the county's consultants
7 have taken some material home and are expected to be
8 conferring with LILCO and the staff this week further
9 concerning that issue.

10 My hope is -- and I will ask Ms. Letsche also
11 if she cares to comment on it -- that there is a
12 likelihood of settlement of the EP/EQ issues. I don't
13 have any feel yet for electrical penetrations. My own
14 feeling at this point is it is premature to move off any
15 of the dates that were at least tentatively established
16 for the filing of testimony until we can see what is in
17 writing.

18 JUDGE BRENNER: Ms. Letsche, did you want to
19 comment? Welcome back, incidentally.

20 MS. LETSCHE: No, I don't really have any
21 particular comments. I agree with what Mr. Irwin has
22 said. The parties do have some further discussing to do
23 on all of the issues, but those discussions are moving
24 along.

25 JUDGE BRENNER: Now, I take it the staff

1 reports will still issue on the dates we confirmed; that
2 is, by December 30th.

3 MR. REPKA: That is correct.

4 JUDGE BRENNER: So that the first key date
5 will occur after that. The next key date is January
6 18th for testimony on environmental qualification and
7 seismic qualification, and we have not precluded
8 applying the January 18 date to electrical penetrations,
9 particularly if the other issues are settled. And
10 perhaps even if the other issues didn't settle.

11 We are a little concerned as to although the
12 parties agreed to the schedule and we are prepared to
13 approve it given the parties agreement, we are a little
14 concerned that the time is very tight between the filing
15 of testimony and litigation on some of these issues.
16 And we think some of the pressure could be alleviated at
17 that portion of the schedule for the benefit of the
18 Board and the parties on the electrical penetrations
19 issue.

20 Mr. Lanpher, when we last discussed this a
21 couple weeks ago, discussed the potential problem of the
22 same county witnesses working on the testimony on both
23 issues, and it surprised a little, given the background
24 time over the past many weeks of involvement by all
25 parties, but we deferred it until today thinking that

1 time might have partially cured the problem. So I guess
2 we would ask the county now what the situation is.

3 MS. LETSCHE: I don't think the situation at
4 this point has changed, Judge Brenner. The reason for
5 the schedule that parties agreed to was that the
6 environmental qualification discussions were further
7 along -- that is still the case -- as compared to
8 electrical penetrations. There has been new material
9 made available on the electrical penetrations issue
10 which is now being reviewed and will be discussed in the
11 very near future.

12 It might be that if the discussions progress
13 the way -- towards settlement that we might be able to
14 adjust the dates the way the Board has suggested. But I
15 don't think either of us -- and Mr. Irwin and I
16 discussed this this morning -- are in a position to say
17 that that would be appropriate at this time.

18 The reason also that we agreed to the dates
19 that we did agree upon was to provide the maximum amount
20 of time to devote to either resolving or narrowing the
21 issues. And I think it would still be useful to leave
22 that time there, at least now, to pursue that goal. And
23 a little further down the road when we see where we get,
24 at that point consider adjusting the dates.

25 MR. LANPHER: Judge Brenner, if I could add in

1 partial response to your inquiry since I made the
2 previous comments about witness availability. I must
3 say that the situation has not gotten better. I mean,
4 Mr. Minor has been working on all of these matters
5 outside of the hearing.

6 Mr. Hubbard -- we will finally have testimony
7 later today on Torrey Pines, and he, for obvious
8 reasons, has been tied up on that recently and still has
9 just not had the time to get back into these other
10 issues. Hopefully, he will over the next couple of
11 weeks, but his deposition is next week and he will be
12 involved in that. So it is going to be very tight, his
13 time availability to work with Mr. Minor, who is going
14 to take the lead in the county's presentation on this
15 just because there is no other way.

16 I would add that moving up the schedule of
17 testimony would be a hardship for a further reason that
18 while we are moving along on the findings, which are due
19 I guess for the county on the 20th of January -- I think
20 that is the date the Board set -- for obvious reasons we
21 would want our consultants to be involved in reviewing
22 them and giving comments, and that is another factor or
23 item of work that they are all involved in at this time.

24 So recognizing the Board's concern about the
25 18th of January, I must say that I think it is an

1 extraordinarily tight schedule for everyone involved,
2 given the multitude of various work that has to be done.

3 JUDGE BRENNER: All right. We're inclined to
4 let the parties draw the bounds. It was just our
5 concern that you would have problems on the other end,
6 but I guess partially because of the involvement at the
7 front end that will be relieved; that is, you're
8 unlikely to be terribly surprised by the nature of the
9 testimony in general.

10 All right, we will approve electrical
11 penetrations on the week one later schedule; that is the
12 schedule proposed by the parties of testimony filing on
13 January 25th and then everything keyed off of that.

14 Now, if environmental qualification and
15 seismic qualification are settled, we wouldn't, unless
16 the parties were willing on their own, we wouldn't order
17 that electrical penetrations be moved up a full week.
18 But you might want to adjust it by a day or two. That
19 is, back it up by a day or two in order to leave some
20 other time for filing.

21 And when you consider that, consider also that
22 we have to make some minor adjustments in the
23 previously-proposed and approved schedule since we will
24 be in hearing Monday through Thursday rather than
25 Tuesday through Friday. And as Mr. Lanpher noted, and I

1 hadn't thought of it until he raised it, there are some
2 logistical problems which can be handled easily, but you
3 have to consider them.

4 And we indicated when we discussed this that
5 we would be willing to keep the same dates for the
6 filing of cross plans; that is, the Monday. We will
7 take the cross plans that day to take some pressure off
8 the parties. But obviously, the motions would have to
9 be argued on the Monday, not the Tuesday.

10 And it is our firm hope, given this tight
11 schedule, that any motions to strike -- first, we hope
12 they would not be necessary given the negotiations among
13 the parties. Second, if they are necessary, we hope
14 they are narrow and focused and well founded, because if
15 there is extensive -- that is, extensive in scope --
16 motions to strike, the parties are going to have
17 difficulty being prepared to respond in a short
18 timeframe, and we will have less time than normally we
19 would like to deal with matters if they are complex. If
20 they are simple, it won't be a problem.

21 We will let the parties adjust the days and
22 let us know what the adjustment is. We do not want to
23 dispense with receiving a written reply. It can be
24 skeletal, as we indicated. And I guess as a minimum, we
25 will have to back the filing of the motions to Thursday

1 rather than Friday and then get a response in our hands
2 by late afternoon Friday in Bethesda.

3 What is the goal for the parties to decide
4 wheter you're going to settle that or have to file
5 testimony on it?

6 MS. LETSCHE: As far as I know, we haven't
7 agreed upon a date, Judge Brenner. The experts involved
8 have been doing a lot of talking and we anticipate that
9 will continue and at some point, we will know. But we
10 don't have a date right now.

11 JUDGE BRENNER: If you don't know by the first
12 full week in January, you will obviously have a problem.
13 Am I right? Or do you think you can take it past that
14 week?

15 MS. LETSCHE: Well, with respect to
16 environmental qualification, I would imagine that by
17 that timeframe we will at least -- we will have a better
18 idea than we do now. And we will make the judgment as
19 we have on the other issues in the past, and we will
20 inform the Board where we think we are going. Maybe at
21 that point we will have narrowed it down to one issue;
22 maybe we will have narrowed the whole thing away, or
23 maybe we will know that we're going to have to litigate
24 the thing.

25 JUDGE BRENNER: I think you've covered the

1 full range.

2 MS. LETSCHE: I don't know what else I can
3 tell you. We will let you know and keep you informed,
4 and I'm sure we'll be able to tell you more by that time.

5 MR. IRWIN: Judge Brenner, for LILCO let me
6 add that I share Ms. Letsche's difficulty with pinning
7 down an exact date. We do think, though, that the
8 process of keeping active tabs on the progress of these
9 discussions is very useful, and we would welcome the
10 Board's continuing surveillance of them. Not that we
11 don't think the parties don't feel the heat of the
12 frying pan from several weeks away, because we do. But
13 it is sometimes useful to have to summarize one's
14 thoughts.

15 JUDGE BRENNER: Well, we are going to pick a
16 date to report back, but not for that reason. The
17 reason is so we know what is going on. But I want to
18 pick a date that is fair, and I don't want to go through
19 another preliminary report again.

20 Would Thursday, January 6th be a fair date?
21 We would have to receive something in writing. We won't
22 be in hearing that week. At least, it looks now like we
23 won't be in hearing that week. And we would like the
24 report to be joint, so I want to give you time to
25 coordinate it as well as to meet on the issues. And I

1 would like not to take time out of the litigation next
2 week when we have the Torrey Pines witnesses before us.

3 MS. LETSCHE: Judge Brenner, the 6th would be
4 fine. I don't think next week would be very helpful.
5 There is not much time between now and then. The 6th is
6 fine with us.

7 JUDGE BRENNER: All right. If you can report
8 earlier than the 6th definitively on environmental
9 qualification, we would appreciate it, but we would
10 expect a definitive report as to whether it is settled
11 or not settled or whether some part is not settled, even
12 if you do not have the actual draft agreement, although
13 it would be very helpful to have that by that time,
14 also, for your purposes as well as for ours.

15 Along with that report, although we would not
16 necessarily expect it to be definitive on the other
17 issues, we would like to hear what has occurred on the
18 other issues of electrical penetrations. And I guess
19 containment isolation, to the extent you know anything
20 more about it.

21 All right. What next?

22 MR. IRWIN: I have an easy one. On Suffolk
23 County Contention 24, Cracking, the members of the Board
24 asked two questions. Dr. Morris asked a question about
25 the interpretation of error bands on December 7th, and

1 then on December 10th Judge Carpenter asked a question
2 about the relationship between the ALARA program and
3 IGSCC.

4 LILCO and the county and the staff have
5 discussed answers to those two questions and I have put
6 them in the form of a letter which I will circulate to
7 the Board and parties this morning. I hope that will
8 put that one to bed.

9 On ECCS cutoff and restart, which is one that
10 has been hanging --

11 JUDGE BRENNER: I'm sorry. While you are on
12 materials cracking, maybe we should discuss item 1 of
13 Mr. Repka's letter. We have been concerned that the
14 timeframe was opened with respect to the discussion
15 on the differing professional opinion of Mr. Hallipats'
16 and the parties assuring that although they had no date,
17 it was not really opened. And that is why we wanted
18 to hear again today on that.

19 Mr. Repka?

20 MR. REPKA: As I stated in my letter, the
21 written resolution the staff is preparing is nearing the
22 final version, and we think it will be out in the next
23 week or so.

24 JUDGE BRENNER: I forget what dates we
25 discussed keyed off the staff's issuance. We had, I

1 remember, varied the county's proposal, that if they
2 wanted to file something we wanted it in one bite rather
3 than first arguing that it was within the contention and
4 then coming back a second time and arguing why we should
5 it consider it anyway. And I'm embarrassed to state I
6 just don't remember whether we carried the schedule
7 discussions any further at that time, given the
8 uncertainty of the staff's finishing input.

9 MS. LETSCHE: No, I don't recall that there
10 were any particular dates set or that it went any
11 further, Judge Brenner.

12 MR. IRWIN: I simply assumed that whatever
13 dates were fixed in the agreement for filing the first
14 paper, that it would now be both parts of whatever the
15 county would argue rather than having one part and then
16 a response, and then the second part later.

17 JUDGE BRENNER: That's right. That is what we
18 said, but I'm wondering about the date now.

19 MS. LETSCHE: I don't think we discussed that
20 because everyone basically was in the position of
21 waiting for the staff materials, and we were going to
22 discuss the specifics after those came out.

23 JUDGE BRENNER: Well, we won't have the
24 benefit of being able to discuss this on the record
25 again after this week until January 10th, if things go

1 the way we hope they go. And I don't know if we want to
2 let it lag that long before we discuss it again. What
3 did the parties have in mind in terms of a timeframe?

4 MS. LETSCHE: Judge Brenner, I think, in
5 answer to your question, we're going to have to see what
6 it is that the staff comes up with, frankly. What it
7 is, how extensive it is, how much review will be
8 required by all the parties to deal with that.

9 JUDGE BRENNER: Well, to a very large extent,
10 our thought was that all parties were staying closely
11 informed as to what the substantive situation was,
12 subject, of course, to the fact that you have to see
13 what the staff says. But it shouldn't be a brand new
14 learning process.

15 MS. LETSCHE: Well, in fact, what has happened
16 is there was one meeting that was held in mid-November,
17 I think about the 15th or 16th of November, that all the
18 parties did attend. At that time, it was understood
19 that the staff resolution would be out in about two
20 weeks. Since that time, at least as far as the county
21 is concerned, we have not been involved in anything
22 further. And it's my understanding that that is because
23 all that is happening now is staff internal discussions
24 and preparation.

25 So that is the fact of what has been

1 happening. We have been trying to obtain some pertinent
2 documents that were referenced at that meeting and
3 haven't been able to do so yet.

4 JUDGE BRENNER: We told you we would help you
5 on that quite sometime ago. These are the same
6 documents and you never came back for help, so I thought
7 you didn't need it.

8 MS. LETSCHE: I didn't understand that I was
9 going to have any problems. I think it is just a
10 logistical problem of getting them.

11 JUDGE BRENNER: Well, I'm concerned about a
12 logistical problem since November.

13 MS. LETSCHE: These aren't the same documents
14 we talked about back in November.

15 MR. REPKA: I would just add that, if it helps
16 all of the parties and the Board, the substance of the
17 staff resolution that is being written up has not
18 changed. It is what was agreed upon in that meeting. I
19 don't think it will contain any surprises.

20 MR. IRWIN: Let me get a little more specific
21 about it. As LILCO understands it, the substance of the
22 staff's resolution is going to involve institution or
23 recommendation of an in-service inspection program
24 similar to that being used now at the Monticello plant.
25 That program was discussed at that meeting.

1 There are -- I think the only question really
2 is what is the authoritative version of that document.
3 I think all of the parties have seen that and have heard
4 discussion of specific aspects of it. The only reason I
5 raise this is that I don't think that there is a
6 tremendous amount of uncertainty as to what it is going
7 to involve, and I do not think, frankly, that it would
8 take a terribly long time for people to review it when
9 it comes out. I hope that we will be able to get copies
10 of that plan before the end of the year, because we
11 share the same concern that the county has, of making
12 sure that there aren't any surprises in it. But I don't
13 think the likelihood is very high.

14 JUDGE BRENNER: Well, in setting a date for
15 the formal filing by the county if they want to advance
16 a contention, I do want to leave time for further
17 discussions among the parties, since that might avoid
18 the need for the county to file a formal contention, or
19 it might narrow the scope of the contention. So at
20 least the county could know clearly what it has to
21 litigate if it has to litigate something, and can have a
22 fairly well-focused contention with the appropriate
23 bases and well-focused arguments as to why we should
24 consider it for either or both of the alternative
25 reasons that it is within the contention or there is

1 some reason why we should consider it anyway.

2 And I am also concerned, -- in addition to the
3 concern of giving the parties time to have that
4 discussion, I am concerned about allowing time for a
5 response if the county does file something and still
6 being able to litigate this in the January to early
7 February timeframe, if we have to litigate something.

8 MS. LETSCHE: Judge Brenner, perhaps we could
9 report back to the Board on the 10th of January, which
10 assuming the staff report comes out by the 30th of
11 December, would give people a chance to have reviewed it
12 and maybe even have had a discussion or something about
13 it at that point. And depending upon where the
14 discussions are then, go on and set further dates.

15 MR. IRWIN: I thought that was on the 6th.

16 MS. LETSCHE: That's when we're filing the
17 joint report on the other thing. What I was suggesting
18 was the 10th, which is the following week, only because
19 if the staff report isn't going to come out until the
20 end of December, you're only talking about a couple of
21 days if you tried to do it by the 6th.

22 JUDGE BRENNER: Well, let's think about what
23 we should do on the 10th. The 10th is not a bad date
24 for certain things, but if we first decide then that the
25 county has additional time beyond that to file something

1 formally, we're starting to get later into the month
2 than we would like.

3 Why don't we do this, Ms. Letsche -- we will
4 accept that suggestion of getting a definitive report in
5 -- and it can be oral -- but a definitive report on the
6 10th as to whether the county is going to formally
7 advance a contention, and you have to decide by the 10th
8 whether you're going to do it. However, we wouldn't
9 require the formal filing with the arguments in support,
10 as we discussed last time, until Friday, the 14th.

11 And obviously, you will know even before you
12 tell us on the 10th whether you're going to have to be
13 working toward that 14th date, so it is not as if the
14 only time we are giving you is between the 10th and the
15 14th. And that would be received by the Board and the
16 staff and applicant on the 14th. And we will set a
17 response time of the 21st for the staff and LILCO.

18 MS. LETSCHE: Judge Brenner, I assume that
19 this schedule is based on the staff's report, in fact,
20 being issued by the end of December.

21 JUDGE BRENNER: Yes.

22 MS. LETSCHE: Could I also request, then, that
23 in addition to the staff's resolution, that the county
24 be provided at that time with a copy of the Monticello
25 test program, which is what we have been trying to

1 receive since that November meeting? It will be
2 important to review that so that we can make sense out
3 of the staff proposal.

4 JUDGE BRENNER: Why haven't you been able to
5 get that since November?

6 MS. LETSCHE: I am not sure. The staff has
7 told me that they believe it is proprietary and they
8 need to have somebody's permission before it can be
9 turned over. And in discussions with Mr. Irwin, I think
10 he has tried to determine whether or not LILCO's copy
11 can be turned over, and in what form it's in. I just
12 haven't received it.

13 MR. IRWIN: We just don't know which version.
14 We understand the Monticello program has been through
15 more than one iteration, and we don't know whether the
16 program version we are working from is the same one the
17 staff has been discussing.

18 JUDGE BRENNER: That doesn't sound like a
19 problem material to getting it to the county, though.

20 MR. IRWIN: I don't want to give them a
21 document that is not worth anything. It is also
22 proprietary. That is not the problem. Our problem
23 simply is trying to find out what document the staff is
24 going to be working from in its resolution of the issue.

25 JUDGE BRENNER: Well, I will tell you what. I

1 suggest that the staff and LILCO solve that problem by
2 December 30th, along with turning the report over to the
3 county, because if that problem isn't solved, these
4 dates are off.

5 MR. IRWIN: We have a mutual interest in
6 solving that problem.

7 JUDGE BRENNER: You do now. If you have
8 legitimate reasons for not turning it over to the county
9 we will discuss them, but not on this timeframe.

10 MR. IRWIN: Nobody is withholding anything,
11 Judge Brenner. We're just simply trying to figure out
12 what the staff is working from.

13 JUDGE BRENNER: It sounds like you're
14 disgorging things rather slowly, though.

15 All right. We will hear on January 10th. By
16 December 30th we will receive a copy of the staff's
17 report if it's ready by then. If it's not ready by then
18 we will have to readjust the dates.

19 MR. IRWIN: Judge Brenner, forgive me for
20 coming back to something but I don't want to leave any
21 kinds of inadvertent implications about people not
22 disgorging things. The first request that anybody
23 really received, as I recall, was the middle or late
24 last week. We had discussed the fact of a Hallipat's
25 resolution. But I'm really quite serious about this.

1 We have not been sitting on a document. We don't know
2 exactly what the staff has been working from and the
3 staff has not been sitting on anything either, as far as
4 I know.

5 JUDGE BRENNER: Ms. Letsche told me -- you
6 asked for it in November?

7 MS. LETSCHE: Yes, we requested it at the
8 meeting that was attended by the staff and the county
9 consultant and, I believe, LILCO representatives. At
10 the time, Mr. Bridenbaugh requested that it be provided,
11 and there was never anything provided, and I did follow
12 up on it last week.

13 JUDGE BRENNER: All right. Let me save the
14 parties some bad feelings and further discussion. My
15 comments were predicated on the theory that it had, in
16 fact, been requested in November. If that is not the
17 case, my comments don't apply. Moving beyond that, if
18 you don't get them the report -- and it sounds pertinent
19 based on the summary that Mr. Repka just gave us a
20 moment ago as to the Monticello plant's relationship to
21 the resolution for Shoreham -- if you don't get it to
22 the county by December 30th, then we're going to have to
23 readjust these dates.

24 Now, it might be we would keep the January
25 10th oral report date anyway, if things are only a few

1 days late. But we might have to adjust the formal
2 filing dates.

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1 Now, Mr. Irwin, you wanted to move on to some
2 of the other matters?

3 MR. IRWIN: On the ECCS cutoff restart issue,
4 there is, I believe, simply one. There is a draft
5 agreement which is being discussed by Suffolk County and
6 LILCO at the moment. There is exactly one issue
7 remaining, I think, on that draft agreement. And like
8 many other things, it involves proprietary information,
9 as to which there is no difficulty getting discourse.
10 It's simply a logistic problem in obtaining the
11 clearance.

12 We are working on that right now. My feeling
13 is very strong that that issue is susceptible of
14 resolution in the very, very near future. If we get the
15 information and we fail to reach agreement, we will
16 advise the Board.

17 JUDGE BRENNER: Well, if we don't set
18 litigation by tomorrow for the week of January 3rd,
19 there isn't going to be any litigation that week. In
20 other words, we don't want to hear next week that we
21 need to set litigation.

22 MR. IRWIN: We're not asking the Board to set
23 litigation for the 3rd on that issue.

24 JUDGE BRENNER: Let me ask the County if they
25 agree with your optimism.

1 MS. LETSCHE: Yes, I do.

2 JUDGE BRENNER: Okay. We will wait to hear
3 further from you on your schedule.

4 MR. IRWIN: On the issue of electrical
5 separation, that again has I think boiled down to one
6 question, as to which Mr. Lanpher and I, both of whom
7 have been harassed lately, have been exchanging
8 thoughtful but fragmentary pieces of information. I
9 think the issue is now sufficiently narrow that we will
10 be able to get back to the Board, I hope, this week with
11 a final resolution of it. Whether that is a resolution
12 or a denouement or whatever, I'm not sure.

13 If we reach a resolution in the sense that
14 that term has been used in this hearing, we believe, I
15 think it is safe to say, that there will be some slight
16 modification to the agreement. Maybe Mr. Lanpher would
17 want to comment further on that.

18 I see a need from LILCO's standpoint to come
19 to a conclusion on it because the inspection is going to
20 have to be begun, and that is why we are working as best
21 we can on it right now.

22 MR. LANPHER: Judge Brenner, I think maybe it
23 is appropriate on this item to give the Board a little
24 more background, without getting into a lot of
25 nitty-gritty details. This post-August discussion

1 started with a concern over the adequacy of the
2 procedures for conducting the inspection. That is
3 really not an issue at this point.

4 What has come up in the course of these
5 discussions is a concern on both sides, frankly, that
6 some of the terms of the agreement as initially
7 negotiated -- and they were negotiated very carefully
8 and at great length, because the electrical separation
9 area is awfully complex, as we've heard.

10 JUDGE BRENNER: If you don't work it out we're
11 going to litigate it anyway, the way things are going
12 this week.

13 MR. LANPHER: This is getting into a lot more
14 detail than what I have been asking Mr. Higgins, but
15 there is a need, frankly, to change certain provisions
16 in the agreement. At least, LILCO has urged that we
17 change some things and, subject to some agreements by
18 LILCO, the County has tentatively agreed to those
19 changes.

20 We are frankly going to go from one kind of
21 violation, if you recall the definition of violation, to
22 potentially three levels of violation, and these
23 negotiations have been complex because of the complexity
24 of the area. And Mr. Irwin and I have been talking and
25 he needs to -- we need to resolve one final item.

1 I was hopeful that by this morning that would
2 be resolved so that we could put it in final writing.
3 We have exchanged a good bit of information. I think we
4 understand the matters completely at this point, and we
5 have one request that we made to LILCO which this
6 morning they could not agree to tentatively. But Mr.
7 Irwin is hopefully going to have the opportunity to talk
8 with his client more today, and we had talked yesterday
9 about getting together after the hearing tonight, and I
10 don't know if that is going to be feasible for Mr.
11 Irwin. It is for me.

12 MR. IRWIN: It will be for me.

13 MR. LANPHER: And hopefully we will be able to
14 get back to you tomorrow.

15 There is an important disagreement right now.
16 I don't want to leave that impression otherwise, Judge
17 Brenner. But at the same time it is, I think, in the
18 mutual interest that we resolve that. Otherwise, we get
19 a big can of worms.

20 But it is much more than just the procedural
21 issue that we started out with back in October or
22 whatever.

23 JUDGE BRENNER: All right. That summary
24 helped me, because I was concerned about the results of
25 the inspections as they are going through and the

1 reports back. And as you may recall, we had expressed
2 some concern about the time frame that the Board would
3 be left with to decide certain things, and that led,
4 partially for that reason and also for other reasons, to
5 our desire for the involvement of Staff, which we have
6 discussed and resolved also.

7 There are time pressures on both ends. LILCO
8 wants to get on with the inspection. The County and the
9 other parties and the Board all want to know whether
10 there is going to be something to litigate. We will
11 wait until tomorrow, if that is what you are asking for,
12 and tell us what the situation is then. That's fine.

13 MR. IRWIN: I think that would be useful,
14 Judge Brenner.

15 MR. LANPHER: That is fine with me.

16 JUDGE BRENNER: All right, let's do that. And
17 also, if you are not prepared to tell us what the
18 situation is, at least mutually agree upon or attempt to
19 mutually agree upon what further procedural schedules or
20 framework we should expect in order to see when it might
21 be resolved.

22 MR. IRWIN: Judge Brenner, I think that is all
23 of the open items that come to my mind at the moment.

24 JUDGE BRENNER: All right. I have a few
25 more. We had given the County the opportunity by today

1 to disagree, I guess, essentially with the Staff's
2 letter regarding the lack of effect of their further
3 NUREG documents on the record before us on safety relief
4 valves and containment loads. And we have heard
5 nothing, so we assume the County is not filing
6 anything.

7 MS. LETSCHE: That is correct, Judge Brenner.

8 JUDGE BRENNER: We had also asked the Staff
9 today to file its supporting reasons as to why the open
10 item 47 in the SER could be deferred beyond the expected
11 -- well, I guess essentially beyond fuel load. We were
12 also concerned -- and we may not have articulated that
13 concern -- about beyond the expected closing of the
14 record of this case other than on offsite emergency
15 planning issues.

16 Mr. Repka, did you want to address that?

17 MR. REPKA: As I stated in my letter, we
18 learned yesterday from LILCO that they have reassessed
19 their schedule for responding to our request for further
20 analysis on multiple control systems failures. Given
21 the schedule they are now giving us, we have had very
22 little time to digest that schedule, but I believe,
23 given that schedule, if all goes well this would be
24 resolved before fuel load. If it does not, there will
25 have to be justifications provided at that time.

1 We just right now are just too unclear as to
2 what will really happen.

3 JUDGE BRENNER: Well, your proposal still
4 takes us outside the time frame of this record, and that
5 is why we needed the filing which we had directed that
6 we receive today. That is one of the reasons. If you
7 just received this yesterday from LILCO, you must have
8 had your filing ready.

9 MR. REPKA: Well, we have not gotten filings,
10 because what we would be doing here is, if it were going
11 to go beyond fuel load we would require justification
12 from LILCO and then, based upon that, we would assess
13 their justifications and then write up our own
14 justifications in an SER. And right now it just --
15 these are fast-breaking developments and people just
16 haven't had time to digest what they are doing here.

17 JUDGE BRENNER: Well, there were two things we
18 needed from the Staff, given the preliminary indication,
19 and it was admittedly preliminary, but it was an
20 indication that it might be acceptable for this issue to
21 be deferred beyond fuel load. And one was the effect of
22 lack thereof in the Staff's view or pertinence,
23 materiality or lack thereof in the Staff's view of this
24 SER open item and the contention we litigated, the
25 famous 7.B.

1 And the other matter was, aside from
2 materiality to the contention, whether it could be
3 deferred beyond fuel load. And this, we have received
4 nothing and we have received no advanced request to
5 defer that due date in light of this.

6 We can't do business this way. When we have
7 something set, we have to either have it filed or
8 reasons filed in advance as to good cause why it could
9 not or should not be filed. And in addition, the time
10 frame doesn't help us. You are not going to get LILCO's
11 filing until February 18th, maybe. That is their
12 estimate. We have seen estimates change over the course
13 of this proceeding, and that is only a preliminary
14 report from them and they have a final report 45 days
15 after.

16 We won't see the Staff report until certainly
17 beyond February, correct?

18 MR. REPKA: That is correct.

19 JUDGE BRENNER: Well, can we close the record
20 or can't we? That is the filing we wanted to receive
21 today, and then we were going to give the other parties
22 a chance to respond, and we might have focused our own
23 questions on the basis of the Staff filing to assist the
24 other parties in knowing what was of interest to us, so
25 the parties could include that in their response along

1 with anything else the parties wanted to include. And
2 now unilaterally the Staff has precluded us from doing
3 what we planned to do today.

4 MR. REPKA: At this stage we just don't have
5 the technical information to know what is going to
6 happen in the technical review. We would not be
7 fabricating the justification for going beyond fuel
8 load, and it is just not something that I could provide
9 this morning.

10 JUDGE BRENNER: What about the legal analysis
11 as to whether or not it is material to the contention?
12 We certainly could have seen that.

13 MR. REPKA: It is my understanding that it's
14 pertinence, we are not disputing its pertinence to the
15 contention. We do say in our 7.B testimony that the
16 item will be resolved, and so it is something that we
17 believe is pertinent.

18 JUDGE BRENNER: Well, there's no doubt that it
19 is generally relevant to the contention. The question
20 is more sophisticated than that, however. The question
21 is whether the state of the record, which includes some
22 discussion of the open items, as you just indicated,
23 whether the state of the record would permit a closing
24 of the record or at least whether certain parties would
25 urge that we proceed to reaching a decision on that

1 matter while this SER open item is still pending, and
2 whether the parties -- each party, of course, could be
3 free to argue the significance of whether that open item
4 is still pending.

5 But we want to make a preliminary
6 determination as to whether or not we could even go that
7 far. If it was obviously very material to some of the
8 issues and that there would be the obvious potential for
9 information to come forward later that is material to
10 our deliberations, then we might adopt a different
11 route, that is, require findings now but holding open
12 our decision, or perhaps even deferring certain parts of
13 the findings on it.

14 We set today -- well, we wouldn't defer the
15 findings on it, but the question would be whether we
16 would go further on an evidentiary record or further
17 written report before reaching a decision, and we also
18 wanted the parties to have the benefit of the Staff's
19 views now of the materiality or lack thereof to the
20 contentions, and that could be included in the parties'
21 findings, because under the findings, normal findings
22 schedule, the Staff's findings do not come until late in
23 the game, too late for the County to comment and too
24 late for LILCO to have a lot of time to comment.

25 And we had a lot of considerations in mind,

1 not all of which we articulated, when we set today's due
2 date, and I have just given you the advantage of some of
3 them, and we just can't deal with parties adjusting
4 schedules to their own liking or thinking that they can
5 modify matters which we have required without any
6 adverse impact on things that we have in mind.

7 If you had asked us in advance, we would have
8 told you why we still need something today, although we
9 might have taken out the technical support for the fast
10 fuel load portion for the reasons you indicate. We
11 still need the legal analysis, and it was appropriate to
12 ask that from the Staff in the first instance, given the
13 Staff's -- the fact that it is a Staff open item, and
14 the Staff is filing it and the Staff undoubtedly has the
15 benefit of more information at this point as to what
16 might transpire.

17 Do you have any suggestions, anybody?

18 MR. LANPHER: Judge Brenner, could I just ask
19 for one clarification? I understand the comments you
20 made about the legal analysis, that aspect of filing.
21 My understanding -- and I didn't bring that previous
22 Staff letter, unfortunately, this morning -- was that
23 the implication of that letter was that it would be
24 acceptable to defer the item, and what the Board had
25 asked for was whatever technical justifications existed

1 as of that time to support that position, not to look
2 forward as to whatever filings LILCO might be putting
3 in. Is that correct?

4 JUDGE BRENNER: Yes. And in addition, we want
5 the legal analysis as to the arguments of materiality or
6 lack thereof.

7 MR. LANPHER: No, I put that aside. But in
8 terms of the technical side, it was whatever past
9 analysis on this kind of situation, so that people could
10 get an understanding of what the bases for that
11 suggestion in the Staff's past last letter was.

12 JUDGE BRENNER: Yes, that is part of what we
13 required, and we didn't limit the Staff to that,
14 though.

15 MR. LANPHER: Okay.

16 JUDGE BRENNER: I don't know if we expressly
17 said put that in, but we assumed that would be in there,
18 given the dialogue we had. I don't hear many
19 suggestions.

20 MR. REPKA: All I can say is that for the
21 first time I think I understand what it is the Board is
22 looking for, and we can go back and provide that for
23 you.

24 JUDGE BRENNER: When, given the fact that
25 LILCO's filing findings on January 7th and the County is

1 filing findings on January 20th?

2 MR. IRWIN: That was the 10th, I hope.

3 JUDGE BRENNER: Yes, January 10 for LILCO and
4 January 20 for the County and January 31st for the Staff
5 and February 7th for reply findings by LILCO. Sorry
6 about that.

7 The idea was to avoid another go-round, Mr.
8 Repka, and we may not have articulated that, but we
9 don't expect to have to explain in advance why it would
10 be annoying for parties to vary our dates without
11 telling us.

12 (Board conferring.)

13 JUDGE BRENNER: How soon can you get it to us,
14 "it" being the analysis, given the state of the record,
15 in the Staff's view as to whether we can reach a
16 decision on contention 7.B while this matter is still
17 pending, and why or why not, and also a reasonable
18 indication of the factors that would be pertinent to the
19 Staff's technical analyses as to whether this matter
20 could be deferred beyond fuel load, drawing upon what
21 the Staff has done and the other similar circumstances
22 which you informed us about, but certainly without any
23 commitment as to how the Staff would find on the
24 technical merits as to what it would do in this
25 instance, but nevertheless all the things the Staff

1 would look at.

2 The Staff would have to find A in order to
3 defer it or we would have to find that B and C doesn't
4 exist, and Staff has done that analysis before, as you
5 have informed us, and the parties are entitled to know
6 what the situation involved is so they can include
7 appropriate argument in their findings, so we know what
8 to do with the issue.

9 Because short of that one option which we
10 wouldn't like is just to defer everything until we see
11 what transpires many months from now, and I don't think
12 that is a prudent course of action.

13 MR. REPKA: We can try to have something by
14 the end of next week. I have to check into the
15 availability of cognizant counsel, but I believe we can
16 probably have something by the end of next week. Could
17 I get back to you?

18 JUDGE BRENNER: Yes, and why don't you talk
19 with the other parties, too. And our concern is for the
20 parties to have time. Now, admittedly LILCO has another
21 go-round in its reply findings, anyway. So if they are
22 a little tight between the time the Staff files its
23 views and reasons or LILCO's first findings, we will
24 treat this as kind of an advance adjunct to the Staff's
25 findings, so LILCO can pick it up in their reply.

1 But ideally, we would like to see it early
2 enough so that LILCO can pick up enough of it in its
3 first findings, because it could affect the organization
4 and some of the thrust of their overall findings on
5 7.B. I suppose LILCO also might be in a position to
6 know whether they're going to request deferral beyond
7 fuel load at the time of their findings. If LILCO knows
8 that by that early date, that would affect the findings
9 also.

10 In addition to getting back to us, Mr. Repka,
11 it might assist you, given the situation we are now in,
12 to try to find the best way out for all of us on the
13 schedule that we're concerned with, to talk with the
14 County and LILCO, of course, Staff cognizant technical
15 people, to figure out if you can decide now that there
16 will be no need for a decision beyond fuel load.

17 We can at least, if that is the case -- a big
18 "if," "if that is the case" -- nail down on the record
19 that it will be done prior to fuel load. That is, the
20 completion of the analyses and the Staff's review
21 thereof. If that is the case, that would render moot in
22 terms of the Shoreham proceeding that portion of what we
23 are interested in regarding whether or not -- regarding
24 what the pertinent considerations might be for deferral
25 beyond fuel loading, and then what you need to file can

1 be limited to whether or not we should anticipate having
2 to supplement the record on 7.B with this matter or
3 whether some or all of the parties want to argue that we
4 can go ahead and decide 7.B notwithstanding the pendency
5 of this matter.

6 So that might help you. Tomorrow might be our
7 last day on the record this week, and you can come back
8 to us any time while we're still on the record. I'm
9 sure we will be in session all day tomorrow, even if it
10 is the last day, I'm reasonably sure.

11 MR. REPKA: I will do that.

12 JUDGE BRENNER: I guess I'm sorry if we
13 weren't clear last time in what we wanted from the
14 Staff. We don't have the time in this proceeding to sit
15 back and issue written orders on every matter, and I
16 have not recently reviewed the transcript, but if
17 there's any doubt as to what we want come back and ask
18 us, and we will be glad to clarify. And we have just
19 got to avoid situations like this in the future, where
20 we are on a due date.

21 It is true that you have further information
22 on the item, but for the reasons we've discussed that
23 further information isn't sufficient to leave it
24 open-ended at this time.

25 The only other thing I had in terms of

1 miscellaneous matters is probably Mr. Ellis' as it
2 relates to QA/QC and we will wait until he is back up.
3 But I will remind him now that LILCO was going to get
4 back to us today on the form and schedule for a response
5 to the IE report items that we had mentioned. And I
6 have a note at transcript page 15,499, but I think on
7 reflection that is probably the page when we set the
8 schedule for today, rather than the initial raising of
9 the matter. So now that I think about it, that page
10 won't help you.

11 MR. EARLEY: Judge, I can answer that. We
12 have received a letter from the company addressing the
13 items that the Board was interested in, and we will file
14 that later today with a cover pleading.

15 JUDGE BRENNER: All right, and with the County
16 and the other parties also, of course.

17 We have nothing else by way of miscellaneous
18 matters. Mr. Repka, did the Staff have anything else?

19 MR. REPKA: No, we don't have anything else?

20 JUDGE BRENNER: The County?

21 MR. LANPHER: No, sir.

22 JUDGE BRENNER: Why don't we take a 15-minute
23 break.

24 MR. LANPHER: I have to make a phone call on
25 something and I may need just a couple of extra minutes,

1 on the testimony we're putting in later today. I just
2 have to get in touch with the office. Could we maybe
3 have until 10:30?

4 JUDGE BRENNER: All right, we will come back
5 at 10:30 and resume LILCO's examination of the Staff's
6 IE witness panel.

7 (Whereupon, at 10:15 a.m., the hearing in the
8 above-entitled matter was recessed, to reconvene at
9 10:30 a.m. the same day.)

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1 (10:30 a.m.)

2 JUDGE BRENNER: Let's go back on the record,
3 and we will resume the examination by LILCO.

4 Whereupon,

5 LEWIS NARROW,

6 ROBERT GALLO,

7 and JAMES HIGGINS

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

11 CROSS EXAMINATION -- Continued

12 BY MR. ELLIS:

13 Q Gentlemen, when we recessed yesterday I had
14 asked you to review the items Mr. Hubbard had in
15 attachment 5 to his prefiled testimony to confirm that
16 certain items that he listed as unresolved were in fact
17 closed, and I gave you the four that I thought had been
18 closed.

19 Have you had an opportunity to review that?

20 A (WITNESS HIGGINS) Yes, and those four were
21 closed in the report you indicated.

22 MR. ELLIS: Judge Brenner, I think when I gave
23 those yesterday I did read it into the record. I don't
24 know whether it's necessary to do it again.

25 JUDGE BRENNER: You did. At least I took

1 notes, and since I didn't invent the numbers you must
2 have read them in.

3 BY MR. ELLIS: (Resuming)

4 Q Gentlemen, can you give me an estimate or a
5 number of times that Shoreham has been inspected by
6 I&E?

7 A (WITNESS HIGGINS) Yes. In our prefiled
8 testimony on page 7 we indicated that from April '73,
9 which is the time Shoreham received its construction
10 permit, through June of '81, there were 100 -- excuse
11 me, June of '82 -- there were 147 inspections and 3
12 investigations.

13 Since June of '81 there have been about
14 another approximately 20 inspections. So that would
15 take it up to on the order of about 165, 165 to 170.

16 Q Were there other activities that were not
17 strictly speaking inspections that were also conducted
18 with respect to Shoreham?

19 A (WITNESS HIGGINS) Yes. We have included in
20 here some investigations, also. The most recent one
21 that some of the panel has been involved with was in
22 1979. Investigation 79-74 was an investigation
23 involving some 30 allegations and a total of about 400
24 inspection hours and involving several inspectors and
25 investigators.

1 In 1981 there was another investigation of
2 some allegations having to do with the service water
3 system, and in 1982 there was a special inspection which
4 was made as a result of some allegations that were
5 passed to the Board, to Region I from Mr. Hull.

6 Q So is it fair to say that, in addition to the
7 165 approximately of the normal programmatic inspections
8 and reviews that I&E has conducted at Shoreham, that I&E
9 has also conducted investigations into allegations from
10 various third parties?

11 A (WITNESS HIGGINS) We have included
12 investigations into allegations. Those three are
13 included in the approximate 165 total.

14 Q You indicated that one of the investigations
15 that you referred to consumed 400 hours. Did I hear
16 that correctly?

17 A (WITNESS HIGGINS) 410 inspection hours.

18 Q Would you characterize that and the other
19 investigations of allegations by third parties as
20 vigorous, thorough?

21 A (WITNESS HIGGINS) Yes. When we get an
22 allegation, we do a thorough investigation to determine
23 the validity of the allegation or not, in order to
24 satisfy us and to satisfy the public as to whether or
25 not the allegation is true.

1 Q Have any of these allegations been
2 substantiated by the investigations conducted by I&E?

3 A (WITNESS HIGGINS) Of the ones that I am
4 knowledgeable on, which is the last three I mentioned
5 and the three that I was personally involved with, none
6 of the allegations were substantiated.

7 Q Would your answer be the same, Mr. Narrow,
8 given your familiarity over a longer period of time?

9 A (WITNESS NARROW) Yes, it would, Mr. Ellis.

10 Q All right, gentlemen. Turn to attachment 3 of
11 Mr. Hubbard's testimony, which is a speech, testimony of
12 Chairman Palladino and also by Director Dircks. If Mr.
13 Bordenick doesn't have it --

14 MR. BORDENICK: I think they have it.

15 MR. ELLIS: Judge Brenner, I didn't orient the
16 panel, but it is I.C.

17 WITNESS HIGGINS: We have it, attachment 3.

18 MR. ELLIS: Yes, sir.

19 BY MR. ELLIS: (Resuming)

20 Q Now, if you look at attachment 3 on page,
21 beginning on page 12, Mr. Dircks addresses six specific
22 activities in the nature of changes to the I&E program
23 to increase the emphasis on the implementation of the QA
24 programs. Do you see that, sir, on page 12 and going
25 over to 13?

1 A (WITNESS GALLO) Yes, I see that.

2 Q All right. I would like to review each of
3 these with you in turn to see whether we can determine
4 whether these activities or suggestions by Mr. Dircks
5 have been applied to Shoreham. The first one replies to
6 resident inspectors; is that correct?

7 A (WITNESS GALLO) That is correct.

8 Q And as we know from Mr. Higgins' testimony,
9 Shoreham has had a resident inspector since 1979; is
10 that correct?

11 A (WITNESS GALLO) Yes. Mr. Higgins informs me
12 the resident office at Shoreham was established October
13 1st, 1979.

14 Q So with respect to the first suggestion by Mr.
15 Dircks, that change or remedy has been applied to
16 Shoreham; is that correct?

17 A (WITNESS GALLO) Yes, that is correct. As we
18 pointed out several times, Mr. Higgins is primarily a
19 preoperational testing inspector, but he did look at
20 numerous, obviously numerous final construction
21 activities and turnover activities and checkout of
22 equipment.

23 Q And an example of that is his participation in
24 the CAT inspection, which involved construction, is that
25 right?

1 A (WITNESS GALLO) Yes.
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1 Q All right, let's look at the second item. Can
2 you tell me whether that change or factor has been
3 applied to Shoreham?

4 A (WITNESS GALLO) I would say the NRC in
5 general has taken the posture of the regional office,
6 particularly, and let me speak for Region I, that the
7 enforcement policy now in 10 CFR 2, Appendix C, does
8 highlight much more distinctively construction sites and
9 even pre-operational testing type of violations and
10 categorizes those in the supplements, I guess they are
11 called, to Appendix C. So there has been a more
12 definitive emphasis by the NRC on trying to identify and
13 classify construction site problems and even
14 preoperational testing problems.

15 Q Is it fair to say, then, that that factor, the
16 toughening of the NRC's enforcement posture, has also
17 been applied to Shoreham?

18 A (WITNESS GALLO) The policy does apply to
19 Shoreham. There has been, though, as we discussed
20 yesterday, no elevated enforcement actions taken.

21 Q With respect to the third factor, am I correct
22 that that is a reference to such things as the CAT
23 inspection?

24 A (WITNESS GALLO) Yes, that is correct.

25 Q And as we know, Shoreham has also had the

1 benefit of that as well, hasn't it?

2 A (WITNESS GALLO) Yes. There was a CAT
3 inspection at Shoreham. Region I has conducted
4 construction assessment team inspections at, I believe,
5 all but one of our construction sites in the region.

6 A (WITNESS HIGGINS) I might just add to that,
7 this talks about the team program concept as it is
8 specifically applied to construction sites, but in
9 addition to the CAT inspection, we have in this year had
10 two other team inspections at Shoreham. One was the
11 emergency preparedness appraisal team inspection, and
12 the second one was the management and operational
13 quality assurance inspection that took place over the
14 last couple of weeks, and Region I has found the team
15 inspection concept to be very valuable.

16 Q And these are intensive --

17 JUDGE BRENNER: Excuse me. Let me digress,
18 but I will excuse the digression by saying it will be
19 very brief.

20 Which construction site within Region I has
21 not received a CAT inspection?

22 WITNESS GALLO: As far as I know, there is
23 one. That is Beaver Valley Unit 2. I'm sorry, there is
24 another one, Mr. Narrow informs me, and that is Hope
25 Creek. So that means that we have done Nine Mile 2,

1 Seabrook, Millstone 3, Limerick, Shoreham. I think
2 Limerick is in progress right now.

3 JUDGE BRENNER: All right, you have answered
4 my question. I thought maybe I missed something
5 somewhere.

6 Mr. Ellis.

7 BY MR. ELLIS: (Resuming)

8 Q These team inspections as noted here on page
9 13, are they properly characterized as intensive
10 inspections through a quality assurance program for
11 ongoing work? And I was reading that from the third and
12 fourth lines on page 13.

13 A (WITNESS GALLO) As you know, the Shoreham
14 inspection was a little bit different. It was billed as
15 an as-built inspection to look at the results of the
16 completed construction for the RHR system, so that
17 particular one did have a little bit different
18 direction, although they are all looking at QA programs
19 and program implementation, and in this case the results
20 of the construction activities and QA activities.

21 A (WITNESS HIGGINS) I would like to add to that
22 that the reason it was structured as it was for Shoreham
23 is that we felt at this stage of the game, since
24 construction was very nearly complete at Shoreham, it
25 would not be beneficial to go in with a programmatic

1 type of look, which is what this is discussing here, but
2 rather to look at the results of what the QA program
3 produced at Shoreham, and that was why we tried to do a
4 hardware or as-built inspection at Shoreham, because of
5 the stage of construction.

6 Q It was, however, an intensive inspection,
7 wasn't it?

8 A (WITNESS GALLO) Yes. As I indicated
9 yesterday, that inspection, some of the parts of the
10 inspection were two weeks, approximately, planning
11 before the inspection, and including the team leader
12 going to the site to obtain appropriate documents that
13 would be used for the inspection, two weeks at the site,
14 and a couple of weeks, at least, in preparing the final
15 report. And as I think we indicated in our SALP report,
16 that accounted for about 23 percent of the inspection
17 time on Shoreham for that period.

18 Q All right. The fourth item listed on page 13
19 of Mr. Dircks speech refers to what I will characterize,
20 although I will ask you to read it yourself, I will
21 characterize it as a reordering of priorities. Has that
22 occurred, and has Shoreham had the benefit or the effect
23 of this?

24 [Panel of witnesses conferring.]

25 A (WITNESS GALLO) Mr. Ellis, the NRC's

1 inspection program, we have discussed previously, as it
2 stands now was initially issued in the inspection type
3 format or inspection module format back in the middle of
4 1975. It has been revised significantly in their recent
5 past. The principal inspection procedures that are
6 being revised are the construction inspection
7 procedures, what this appears to be referring to, and
8 the operational activities, which is 2515, where we try
9 to take more account of the resident inspector
10 activities.

11 Some of the areas, in construction,
12 particularly, that would have been applied to Shoreham,
13 I guess, would be things like the welding area.

14 Q So, to the extent that it has been
15 implemented, its implementation has been felt at
16 Shoreham, then?

17 A (WITNESS GALLO) Yes, I would say so.

18 A (WITNESS HIGGINS) And that is to the extent
19 practical, for example, where some of the changes might
20 have involved inspections of pouring of concrete and
21 this type of thing. Obviously, those activities being
22 completed at Shoreham, these could not be applied. But
23 what we did do in those areas, we applied the inspection
24 program as it evolved over time at Shoreham.

25 Q Now, the fifth item on page 14 of Mr. Dircks'

1 remarks refers, I think, to the SALP. Is that right, Mr.
2 Gallo?

3 A (WITNESS GALLO) Yes, that is discussing the
4 SALP program.

5 Q So, as to that, that particular item has also
6 been applied to Shoreham?

7 A (WITNESS GALLO) That is correct.

8 Q And the final item, Item No. 6, refers to the
9 mobile laboratory for nondestructive examination, and I
10 think we have already had testimony that Shoreham has
11 also had the benefit of this kind of an inspection.

12 A (WITNESS GALLO) Yes, that was Inspection
13 Report 82-19. That documents that inspection.

14 Q So, would it be fair to say, then, that
15 Shoreham has had the benefit of all of these six factors
16 listed by Mr. Dircks to the extent they have been
17 implemented by I&E?

18 A (WITNESS GALLO) Yes, sir, to the extent that
19 we have testified here previously.

20 Q Earlier in his remarks Mr. Dircks uses the
21 term "quality assurance breakdowns" on page 3, and he
22 uses it in reference to Marble Hill, Zimmer, Midland,
23 South Texas and Diablo Canyon. Am I correct that Mr.
24 Dircks is there using the term "breakdown" to connote
25 serious matters requiring escalated enforcement?

1 A (WITNESS GALLO) Mr. Ellis, I don't want to
2 speak for Mr. Dircks' use of that particular term. I do
3 know some of the history behind those particular sites
4 and what type of elevated enforcement action was taken,
5 and I do know in particular that -- Zimmer, I guess, is
6 probably the best example. In November 1981, a \$200,000
7 civil penalty was issued and the penalty was issued
8 spread over three particular violations. There were two
9 Level 3 violations and one Level 2 violation, and since
10 that time in December 1982, just recently there was an
11 order issued by the Commission, and as I understand,
12 there was an order issued to show cause and an order to
13 stop construction at the Zimmer site.

14 Q Well, given that context, could you tell me
15 whether Mr. Dircks was there using the term "quality
16 assurance breakdowns" to mean a failure to meet the
17 requirement or an audit finding or observation or series
18 of them?

19 A (WITNESS GALLO) From what I know of the
20 cases, what we are talking about here is multiple
21 failures and multiple disciplines in construction areas,
22 and construction areas do vary from plant to plant, what
23 the particular problems were, and they were considered
24 to be safety-significant items.

25 Q Mr. Gallo, on several occasions in your

1 testimony, I think Mr. Higgins' as well, you have
2 indicated that determining whether a condition
3 constitutes a violation and, if so, the severity level
4 and other aspects require a judgment -- would you agree
5 with me -- and that that judgment has to be informed by
6 knowledge of the technical, safety and other
7 significance of the conditions involved?

8 A (WITNESS HIGGINS) Could you ask that one more
9 time, please, so we make sure we understand the question?

10 Q Yes. Would you agree with me that the
11 judgment that has to be made by the I&E inspector and
12 management in the review that you have described is a
13 judgment that has to be informed by a knowledge of the
14 circumstances of the condition, including some
15 appreciation of its technical and safety significance or
16 lack of significance?

17 [Panel of witnesses conferring.]

18 A (WITNESS HIGGINS) Just so we are clear, you
19 are talking about the judgment as exercised on what?

20 Q On determining whether something, a condition,
21 should be a violation, severity levels, that sort of
22 thing.

23 A (WITNESS HIGGINS) Yes, certainly in order to
24 make those decisions and exercise that judgment, it
25 certainly has to be informed with the various

1 circumstances surrounding the issue.

2 Q So where you indicated in your answers to Mr.
3 Lanpher that reasonable people might differ, would it be
4 fair to say that it would have to be that reasonable
5 people with informed judgments might differ?

6 MR. LANPHER: Could we have a transcript
7 reference if you have one?

8 JUDGE BRENNER: I don't know if he has one,
9 but it was said. There will be a lot of transcript
10 references if he has them all. You asked him that
11 question several times, Mr. Lanpher, not always in the
12 same context -- that is the one thing that troubles me
13 slightly -- but in part in this context.

14 Do you have a reference? I won't require it.

15 MR. ELLIS: No, sir. I would get one. I just
16 don't have one on this. It did come up a number of
17 times. I thought I would handle it with one question.

18 JUDGE BRENNER: It came up in the context in
19 which Mr. Ellis is now inquiring at least once and, I am
20 reasonable sure, more than once, Mr. Lanpher, and it
21 also came up in the other context, which Mr. Ellis is
22 not now inquiring about, as to what criteria would be
23 applied. Those are the two contexts which come to mind
24 quickly.

25 WITNESS HIGGINS: Well, certainly we have had

1 examples of cases where I&E or Region I has been of one
2 opinion on a particular item and LILCO has taken the
3 opposite opinion, and when we discussed this, we said
4 that, yes, sir, this is one where we did have a
5 difference of opinion or a difference of judgment. I
6 feel that it is very important to understanding the
7 situation, even when you do have the difference in
8 judgment, that you need to be well-informed about the
9 situation.

10 In a lot of these cases we have taken the
11 licensees' responses and given them careful
12 consideration, and I believe in one case we did withdraw
13 a violation, and certainly if we didn't feel that they
14 were well-informed about it or their response showed
15 that they didn't have all the facts involved, we
16 wouldn't give it much consideration at all.

17 But being well-informed and having the facts
18 involved, even though we did differ, we were certainly
19 willing to go back and take another look at it, given
20 the fact that it was obvious that they had taken a
21 careful look at it and were well-informed of the facts.

22 BY MR. ELLIS: (Resuming)

23 Q So generally am I correct that when you used
24 the term "reasonable people might differ," or when you
25 responded to Mr. Lanpher in that context, you were

1 assuming that the people were informed as to the
2 circumstances of the condition and its technical and
3 safety significance?

4 A (WITNESS HIGGINS) I guess I think perhaps
5 both the County and LILCO have said reasonable people
6 might differ. I don't ever recall saying that ourselves.

7 JUDGE BRENNER: I think that maybe you did at
8 least once, and maybe more than once, Mr. Higgins. If
9 you didn't say it, Mr. Lanpher would say, "So reasonable
10 people might differ," and I think you responded
11 affirmatively, and that is the way it came up. Do you
12 recall that?

13 WITNESS HIGGINS: That may have happened.

14 BY MR. ELLIS: (Resuming)

15 Q Did you want me to repeat the question?

16 A (WITNESS HIGGINS) Yes, please.

17 MR. BORDENICK: I think the question was
18 answered.

19 JUDGE BRENNER: I think it was answered before
20 you asked it, and I say that seriously. I think that
21 just the previous answer sufficed. I don't think you
22 got an answer to the last question, but I don't think
23 you need it. And I will leave that up to you.

24 [Counsel for LILCO conferring.]

25 BY MR. ELLIS: (Resuming)

1 Q Let me just repeat the question to save time.
2 I think it was answered, and it may be out of an
3 abundance of caution.

4 Mr. Higgins, when you or in responding to Mr.
5 Lanpher used the term "reasonable people might differ,"
6 am I correct that you assumed in your answer that you
7 were talking about people's judgments being informed by
8 the facts and circumstances of the condition and its
9 technical and safety significance generally?

10 A (WITNESS GALLO) Yes. In general I agree with
11 your characterization, and in writing a violation, one
12 of the processes the inspector goes through, I would say
13 that every violation that has ever been written is
14 probably unique in that the particular inspector sees
15 the circumstances in front of him and ties that to a
16 requirement and then he must really convince his
17 supervisor that, of course, that they are the facts and
18 that they are tied to that requirement.

19 And, of course, part of that is writing it
20 properly so that it presents the picture accurately and
21 factually, and one of the things that he can do and
22 usually should do if it is an expertise-type area is
23 talk to one of the specialist inspectors that is
24 available in the regional office. He may not have to do
25 that, depending upon what the area is. That is at least

1 his option.

2 The violation is then reviewed along with the
3 details that are found in the inspection report by the
4 supervisor, and based on, again, his judgment, he is
5 receiving the facts from his inspector, and we are
6 dealing with resident inspectors, as I do quite
7 frequently. We do depend quite a bit on telephone calls
8 and Telefax copies of drafts of violations.

9 So I guess what I am trying to say is that it
10 is a unique combination every time you write a violation
11 as to what goes into it, but it always involves the
12 resident inspector seeing the hardware of the piece of
13 paper or the problem in person and then discussing it
14 with his own supervisor and making the judgment based
15 upon those -- generally it is those two people that make
16 the judgment with the facts in front of them.

17 MR. ELLIS: Judge Brenner, I think I am going
18 to skip for a moment to Roman IV. May I proceed?

19 JUDGE BRENNER: Yes. I was afraid for a
20 minute you were going to ask him to complete the
21 syllogism, and suffice it to say, not all men who differ
22 are reasonable.

23 MR. ELLIS: I am a slow learner, but I think
24 it has sunk in.

25 BY MR. ELLIS: (Resuming)

1 Q Gentlemen, on page 51 of Mr. Hubbard's
2 testimony, and I will give you a moment to find it, let
3 me refer you to the first full paragraph that appears
4 there, the first sentence -- in fact, the first full
5 paragraph.

6 [Pause.]

7 Do you see the first sentence there? Mr.
8 Hubbard states the I&E program is deficient because the
9 Staff has not evaluated Shoreham QA deficiencies against
10 any objective baseline criteria to measure or
11 quantitatively compare the effectiveness of the Shoreham
12 quality program. Do you agree with that conclusion of
13 Mr. Hubbard's?

14 A (WITNESS GALLO) No, sir.

15 Q Is it the view of I&E that in order for audits
16 and inspections to be valid bases on which judgments can
17 be made or extrapolations to a larger population can be
18 made, that the sample inspected or audited has to be
19 selected using quantitative or statistical means?

20 A (WITNESS HIGGINS) There was a lot of
21 lead-in. Could you ask the question again, please?

22 Q Yes. It was not a clear question. What is
23 the Staff's view with respect to whether it is necessary
24 to choose an audit or inspection sample using
25 statistical quantitative methods in order to be able to

1 draw or extrapolate conclusions to the larger
2 population. Is it necessary?

3 A (WITNESS GALLO) Mr. Ellis, in my opinion it
4 is not necessary to have that statistical sampling
5 technique. I think if you understood how an inspector
6 selects his sample, it might help a little bit. I think
7 one of the things I try to train my inspectors, and I
8 know I did and I hope inspectors in general do it, is we
9 do do a sampling program but it is selected and usually
10 the items selected are selected for a reason, and some
11 of the things we do look at are particular highlights of
12 activities.

13 One of the things we try not to look at is
14 look at the easy things. We don't want to look at -- if
15 we are required by our own inspection procedures to look
16 at five pipe welds, I would not myself certainly not go
17 out and find the first five small bore pipe socket
18 welds, which is a fillet weld, and look at those five
19 welds and close out the inspection requirement.

20 What I would do is prioritize my inspection so
21 I would look at Class I piping if I were looking at
22 welds rather than Class III piping because it has more
23 safety significance. The Class I pipe welds sample
24 size, the available size of the number of welds is
25 probably considerably lower than there are Class II and

1 III, so we do try to prioritize it to look at Class I
2 welds as opposed to Class III, although we want to look
3 at the Class III occasionally, too.

4 The other thing I would want to look at is the
5 weld, the particularly difficult weld. Is there the
6 first of a kind being done at that site? Is there a
7 particularly thick pipe? Wall thickness. Is there a
8 particularly difficult area to weld? Is there a
9 particularly difficult material to weld?

10 One of the things that I think I have found
11 would be very useful for looking at in welding is to
12 look at bi-metallic welds, where you are welding
13 stainless to carbon steel, and you don't find a very
14 large sample of those on the site. But when you know
15 they are going to be done, you go look for them, and you
16 look at that type of weld or the particularly thick weld
17 or where the plant brings on a machine-type welder, and
18 the first time they use that on a large-bore piece of
19 pipe, you go in and inspect that particular area rather
20 than -- I guess, my estimation was a statistical sample
21 would be if there are 5,000 safety-related welds on the
22 site, we would look at x percent of those.

23 I guess what I am saying is that my way of
24 sampling in that case would be far superior than taking
25 a list and randomly picking a percentage of them. I

1 would rather have the ability to select so many of those
2 welds that are particularly difficult for the welder to
3 do.

4 Q In listening to your answer, I think I picked
5 out a number of factors. Would it be fair, then, to say
6 that it is your view that the proper factors to take
7 into account when an inspector or an auditor selects a
8 sample or an inspection or an audit are judgment, his
9 experience in the matter, relative complexity of the
10 matters inspected or audited, and the safety
11 implications of the matters inspected or audited?

12 A (WITNESS GALLO) Would you give me your
13 factors again? I would like to write them down.

14 Q The judgment and experience of the
15 auditor-inspector, the relative complexity of the
16 matters being inspected or audited, and the safety
17 implications of the matters being inspected or audited,
18 whether it be a plant or some portion of a plant.

19 A (WITNESS GALLO) Yes, I generally agree with
20 those. The only thing I would add is that I would also
21 want to make sure that I sampled a variety of the
22 different types in my example of the welds that are in
23 progress.

24 Q And as I understand your testimony, this is
25 superior, in your opinion, to a statistically-based

1 selected sample?

2 [Panel of witnesses conferring.]

3 A (WITNESS GALLO) Yes, sir, it is. Our program
4 does select small samples, and basically our guidance is
5 to look at the variety of areas and prioritize our
6 inspections, and I guess on statistics, if you use a
7 pure statistical sample, I would, having a very small
8 background in mathematics, I don't know if I could
9 develop a sampling technique that would really -- we
10 tried to use one of the mil standards that is available.
11 I'm not really sure that that type of sampling technique
12 is valid for a process for most of the processes that
13 probably go on at a construction site. It is my
14 understanding that those processes are really valid for
15 where multiple objects are produced in the same exact
16 method over and over again where you are producing,
17 perhaps where you are producing the weld rod or
18 producing 325 bolts in a factory where thousands and
19 thousands made the same process.

20 A (WITNESS HIGGINS) I would like to add just
21 something short to that, and that is Mr. Gallo talked
22 about using informed engineering judgment to select your
23 samples, and in general this is what is done when you
24 get down to a particular area. As far as deciding which
25 areas to look at, say, for example, we wouldn't use

1 judgment to say, well, I'm going to look at the
2 preoperational test area, and maybe another day using my
3 judgment I am going to inspect the welding area, but
4 rather our I&E inspection program defines for us over
5 the years which particular areas from a programmatic
6 sense need to be looked at, namely, that we have to look
7 at this welding or type of welding, we have to look at
8 concrete work, we need to look at preoperational
9 testing, startup testing, quality assurance, this type
10 of thing. But within the framework, once you get down
11 to a particular specific area, then there is engineering
12 and informed judgments to be made as to when you have a
13 population size, say, of several thousand things of a
14 particular type as to which ones the inspector would
15 look at.

16 Q Thank you.

17 Am I correct that I&E, Mr. Gallo, does not use
18 statistical methods for selecting samples for audit or
19 inspection? Is that correct?

20 A (WITNESS HIGGINS) That is correct, we do
21 not. A few years ago I&E through Sandia Laboratories
22 made some trial tests of attempts at selecting things on
23 a statistical basis, and those attempts were borne out
24 to be not very fruitful. It was found out they led the
25 inspectors into looking at a number of things that we

1 found were just not productive, and we found by using
2 our judgment we could get much more productive
3 inspections.

4 Q Mr. Higgins, I believe my notes from yesterday
5 indicated that you testified that you were not surprised
6 by the Torrey Pines results. Is my recollection correct?

7 A (WITNESS HIGGINS) Yes.

8 Q Why did you make that statement?

9 A (WITNESS HIGGINS) Well, that was because --
10 two things, really. Over my several years at Shoreham
11 in doing a number of system walkdowns where I actually
12 took the detailed drawings and went out and walked the
13 systems down, and also during the CAT inspection where
14 we did the same type of thing, we in general found very
15 close conformance between the detailed onsite design
16 drawings and the actual installed condition in the
17 plant, and then I also knew when the Torrey Pines
18 inspection was undertaken that that was the type of
19 thing they were going to do, and I expected the same
20 type of results to come out of the Torrey Pines, and in
21 fact that is what happened.

22 [Counsel for LILCO conferring.]

23 Q I think you indicated in your earlier
24 testimony, Mr. Higgins, that you had undertaken an
25 information review of the Torrey Pines report and are

1 familiar with it. Am I correct in that connection?

2 A (WITNESS HIGGINS) I read the executive
3 summary and the 19 findings and the corrective plans for
4 those 19 findings, and that is the extent of my review.

5 Q Would you say, then, that the results of the
6 Torrey Pines confirm or support the conclusions that the
7 Staff has reached in its quality assurance testimony
8 with respect to construction?

9 MR. LANPHER: I object to the question. He has
10 just stated that he had not reviewed the whole report;
11 he has reviewed only -- well, the executive summary, the
12 19 findings and the corrective action plans. That is
13 all. I don't see how this witness can possibly provide
14 opinion testimony on that question.

15 JUDGE BRENNER: Well, I will let you argue
16 that as to the way the question was focused on the
17 conclusions and was not premised on any total analysis,
18 and we have got the record as to what he did, so I will
19 allow the question and answer; and you can argue the
20 weight later.

21 MR. LANPHER: Well, at an appropriate time I
22 would like to come back on this matter as to these
23 witnesses providing testimony on that.

24 JUDGE BRENNER: On Torrey Pines at all, you
25 mean?

1 MR. LANPHER: On Torrey Pines and deciding not
2 to file prefilled testimony, and frankly, I have not had
3 -- well, do you want me to state this now or do you want
4 me to wait? I don't mean to interrupt.

5 JUDGE BRENNER: Why don't you wait. And I
6 recognize the potential problems, but consider that when
7 you do think about what you want to say about it to us.
8 Let's see how far it goes. It is not going to go very
9 far, I can tell you from the cross plan. But even aside
10 from that, you asked some questions arguably of a
11 preliminary nature on Torrey Pines of LILCO witnesses at
12 a time when we knew we were going to later get into the
13 in-depth, and I think I certainly or the Board certainly
14 didn't want to interrupt you, although we mentioned we
15 didn't want to go too far into it because we didn't want
16 to repeat things, but some things were useful for
17 context, and that is why I am inferring you asked some
18 of the questions you did.

19 MR. LANPHER: Let me just say it now, Judge
20 Brenner. I can see that even if they are going to
21 testify to these conclusions and these conclusions are
22 going to be in the record, that we may need to depose
23 these witnesses on the Torrey Pines matters.

24 JUDGE BRENNER: Okay. If you want to do that,
25 you had better tell somebody sooner rather than later.

1 MR. LANPHER: My understanding is they weren't
2 going to be providing Torrey Pines testimony, and
3 nothing was going to be prefiled today. I'm now hearing
4 this testimony, and we may need to do that.

5 JUDGE BRENNER: All right. You may need to
6 request to be able to do that, and then we will decide
7 after.

8 MR. BORDENICK: I would point out, Judge
9 Brenner, that the testimony that has been offered or has
10 been given was not put forth by the staff itself.

11 JUDGE BRENNER: I know. I will let you point
12 that out again if we have the argument.

13 MR. BORDENICK: I don't recall who the
14 questions were from, but there have been previous
15 questions to these witnesses; and I think Mr. Lanpher or
16 Mr. Ellis is fairly following up on some of the previous
17 questions.

18 JUDGE BRENNER: Not exactly. I myself am
19 guilty, if that is the right word, of asking the
20 witnesses about Torrey Pines, but it was a different
21 context. I did not ask them about -- well, I don't want
22 to argue my own case. I didn't ask them about the
23 substance of Torrey Pines so much as the scope of Torrey
24 Pines. And maybe there is a fine line of difference,
25 but I try to keep that difference in mind when I ask my

1 questions. Maybe I did not succeed in that.

2 MR. LANPHER: I don't believe I asked any
3 questions on the conclusions of Torrey Pines either.

4 MR. ELLIS: I was following up to some extent
5 what I had heard. Also, the December 17th letter that I
6 received was another factor.

7 JUDGE BRENNER: You will have to remind me of
8 what letter that is.

9 MR. ELLIS: Memo. I'm sorry. A memo.

10 JUDGE BRENNER: From Mr. Novak?

11 MR. ELLIS: Yes. Can we show the witnesses?

12 MR. BORDENICK: We can show the witnesses for
13 whatever it's worth. These witnesses don't work for Mr.
14 Novak.

15 JUDGE BRENNER: Let me cut it short here.
16 We're not forbidding the question. We have overruled
17 the objection, and we understand part of the predicate
18 in the previous question, and you can come back and ask
19 some questions about it, too, Mr. Lanpher. And I
20 suggest if you are agitated by this subject being
21 broached with these witnesses partly for the reasons you
22 indicate, that you at least pursue it to nail down the
23 extent of their knowledge or lack thereof as a predicate
24 for a request for any further depositions, and in fact,
25 you may in your own mind obviate the need for such a

1 request.

2 But I understand what they looked at, and I
3 think it is pretty clear on the record. And I think the
4 question is fair as a followup to that, and the weight
5 which it will be accorded will be commensurate with what
6 these witnesses looked at, particularly as compared to
7 the testimony that we have yet to get.

8 I think it is arguably pertinent not so much
9 to our view of Torrey Pines but our view of how these
10 witnesses or IE inspectors work in light of the fact
11 that there might be other information out there and why
12 they have done or not done certain things in light of
13 that other information.

14 You probably don't recall the question. Do
15 you want it repeated by the Reporter?

16 MR. ELLIS: Please.

17 (The Reporter read the record as requested.)

18 WITNESS HIGGINS: When we prepared our
19 testimony we were not taking Torrey Pines into
20 consideration. Since having an opportunity to go back
21 and look at Torrey Pines and what was done and what I
22 looked at to the extent that I already testified, we
23 didn't find anything in there to change our conclusions
24 in our testimony.

25 JUDGE BRENNER: For what it's worth, since

1 you're going to be returning to the subject, I think the
2 witness reformed his question and its answer, so when
3 you make your argument, argue on the basis of the
4 question as answered and not solely as asked, if you in
5 fact have any argument to make.

6 MR. ELLIS: I'm not going to pursue that
7 particular point.

8 BY MR. ELLIS: (Resuming)

9 Q Returning for a moment to the subject of
10 statistical methods for selection of audit or inspection
11 samples, did the samples that were selected in the CAT
12 inspection, they were based, of course, on the factors
13 that you mentioned, were they not, Mr. Gallo --
14 judgment, experience and complexity, safety implications
15 and so forth.

16 A (WITNESS HIGGINS) Actually, those factors
17 were all used when we chose the RHR system as the system
18 out of all of the systems in the plant as the system
19 that we wanted to look at. When we got to the RHR
20 system itself, we performed system walkdowns of
21 essentially 100 percent of the RHR system. Certainly we
22 didn't look at 100 percent of every attribute, but in
23 selecting as we went through there which attributes to
24 look at in particular areas in say, for example,
25 selecting which cables to trace down, as was done, we

1 utilized those factors, yes.

2 Q And am I correct, Mr. Gallo, that you would
3 agree that using those factors in selecting samples for
4 audits or inspections does give a basis for drawing
5 conclusions or extrapolations to the larger population?

6 A (WITNESS GALLO) Yes, I believe it does.

7 Q Let's turn for a moment to --

8 JUDGE CARPENTER: Mr. Ellis, are you going to
9 leave this area now?

10 MR. ELLIS: Yes, sir, I am.

11 JUDGE CARPENTER: I wonder if I might
12 interrupt you.

13 MR. ELLIS: Yes, sir, certainly.

14 May I say one thing on the Torrey Pines
15 thing? I think in fairness I would like to consult with
16 Mr. Bordenick on that. I doubt that I will come back to
17 it, but I may discuss it with him.

18 Thank you.

19 JUDGE CARPENTER: Mr. Ellis, in the interest
20 of efficiency I have a couple of questions relevant to
21 the baseline criteria and statistical design sampling
22 which I could wait and ask later, but then it would just
23 produce another round perhaps of followup. So if you
24 don't mind, I would like to ask just a few questions.

25

BOARD EXAMINATION

1 BY JUDGE CARPENTER:

2 Q Mr. Gallo, first of all, despite your
3 disclaimer a few moments ago, I note that your
4 undergraduate degree from Villanova and a major
5 curriculum was mathematics.

6 A (WITNESS GALLO) Yes, sir.

7 Q So I think your statement that you disqualify
8 yourself perhaps was one of modesty. Are you familiar
9 with probability theory to a reasonable extent, to the
10 point where you feel comfortable in making -- expressing
11 your views?

12 A (WITNESS GALLO) Much of the training that I
13 had at that time was of course very theoretical. I
14 think that the only training or dealings that I've had
15 with probability theory have been in the quality
16 assurance area, and that is really more using it rather
17 than the mathematical theorems or theses behind how it
18 works. So I guess I have had mathematical training but
19 not extensively, although I'm sure I had some college
20 courses in it; but it is so long ago and far away that I
21 don't think I could call on them when I'm talking
22 today. I'm talking more from a quality assurance
23 implementation aspect or using the sampling techniques
24 rather than real good basic knowledge of mathematical
25 development of them.

1 Q My questions are not going to be in the area
2 of theory but in the application of the theory, but I do
3 think it is pertinent, too, that you do have a
4 background of familiarity with the theory even though
5 you haven't actually pursued it in the recent past.

6 A (WITNESS GALLO) Yes, sir.

7 Q You referred to welding. Mr. Hubbard makes
8 the point that as a reviewer he can finally have a
9 baseline criteria. What number of deficiencies are
10 acceptable in the area of welding?

11 (Panel of witnesses conferring.)

12 A (WITNESS GALLO) Judge Carpenter, for ASME
13 code pipe welding the code specifies certain types of
14 deficiencies, I guess we will have to call them, which
15 are not allowed so that the ASME code would require that
16 there be zero of those type of deficiencies.

17 Now, if you're talking about an NRC-identified
18 item, again you get back into the technical judgment
19 area and whether or not we have a recurrent problem. I
20 don't think there is an absolute number that I would be
21 able to provide you that would say that if we had this
22 many violations in the welding area that we would
23 consider elevated enforcement action. But certainly if
24 there were multiple violations in multiple inspections
25 we would certainly give it a long, hard look.

1 Q Well, from the first part of your answer at
2 least for those welds which are referenced in the code,
3 and with particular focus on welding and safety-related
4 systems, I took your answer to be that the criteria
5 would be zero deficiencies as being acceptable.

6 A (WITNESS GALLO) Yes, sir.

7 Q You see, I feel in that particular case that
8 we've had a lot of record about welding, that there has
9 been a failure to recognize that the criteria, as far as
10 I can tell, is zero.

11 A (WITNESS GALLO) For those enumerated
12 deficiencies in the ASME code that is correct.

13 A (WITNESS NARROW) May I add something to that,
14 Judge? In nondestructive testing, which includes visual
15 testing of welds, they normally refer to indications for
16 any items which may or may not be a deficiency, and
17 these are evaluated by normally a level 3 inspector who
18 determines whether they fall within the category that is
19 not permitted or is permitted by the code. And that
20 includes both the AWS and the ASME code so that it
21 covers practically all, if not all, of the
22 safety-related piping on site. And with regard to any
23 of them that are classified as deficiencies, zero are
24 permitted, that is correct.

25 Q So certainly that aspect with respect to

1 welding, that aspect of the baseline criteria while not
2 explicitly stated, apparently it is obvious to the
3 professional.

4 The other point that perhaps might be raised
5 is the sampling, the extent of the sampling, how many of
6 them are looked at.

7 Your point earlier, Mr. Gallo, that you would
8 not pick the easiest welds to look at in my mind is
9 immediately introducing the concept of stratified
10 sampling. You deliberately stratify your effort to put
11 your effort into samples that you feel are more useful.
12 A statistician, I think, would say that you had engaged
13 in stratified sampling.

14 Would you agree with that loose analysis?

15 A (WITNESS GALLO) Yes, sir. I was going to
16 call it a skewed sample, I guess; that I believe that I
17 do or did as an inspector and the inspectors do try to
18 concentrate on those areas that would be more difficult
19 or more important to safety.

20 And I would extend that even in my own
21 personal instance to quite a few things beyond welding
22 where I know I've done it where you look at -- even when
23 we do look at forms of paperwork, E&DCRs or
24 nonconformance reports, that the number of items that we
25 look at, either in welding or in nonconformance reports,

1 is basically specified in our inspection procedures to
2 look at five welds or to look at 10 or 20 pieces of
3 paper.

4 And even when I feel when the inspector looks
5 at the piece of paper he can go in and he can see a
6 stack of 500 E&DCRs and spend about five minutes to look
7 through those and pick out the ten, maybe the ten
8 thickest ones or the ten with the most crumpled pages in
9 them, the ones that have a lot of coffee stains on them,
10 that have been through a lot of revisions and that sort
11 of thing. And they are the ones I would pick to review,
12 if you can follow the trail through that one, that type
13 of problem of nonconformance or whatever it may be that
14 would give me a lot more confidence that the single page
15 ones are being handled correctly.

16 Q Well, I say I think if one were to engage in
17 the very cumbersome operation of translating all of
18 these things that you've called judgment into a
19 formalized system, I think what you just described would
20 fall in the category of selective or stratified sampling
21 in terms of sampling effort.

22 The other point raised in this contention is
23 that judgments rather than statistical methods are being
24 used. Can you help me with my curiosity as to whether
25 statistical methods involve judgments?

1 A (WITNESS GALLO) I guess one area where
2 judgment would be involved in setting up your
3 statistical sample would be your assumptions as to what
4 type of process you're using.

5 Q Would one of the first things that one might
6 have to look at in terms of assumptions is the kind of
7 distribution of the property? Frequently in the absence
8 of any information one starts with a calcium
9 distribution or some sort of statement about the
10 probability or frequency of distribution.

11 (Panel of witnesses conferring.)

12 A (WITNESS GALLO) I guess the two things that I
13 was -- the distribution that I was thinking of, the
14 skewed distribution that we were taking our sample off
15 one end and not the bulk sample in the middle. And I
16 guess the other thing that we have mentioned is that to
17 maybe try to get them at the medical term would be
18 called subsets, so that you are sampling again
19 stratified also so many items from Class 1 welds and so
20 many items from Class 2 welds and maybe a smaller sample
21 size from Class 3 welds, whereby the real distribution
22 of the welds are probably more, I would guesstimate
23 anyway that there are more in the Class 3 category than
24 there are in Class 1 certainly. Yet our sample size is
25 larger, and that is judgment. Our sample size is larger

1 or at least the same size in the Class 1 pipe welds.

2 Q Well, you just call it judgment. It is also a
3 reflection of your assumptions which perhaps you haven't
4 formalized.

5 A (WITNESS GALLO) I think one of the things
6 that I in developing -- these inspection procedures are
7 done by the Inspection and Enforcement offices here in
8 headquarters in Washington. And I know one of the
9 things that they have tried to do is to go back through
10 documents like the WASH-1400 study and determine if we
11 are looking at the right areas, first of all. And as
12 far as I know, there have been some minor modifications,
13 but basically the people in headquarters felt that they
14 were looking at the right areas based on safety
15 significance and sample size were somewhat adjusted; but
16 that we were looking at a reasonable technical sample in
17 our inspection program. That is my understanding of
18 what I was told regarding our program.

19 Q Well, the reason I was trying to explore this
20 a little bit, you earlier testified you felt statistical
21 methods -- and obviously, there are a lot of different
22 kinds of statistical methods -- you obviously have the
23 more commonly used ones in mind or most applicable to
24 where you had a repetitive process like manufacture of
25 light bulbs and you were trying to understand the

1 quality control of the product.

2 A (WITNESS GALLO) Yes, sir. I think it was my
3 point that you couldn't do that mathematically without
4 taking all of the other factors into account or you
5 would get a sample. But in my opinion there would be
6 not an accurate sample and not as good as the type of
7 sampling that we do where we take a lot more technical
8 considerations into account rather than just an XY plot
9 or considering numbers.

10 Q I guess the real issue here is that having
11 used statistical methods if they can be used, one has a
12 formalized system for making some statements of that
13 confidence in the results, whereas with the unstated I
14 think it is much the same process -- unstated and
15 therefore not formally reviewable, which is very
16 difficult to make such a statement.

17 Wouldn't you think that is the essence of the
18 point that is being raised here? It is very difficult
19 for a reviewer to evaluate the NRC's review because it
20 isn't in arithmetic terms.

21 A (WITNESS HIGGINS) Judge Carpenter, in order
22 to review the NRC's review as you stated, if you stand
23 back and just look at it in terms of our program, we go
24 out and look at the plant, and we inspect it, and we use
25 our judgment and experience and so on. I grant you that

1 doesn't give you a very warm feeling, but if you look at
2 what we do in terms of what we actually inspect -- and
3 as we stated before, our construction and inspection
4 program is in the I&E Manual which is in the Public
5 Document Room. And that details in a considerable
6 amount of detail the types of activities that we look
7 at, and in fact the inspection procedures in there for
8 each specific type of activities go into a considerable
9 amount of detail that show the types of things that we
10 do look at, for example.

11 And as we said before, it is continually
12 updated, and as new requirements come out -- for
13 example, the requirements from NUREG-0737 on TMI -- we
14 have items in there that go into a considerable amount
15 of detail, say several pages on each NUREG-0737
16 requirement, to tell us what to inspect, what to look at
17 for these particular things.

18 And I guess what is really -- what we don't
19 have is the -- on a particular inspection activity of
20 one kind where they involve say a review of a lot of
21 piece of paper, we don't have something that says look
22 at X percent, and that is the way you extrapolate it and
23 make your conclusion, but in my mind that is not a real
24 lacking.

25 And I guess to just add one other thing that I

1 hope is not too peripheral, NRC does use statistics in
2 some areas, although not to selected inspection sizes.
3 Some of the things we inspect on site do involve
4 statistics. For example, one is the data-taking during
5 the leak rate test where you take a tremendous number of
6 data points and statistics are involved. A T
7 distribution is used in evaluating the data and coming
8 up with test results and test conclusions. And the NRC
9 has its own portable calculator with statistical
10 programs in it that we take independent samples of the
11 licensee's data during this test and come up with our
12 own containment leak rates and confidence levels that we
13 apply and compare with the licensee's to see that he is
14 adequately doing that test. But that is not for
15 inspection sample sizes.

16 BY JUDGE MORRIS:

17 Q While we're on this subject and having already
18 interrupted LILCO, what is the panel's opinion about the
19 practicality of coming up with a numerical measure of
20 the effectiveness of the quality assurance program?

21 (Panel of witnesses conferring.)

22 A (WITNESS HIGGINS) I guess we really don't see
23 in our view how that that could be done with the
24 licensee's program. And one reason we say that is we
25 found that with our own program in terms of -- we have

1 done various different ways of combining and permutating
2 numbers of violations, reportable events, construction
3 deficiency reports, licensee event reports. And the NRC
4 has consultants involved with this to try and come up
5 with numerical formulas and so forth. And we have found
6 that that type of information did not jibe with the
7 selective evaluations that we felt were more accurate.
8 And we felt that in doing those types of things trying
9 to reduce things that have such an amount of variation
10 and complexity and judgment involved and trying to
11 reduce it to broad numbers gave you a very wrong
12 impression of things. And I think the same thing would
13 be involved in trying to do that to licensee audit
14 results.

15 Q Would it be correct to say that you would feel
16 more confident in coming up with a conclusion of
17 reasonable assurance of an effective QA program to use
18 your technical judgment rather than some statistical
19 computed result?

20 A (WITNESS GALLO) I would certainly feel
21 significantly more comfortable with the methods that I
22 have seen so far.

23 JUDGE CARPENTER: Thank you, Mr. Ellis, for
24 letting me interrupt. I just felt that this information
25 would be most useful at this point in the record.

1 CROSS EXAMINATION -- Continued

2 BY MR. ELLIS:

3 Q Mr. Gallo, I just want to clarify one thing.
4 You said that you would feel much better with the
5 methods that you had seen. I just wanted to be clear
6 that the methods you are referring to in that answer to
7 Judge Morris' questions were the methods that you have
8 described that the NRC I&E currently uses.

9 A (WITNESS GALLO) What I was referring back to
10 was any methods that we have attempted so far for
11 counting violations and counting reportable events,
12 licensee event reports or construction deficiency
13 reports as opposed to man-hours, numbers of inspections
14 and that sort of thing. Those have to date proved to
15 be, at least shown to be fruitless.

16 Q So basically then it is the judgmental methods
17 rather than the statistical methods that you are
18 comfortable with?

19 A (WITNESS GALLO) Yes, sir. And in our
20 judgment, of course, we do have to take some of those
21 numbers and things into account. I'm not trying to say
22 we are ignoring them, but we are trying to put them in
23 their proper perspective.

24 MR. ELLIS: Judge Brenner, I propose now to
25 move on. I think I can finish one other category before

1 lunch. That may be unwarranted optimism, but I wanted
2 to tell you in case I stimulated any further inquiry.

3 JUDGE BRENNER: Let's go off the record for a
4 minute.

5 (Discussion off the record.)

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

7 BY MR. ELLIS: (Resuming)

8 Q Gentlemen, I believe you testified to this.
9 Would you confirm for me, please, that Appendix B to 10
10 CFR Part 50 has been construed and applied by I&E to
11 apply to only the safety-related structures, systems and
12 components, is that correct?

13 A (WITNESS HIGGINS) That is generally true, yes.

14 Q Now, you were asked a number of questions or
15 maybe just a few by Mr. Lanpher concerning the term
16 "important to safety" in which you indicated what you
17 understood from the Denton memorandum. Can you tell me
18 whether in your experience any nuclear power plant uses
19 the classification "important to safety" to apply to
20 structures, systems and components that are not
21 safety-related?

22 A (WITNESS HIGGINS) In my experience of
23 inspection over the last six years -- and I believe I
24 gave you the list of plants that I had inspected -- I
25 have not run into a plant that uses it in that way.

1 MR. LANPHER: Judge Brenner, can I have the
2 question and answer read back on that?

3 JUDGE BRENNER: Okay.

4 (The Reporter read the record as requested.)

5 BY MR. ELLIS: (Resuming)

6 Q Mr. Narrow, would that be true also in your
7 experience?

8 A (WITNESS NARROW) Yes, Mr. Ellis. I do not
9 recall having encountered the term "important to safety"
10 in use and in the QA program of any of the other plants
11 which I have inspected.

12 MR. ELLIS: Judge Brenner, this might be an
13 appropriate time.

14 JUDGE BRENNER: Do you want to ask Mr. Gallo,
15 too, or quit while you're ahead?

16 (Laughter.)

17 JUDGE BRENNER: All right. I'm not usually in
18 the habit of making transcript corrections or
19 adjustments, but just so Mr. Lanpher doesn't get the
20 wrong idea, the opening page yesterday, the transcript
21 has me saying that we will be glad to finish the cross
22 examination by the County of the staff's witnesses.
23 That is on page 17,010.

24 What I think I said and certainly what I
25 intended to say is that we are prepared to finish the

1 cross examination, and while there may have been other
2 contexts on other days in this proceeding when the
3 Freudian slip would have been appropriate, nothing in
4 the examination of these witnesses would have given rise
5 to that. So I wanted to make that correction.

6 We will take an hour and a half and come back
7 at -- well, let's round it off to 1:30.

8 (Whereupon, at 11:55 a.m., the hearing was
9 recessed for lunch, to be reconvened at 1:30 p.m., the
10 same day.)

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1 quality assurance eliminated from involvement at
2 Shoreham?

3 (Witnesses conferred.)

4 A (WITNESS HIGGINS) Not completely. It is my
5 understanding that Mr. Gallo's answer was generally a
6 generic-type answer, and there are some specific
7 exceptions to that. And as you asked, in my experience
8 at Shoreham, for example, quality assurance does have
9 involvement in several areas; for example, fire
10 protection, several areas that are not safety-related.
11 Fire protection would be one area.

12 Some other areas that come to mind which are
13 listed in the appendices to the Quality Assurance Manual
14 would be radwaste, emergency planning, security, that
15 type of thing.

16 Q Now, with respect to those, Mr. Higgins, at
17 Shoreham when you use the term "quality assurance," you
18 are using the term there, aren't you, in connection with
19 the Appendix B program at Shoreham? Isn't that right?

20 A (WITNESS HIGGINS) That is correct.

21 Q Now, let me ask you the same question, and
22 instead of using the Appendix B program, let me ask you
23 generally whether, based upon your experience and your
24 knowledge of the site, whether there is quality control
25 with respect to non-safety-related items at Shoreham?

1 A (WITNESS HIGGINS) For non-safety-related
2 items there is not a well-defined or, let's say, a
3 quality control or quality assurance manual that defines
4 for all quality for all non-safety-related items what
5 the program will be. But, yes, they do have similar
6 things to Appendix B that is done for items that are not
7 safety-related.

8 For example, I am aware of various programs
9 that are involved that control both construction,
10 testing, et cetera of things from a procedural
11 standpoint for non-safety-related items. Yes, I am
12 aware of that.

13 Q Are you aware of the construction site
14 inspection program?

15 A (WITNESS HIGGINS) I am aware of it, but I
16 have not inspected it.

17 Q Are you aware that that is a program that
18 relates to non-safety-related?

19 A (WITNESS HIGGINS) Yes, I am. I have looked
20 at those, and I am aware that you do have procedural
21 controls in effect for these items, yes.

22 Q And are you also aware of quality control
23 procedures for relating to installation of
24 non-safety-related structures, systems, or components?

25 A (WITNESS HIGGINS) I call them "installation

1 procedure" and installation procedures and inspection
2 procedures for those installations, I wouldn't really
3 call them quality control procedures.

4 JUDGE BRENNER: Why not? What is the salient
5 distinction or distinctions in your mind?

6 WITNESS HIGGINS: I guess primarily in my mind
7 there might probably be a couple: One, that there is no
8 firm commitment to the NRC to do those things and
9 therefore, from a programmatic standpoint we have no
10 regulatory commitment that would bind them to it. And
11 the second is that you don't have the independence that
12 we would normally expect from quality control or quality
13 assurance type of inspections. That is being done by a
14 separate independent quality control or quality
15 assurance organization.

16 JUDGE BRENNER: Maybe you subsumed this in
17 your last comment of a document about the inspectors and
18 then audited by some other organization.

19 WITNESS HIGGINS: I am not aware of any
20 auditing, either. As I said, they do have perhaps some
21 parts of Appendix B type things in there; namely, design
22 control, procedures control, inspections, testing, these
23 type of things. But other ones, I am not aware that
24 they have, for example, independent auditing, this type
25 of thing. But we have never really inspected that

1 program as a whole. So what it has and doesn't have, we
2 don't have a real firm handle on.

3 JUDGE BRENNER: Do you know -- and if you
4 don't, please say so -- do you know if they have a
5 graded program for that non-safety-related area; that
6 is, that their procedures would start to approach being
7 closer to Appendix B in terms of the thoroughness, the
8 independence of this, of who's inspecting the
9 documentation of the inspections for portions that might
10 be more important from a safety standpoint, even though
11 non-safety-related? Or are they pretty much the same
12 procedures applied once it is in a non-safety-related
13 category?

14 WITNESS HIGGINS: With the exception of those
15 items that I had already indicated we get some Appendix
16 B QA that are indicated in the appendices to their QA
17 Manual, I would say it is essentially the same program
18 for all things that are non-safety-related.

19 JUDGE BRENNER: Thank you.

20 BY MR. ELLIS: (Resuming)

21 Q But would it be fair to say that that program
22 is applied with --

23 (Counsel for LILCO conferred.)

24 MR. ELLIS: Strike that question.

25 BY MR. ELLIS: (Resuming)

1 Q Mr. Gallo, in your answer on page 16,996,
2 where you said, "In my experience, that would be the
3 case," you were referring there to your experience at
4 plants other than Shoreham?

5 A (WITNESS GALLO) Could you wait a minute? I
6 would like to read that again.

7 (Pause.)

8 A (WITNESS GALLO) I believe in the answer we
9 were talking particularly about components and quality
10 control applied to components. I would agree that as
11 far as I understand, LILCO has committed to apply their
12 Appendix B program to fire protection areas. So that
13 would be beyond the answer that I was giving. I had not
14 considered Appendix R components at the time.

15 Q So your answer to Mr. Lanpher there at the
16 bottom -- or the top of '996, you had in mind at
17 Appendix B program and not quality assurance, with a
18 small q, or generic quality assurance/quality control?

19 A (WITNESS GALLO) Mr. Ellis, I was speaking of
20 the Appendix B QA program.

21 Q Gentlemen, on page 13 and 14 of your testimony
22 -- and let me give you a moment to get that out -- and,
23 Judge Brenner, I am going to Roman VI -- on pages 13 and
24 14 of your testimony you indicate that, or you express
25 the view, that classification of violations under a

1 number of criteria is ineffective, often misleading, and
2 of little or no help in identifying programmatic
3 problems or potential QA/QC breakdowns. And you were
4 referring there to the classification as found in
5 Contention 12.

6 Is your view the same with respect to Table
7 5.1 that is contained on page 47 of Mr. Hubbard's
8 testimony as corrected?

9 (Witnesses conferred.)

10 A (WITNESS GALLO) I think I am answering your
11 question, Mr. Ellis, but I think we're looking at Table
12 5.1, which was in supplemental testimony, page 47. I
13 did not find that particularly useful to me, and I think
14 that is where testimony was directed at. One of the --
15 I guess there are two concerns here. One was mentioned
16 in our testimony specifically that we didn't feel
17 identifying it strictly by Appendix B criteria led to
18 very useful conclusions.

19 The other concern I guess I had here was that
20 going from, I guess, 73 violations that we initially
21 identified to the 169, it seemed to me to muddy the
22 waters considerably. I don't know how you get from the
23 173 to 169. I realize that was Mr. Hubbard's opinion,
24 but I don't feel it clarified the situation at all.

25 Q Well, is it fair to say that in your answer

1 A16, which understandably does not refer to that table
2 since they were filed contemporaneously, and your
3 conclusions that such where you say at the bottom of
4 page 13 that such classification is not only ineffective
5 but often misleading. And then over on 14 you say that
6 classification in this manner is of little or no help in
7 identifying the programmatic problem or potential QA/QC
8 breakdown.

9 Are those conclusions and that answer in your
10 testimony applicable to Table 5.1?

11 (Witnesses conferred.)

12 A (WITNESS GALLO) Yes, sir.

13 MR. ELLIS: Next, Judge Brenner, I am going to
14 move on to Roman VII on the cross plan. And I have
15 given to the parties and the Board a list of question
16 numbers and subjects from the FSAR. I believe I would
17 like to have this marked, if we may.

18 (Discussion off the record.)

19 (The document referred to
20 was marked LILCO Exhibit
21 No. 53 for
22 identification.)

23 BY MR. ELLIS: (Resuming)

24 Q Gentlemen, do you have before you what has
25 been marked as LILCO Exhibit 53, which is a single sheet

1 with the term "QUESTION AND SUBJECT," in all caps
2 underscored, on the top of the page, followed by a
3 column of question numbers and subjects?

4 A (WITNESS GALLO) Yes, we have it.

5 Q Is this a list of question numbers and
6 subjects from the FSAR?

7 A (WITNESS HIGGINS) We were given this list
8 yesterday and asked to take a look at it. And overnight
9 I took a look at the question numbers that are
10 referenced in the left-hand column in the FSAR. And the
11 subject is basically a paraphrase, what have you, of
12 those questions from the FSAR, yes.

13 Q Well, you were asked a number of questions
14 concerning the design review of NRR. Does this list,
15 which is on LILCO Exhibit Number 53, of subjects dealt
16 with in the FSAR questions and answers, reflect the kind
17 of design review that NRR engages in?

18 A (WITNESS HIGGINS) Certainly, these are
19 questions that NRR asked in the course of their design
20 review. So I would agree with that.

21 MR. ELLIS: Judge Brenner, I don't want to go
22 through all of these. They are in the FSAR. And my
23 purpose for introducing it I think is fairly obvious.
24 Are these adequately specified so that reference can be
25 made to them at the appropriate time in findings, or do

1 I need to move this particular exhibit?

2 JUDGE BRENNER: I don't know. You say your
3 purpose is clear. I guess maybe it is the lateness of
4 the hour or the week. It is not perfectly clear to me.

5 MR. ELLIS: Well, to the extent that there is
6 any question that NRR engages in design review and the
7 nature of that design review, I want to have something
8 in the record that reflects that. And my recollection
9 was that you did not want us to cite matters in the FSAR
10 unless they were alluded to. And that is my purpose.

11 JUDGE BRENNER: Okay. From those examples, we
12 ought to come up with some common truth as to the nature
13 of the NRR review, design review.

14 MR. ELLIS: Broadly put, yes, sir.

15 MR. LANPHER: I guess it is the lateness of
16 the week myself, too. Do you have a transcript
17 reference where I ask questions about the nature of the
18 NRR design review?

19 MR. ELLIS: No. I think you did ask about
20 design review, but in the first place, I am not limited
21 in my cross examination to matters that Mr. Lanpher
22 raises in his, and I am now going to tie it to a
23 particular --

24 MR. LANPHER: Well, that is true, except this
25 question was premised on the fact that I have asked

1 questions about NRR design review, and my recollection
2 is that I had asked about I&E design review.

3 JUDGE BRENNER: Somebody asked questions, and
4 I don't know who, and in the course of the answers at
5 least, if not the questions, elicited some discussion of
6 what they do as opposed to what we do, paraphrasing the
7 witnesses. And I think there is that much of a
8 predicate in the record. It was either inquired into or
9 answered about. So I am not going to rule it out on the
10 basis of relevance. How useful it is, we will wait for
11 the findings.

12 But to answer your question directly, Mr.
13 Ellis, I apologize, I have not gotten around to doing
14 that yet. This is a sufficient reference on the
15 assumption that from what I infer of your purpose, you
16 are not going to go into detail about the merits of the
17 particular reviews, it is just that these questions were
18 asked in order to elicit the information.

19 MR. ELLIS: That is precisely right, Judge
20 Brenner.

21 JUDGE BRENNER: Why don't we bind it in for
22 convenience at this point also.

23 (The document referred to, LILCO Exhibit
24 Number 53, follows:)

25

<u>QUESTION</u>	<u>SUBJECT</u>
041.3	Extent to which gap conductance was assumed between containment liner and shell, and how miscellaneous steel is modeled, in containment analysis
041.16) 041.34)	Justification of the entrance loss coefficient for the containment downcomer baffle plate, including use of Diagrams 3-1 and 3-8 of Section III of Idel'Chik (text).
130.2	Ductility ratios for barrier design and the basis for their selection (missile barrier design)
130.10	Methodology for transfer of loads from equipment supports to concrete of the containment
130.15	Detail of load combinations and associated stability factors against sliding, overturning and floatation of structures.
130.17	Load combinations for total tornado load resulting from missile, differential pressure and wind loads.
130.23	Procedure to account for uncertainties in subgrade and structural properties for dynamic analysis
130.35	Mathematical model for analysis of containment liner and its anchorage system
221.30	Details of methodology to predict annulus pressurization between reactor vessel and shieldwall
222.1	Detail, including all assumptions and equations, for determination of break flow rates

1 MR. ELLIS: Gentlemen, in connection with
2 that, would you turn to page 60 of Mr. Hubbard's
3 prefiled testimony? And this is Roman VII.B, I believe,
4 of the outline.

5 JUDGE BRENNER: Thank you.

6 BY MR. ELLIS: (Resuming)

7 Q Gentlemen, on page 60 of Mr. Hubbard's
8 prefiled testimony, he states that there is virtually no
9 in-depth review of the implementation of the design
10 process at GE and the Stone and Webster, the designers
11 of Shoreham safety features. And he says, I believe
12 this is a significant omission in the Staff's NRR and
13 I&E program reviews.

14 Do you agree with those statements by Mr.
15 Hubbard?

16 (Witnesses conferred.)

17 A (WITNESS GALLO) Mr. Ellis, the words in Mr.
18 Hubbard's own statement are virtually no in-depth review
19 of implementation of design process of GE and Stone and
20 Webster. I guess the problem I am having with that is
21 comparing that to the words used by Mr. Dircks or in Mr.
22 Denton's quote at the bottom there, Number 57.

23 It appears that -- I guess my estimate of what
24 was said there was that there was a gap in our
25 inspection or review process where we were reviewing

1 programs. And we were reviewing programs being done by
2 Region IV and design descriptions and some minimal items
3 being done by NRR. And I think some of that gap has
4 been closed recently, particularly by -- NRR does do
5 more in-depth review of particular codes and standards
6 that are used. And the type of questions which you
7 referred to in your LILCO Exhibit Number 53 were getting
8 more into the design detail of justifying how design is
9 made.

10 I guess what the NRC statements are saying is
11 that their estimate of the situation was that there was
12 a gap in the inspection at one time, at least, in the
13 detailed processes that take place at the
14 architect-engineer's office. And it is my belief that
15 at least in the aspect of Region IV, that Region IV does
16 do, in the last couple of years anyway, has done a lot
17 more than QA program reviews. They have tried make a
18 concentrated effort to look at implementation and the
19 results of the engineering rather than just the
20 engineering program and the changes.

21 JUDGE BRENNER: Mr. Gallo, maybe I am not
22 remembering the question, but I think in your answer you
23 are comparing as a reviewer, if you will, the words that
24 Mr. Hubbard chose to use in his text with the words of
25 NRC Staff people in the margin. I think the question is

1 really -- and Mr. Ellis can correct me if I am wrong --
2 is what is your opinion as applied to Shoreham? And if
3 you can't answer, that would be the accurate answer also.

4 (Witnesses conferred.)

5 WITNESS GALLO: I would add, I guess, to the
6 extent that also in my opinion I think we have testified
7 during the last several days that we felt that we have
8 done some design implementation review type of
9 inspections at the site and have done enough to satisfy
10 ourselves that we have either uncovered a problem or
11 that the programs are satisfactory.

12 I find it very difficult to speak for Region
13 IV activity in the distant past as to what type of
14 inspections they were doing at the architect-engineer's
15 office. It was my understanding that they were
16 principally programmatic type inspections.

17 BY MR. ELLIS: (Resuming)

18 Q Mr. Gallo, in your answer you mentioned the
19 results of engineering. We have had testimony about
20 design control process reviews at Region IV and
21 testimony concerning the design control process at the
22 site. In addition to that, doesn't LILCO Exhibit 53
23 indicate the kind of design detailed review and results
24 of engineering review that NRR does with respect to
25 Shoreham in this instance?

1 A (WITNESS GALLO) Yes, sir, it certainly does.

2 MR. ELLIS: Judge Brenner, I am going to leave
3 that particular topic.

4 BY MR. ELLIS: (Resuming)

5 Q Gentlemen, I want to refer now to page 28 of
6 the CAT inspection. Mr. Lanpher asked you a number of
7 questions, Mr. Higgins, concerning the housekeeping
8 matter referred to in the CAT inspection. And as page
9 28 I think reflects the deficiencies noted were cleaned
10 up during that inspection and on February 26 there is a
11 notation there that a tour of those areas by the
12 inspector showed the findings concerning fire hazards
13 and housekeeping had been corrected.

14 Let me show you in that regard a memorandum
15 dated March 8, 1982, signed by Messrs Museler and
16 Youngling.

17 And this I would ask, Judge Brenner, that this
18 be marked LILCO Exhibit 54.

19 (The document referred to
20 was marked LILCO Exhibit
21 No. 54 for
22 identification.)

23 BY MR. ELLIS: (Resuming)

24 Q I would ask you gentlemen whether the
25 memorandum dated March 8, 1982, one page, signed by Mr.

1 Museler and Mr. Youngling, is an example of additional
2 corrective action or measure taken by LILCO to confirm
3 or reaffirm its efforts to maintain an acceptable level
4 of cleanliness at Shoreham?

5 A (WITNESS HIGGINS) Yes, it appears to be that.

6 Q And it is just after the CAT inspections; is
7 that right?

8 A (WITNESS HIGGINS) Yes, it is.

9 Q In that connection, gentlemen, with respect to
10 Mr. Museler and Mr. Youngling, Mr. Narrow, in the 9
11 years that you have been there, I take it you have had
12 an opportunity to observe and confer with Mr. Museler on
13 a number of occasions?

14 A (WITNESS NARROW) Yes, I have, Mr. Ellis.

15 Q And based upon the experience of the 9 years
16 that you have been there, does Mr. Museler sacrifice
17 quality for the sake of production?

18 A (WITNESS NARROW) No, I would not say that Mr.
19 Museler would sacrifice quality for the sake of
20 production. I think he is highly interested in
21 production, but I think he also is very well aware of
22 the fact that a lack of quality would in fact impede
23 production. And I think for that reason, if not for any
24 other, he would certainly not sacrifice quality.

25 Q All right. And, Mr. Higgins, given your

1 involvement with the preoperational startup program,
2 have you had occasion to deal at some length and depth
3 with Mr. Youngling?

4 A (WITNESS HIGGINS) Yes, I have.

5 Q And does Mr. Youngling sacrifice quality for
6 the purpose of advances in production?

7 A (WITNESS HIGGINS) No.

8 JUDGE BRENNER: Mr. Ellis, I was a little too
9 slow. Why don't we bind in LILCO Exhibits 54 for
10 convenience. And I guess we will do it one or two
11 questions late at this point.

12 (The document referred to, LILCO Exhibit 54,
13 follows:)

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A. SOLANO.

STant. INSERT#3
54

March 8, 1982

All Department Heads, Superintendents,
Supervisors and Contractors

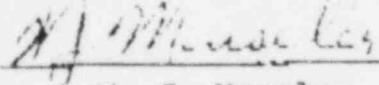
Housekeeping and Cleanliness Zone Requirements
SHOREHAM NUCLEAR POWER STATION - UNIT 1
W010-48923

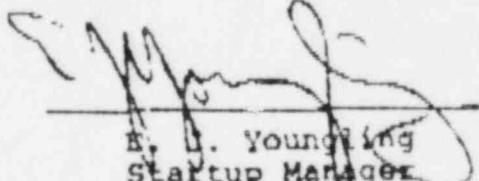
Reference: C.S.I. 13.1

In accordance with the referenced C.S.I., memorandums are periodically issued and posted at zone boundaries of the designated Controlled Access Areas of the plant delineating the housekeeping and cleanliness requirements (i.e. cleanliness of facilities, material and equipment; safety and fire prevention and fire protection including disposal of combustible materials and debris; control of access; protection of material; etc.).

It has recently been observed that people working in various organizations have been disregarding these memorandums. Strict adherence to the housekeeping and cleanliness instructions is mandatory. Any violations will be subject to disciplinary action up to and including termination.

You are hereby requested to advise all employees under your jurisdiction of this mandatory directive.


W. J. Museler
Manager of Construction
and Engineering


E. J. Youngling
Startup Manager

mm

- | | | |
|-------------------|-----------------|----------------|
| cc: M. S. Pollock | W. R. Sheridan | L. Duss |
| J. A. Smith | B. R. McCaffrey | E. J. Brabazon |
| J. Rivello | K. A. Howe | A. R. Shevade |
| W. Matejek | J. Carney | SR2 |
| J. M. Kelly | T. T. Arrington | |

1 BY MR. ELLIS: (Resuming)

2 Q Mr. Higgins, am I correct that what has been
3 marked as LILCO Exhibit Number 54 indicates that strict
4 adherence to the housekeeping and cleanliness
5 instructions are mandatory and violations will be
6 subject to disciplinary action up to and including
7 termination?

8 A (WITNESS HIGGINS) Yes, that is what it says.

9 Q It reflects a fairly strong attitude toward it
10 then, wouldn't you agree?

11 A (WITNESS HIGGINS) Those are fairly strong
12 words, yes.

13 JUDGE BRENNER: Mr. Higgins, how many people
14 have they fired for not complying with housekeeping
15 requirements?

16 WITNESS HIGGINS: I don't know, Judge.

17 JUDGE BRENNER: Do you know of any?

18 WITNESS HIGGINS: I am not aware of any, but I
19 might add that I probably would not be aware of any even
20 if it did occur.

21 JUDGE BRENNER: I said, Mr. Higgins, have
22 included any disciplinary action that you are aware of
23 against employees for violation of the housekeeping and
24 cleanliness requirements?

25 WITNESS HIGGINS: No, I am not.

1 BY MR. ELLIS: (Resuming)

2 Q Mr. Higgins, you were asked a number of
3 questions concerning the LILCO startup manual. That
4 matter was closed out in I&E report 82-23. Is that
5 correct?

6 A (WITNESS HIGGINS) Yes, that is correct. Then
7 we indicated that in our supplemental testimony.

8 Q And in closing out this item, you reviewed
9 copies of the startup manual to determine that revisions
10 had been correctly entered, and you also reviewed two
11 OCA surveillances of the startup manual. Is that
12 correct?

13 A (WITNESS HIGGINS) Yes.

14 Q Now, is it your conclusion that the startup
15 manual control matters you first referred to in 81-13
16 and then closed in 82-23 resulted in no adverse effects
17 on the conduct of the startup program?

18 A (WITNESS HIGGINS) To my knowledge, there were
19 none.

20 (Counsel for LILCO conferred.)

21 Q Mr. Higgins, I am not sure whether it was
22 directed to you, it may have been Mr. Gallo. This
23 morning we had testimony, in response to Judge
24 Carpenter's questions, that no welds not meeting the
25 ASME or AWS codes would be accepted, that the acceptance

1 criteria was zero. To achieve this acceptance criteria,
2 the QC inspection of safety-related welds would have to
3 be 100 percent; is that correct?

4 A (WITNESS NARROW) It is 100 percent now. The
5 amount of inspection performed would vary from perhaps a
6 visual inspection only for a Class 3 weld to a complete
7 category of inspection for a Class 1 weld, where they
8 would do in-process inspection. They would do a visual
9 inspection after completion of the weld. They would do
10 radiographic examination of the weld after it had been
11 completed, and they would -- well, the radiographic
12 examination in some cases, they would also do NT or PT;
13 that is, magnetic particle testing examination or die
14 penetrant examination.

15 So that while the amount of inspection that
16 would be performed by QC would vary with the type of the
17 weld, they would all have a 100 percent inspection.

18 Q When you say that there is 100 percent
19 inspection, you are referring, aren't you, to Shoreham,
20 100 percent inspection of safety-related welds?

21 A (WITNESS NARROW) Yes, I am.

22 Q And it is true, isn't it, that the quality
23 control inspection sample for all safety-related
24 installations at Shoreham is 100 percent?

25 A (WITNESS NARROW) Is that a question, Mr.

1 Ellis?

2 Q Yes, sir.

3 A (WITNESS NARROW) Yes, it is.

4 JUDGE MORRIS: Excuse me, Mr. Ellis.

5 Mr. Narrow, you used the pronoun "they" a
6 number of times. I just wanted to be clear that all of
7 those functions that you were talking about, the visual
8 inspection, die penetrant inspection, UT or whatever,
9 was done by QC organization at Shoreham. Is that
10 correct?

11 WITNESS NARROW: Well, there are really
12 several QA organizations, Judge Morris. It would depend
13 upon the type of weld and the responsibility for the
14 weld.

15 Excuse me.

16 (Witnesses conferred.)

17 WITNESS NARROW: Perhaps I am complicating
18 that too much, Mr. Higgins tells me. It is all done by
19 QC organization and in some cases where the
20 nondestructive examination is done by a consultant who
21 does particularly nondestructive examinations. Does
22 that answer your question?

23 JUDGE MORRIS: Partly. But now, too, which
24 organization do those groups belong? Is it Stone and
25 Webster, is it LILCO or an independent consultant? Is

1 it a pressure vessel award inspector?

2 WITNESS NARROW: The bulk of the welding
3 inspection other than the nondestructive examination on
4 the pipe welding was by Courter and Company. They had
5 their own QC organization to do that. The structural
6 welding, as I recall, was primarily by Stone and
7 Webster. There may have been some other inspection of
8 structural welding by the structural contracting, but I
9 am not positive on that point. If there was, it was not
10 very much.

11 Then there was an additional subcontractor
12 performing work on some of the reactor internals, and he
13 had his own QC organization and performed his own
14 inspection. All of these inspections were subject to
15 surveillance by the Stone and Webster quality
16 organization.

17 JUDGE MORRIS: And to what extent did I&E
18 determine that this program, rather complex as it was,
19 was adequate?

20 WITNESS NARROW: Well, the work, of course, by
21 I&E was primarily by our welding specialists and by the
22 NDE specialists, so that they would review the welding,
23 the welding quality manuals, as well as the work
24 instructions and specifications. They would observe
25 work in progress.

1 They would also review the NDE program. They
2 would review that in several aspects for the NDE
3 performed as portion of the work. They would review
4 that program and they would spot check some of the
5 performance of nondestructive examination, in addition to
6 which they had a preservice inspection, a PSI, which was
7 reviewed. The program was reviewed separately and also
8 some of the work performed as a part of that PSI, which
9 is, as you undoubtedly know, is a baseline for the
10 in-service inspection. They have reviewed and witnessed
11 some of the work being performed under that program.

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1 With respect to the Class 2 and 3 welds, they
2 would observe, independently observe the welding and
3 they would observe the results of the welding
4 inspection, as well as the review of records. And in
5 addition to that -- and this is a fairly recent
6 development in Region I -- we do have a van. I suppose
7 that is the only term I can give it, but it does go out
8 to do independent inspection primarily of welds, but
9 also of other equipment.

10 And they do go out and have been out at
11 several sites to independently perform inspections of
12 the welding quality, and they do this by notifying the
13 licensee that they would like to independently inspect
14 certain welds. They make the selection of the welds
15 from the drawings and then go out and they will perform
16 ultrasonic testing and perform radiography and perform
17 some liquid penetrant and magnetic particle testing.
18 And then they also, in addition to performing this, they
19 will independently review the radiographs on the site
20 for some of the work that has been performed by the site
21 QC organization.

22 JUDGE MORRIS: The in-service inspection
23 program? Is that in compliance with Section 11 of the
24 ASME code?

25 WITNESS NARROW: Yes, sir.

1 JUDGE MORRIS: Does it apply to piping as well
2 as the reactor vessel?

3 WITNESS NARROW: It applies to piping I
4 believe, although I am not really an expert on
5 in-service inspections. I believe it include some of
6 the pipe supports, but I don't know in what respects.
7 And also, the vessel.

8 JUDGE MORRIS: Who determines whether or not
9 the program carried out by LILCO or its contractors is
10 in compliance with the code requirements?

11 (Panel of witnesses conferring.)

12 WITNESS HIGGINS: Judge, the pre-service
13 inspection, which is the only one that we've really
14 inspected to date, is the only one I could answer to.
15 And the program, the pre-service inspection program, was
16 reviewed by NRR to determine the acceptability of the
17 program in terms of the scope and whether or not it
18 complied with the ASME code or not. The implementation
19 of the program was reviewed by Region I, NDE and
20 pre-service inspection specialists in several
21 inspections.

22 (Panel of witnesses conferring.)

23 WITNESS HIGGINS: In addition to site
24 inspections, our inspector in that area has reviewed
25 procedures both onsite and back in the region. That is,

1 he had procedures sent to him and reviewed them in the
2 office and then he went to the site, he did further
3 followup and witnessing.

4 JUDGE MORRIS: And you say it is part of your
5 responsibility to see that the actual inspection is
6 carried out in accordance with that program?

7 WITNESS HIGGINS: It is part of the inspection
8 program. It is part of Region I's responsibility and
9 that is done by our specialists in that area and not by
10 either Mr. Narrow or myself.

11 JUDGE MORRIS: And you differentiated between
12 the pre-service inspection and the in-service inspection
13 program. Actually, the pre-service is a part of the
14 Section 11 requirement, isn't it?

15 WITNESS HIGGINS: It is considered the base
16 line for the in-service inspection. Yes, Judge. And
17 the only reason I differentiated it is because the
18 review of the program and of the implementation of the
19 actual in-service has not been done yet. But when that
20 comes in, we will do that, also.

21 JUDGE MORRIS: Thank you very much.

22 JUDGE BRENNER: I guess also you may have
23 differentiated it for my benefit since I got confused
24 earlier when that matter was raised, I think by Mr.
25 Narrow.

1 BY MR. ELLIS (Resuming):

2 Q Mr. Higgins, look, if you would please, at
3 transcript 16,739 which is the 16th of December. There,
4 Mr. Lanpher asked you whether the violations cited in
5 I&E 79-05 were similar to the Audit Finding A-1 of FQC
6 14, except that the latter was found by LILCO, and you
7 agreed. Is it fair to say that just that basic
8 similarity is not enough to conclude that that is a
9 recurrent problem?

10 (Panel of witnesses conferring.)

11 A (WITNESS HIGGINS) I stated in that transcript
12 reference that the problems were similar, and I still
13 feel they are similar. But I guess to say whether or
14 not that is a recurrent problem, you definitely need
15 more information. When I said it is similar I didn't
16 necessarily mean that it was a recurrent problem. That
17 is, that the problems were similar enough that you would
18 expect corrective action for a particular one to go to
19 the other one. That is a somewhat different question
20 than just are they similar.

21 JUDGE BRENNER: Mr. Ellis, we don't go back to
22 the distant past here, either; we don't have last week's
23 transcript, and we apologize for that. Could somebody,
24 just in one sentence, remind me of what that item was?

25 WITNESS HIGGINS: That had to do with the

1 other manuals that were not kept up to date, as found by
2 FQC Audit 14.

3 JUDGE BRENNER: Thank you.

4 BY MR. ELLIS (Resuming):

5 Q Look further on, Mr. Higgins, to transcript
6 16,744. There I think Mr. Lanpher referred you to page
7 11 of your pre-filed testimony.

8 MR. LANPHER: Excuse me, which page?

9 MR. ELLIS: Eleven.

10 MR. LANPHER: 16,744 just has dialogue between
11 you and me and Judge Brenner.

12 MR. ELLIS: Yes, you are right.

13 (Counsel for LILCO conferring.)

14 MR. ELLIS: We will have to look for that.
15 That is the wrong page reference.

16 JUDGE BRENNER: Why don't you ask the question
17 anyway, keying off page 11 of the direct testimony, if
18 you can?

19 MR. ELLIS: The question I had keyed
20 ultimately off of the transcript, but let me try it.

21 BY MR. ELLIS (Resuming):

22 Q Mr. Lanpher asked you a number of questions
23 concerning the instances of failure to update control
24 manuals.

25 MR. ELLIS: Judge Brenner, I think it is

1 necessary for us to find the transcript to make it a
2 fair questions, so we will have to look for that.

3 BY MR. ELLIS (Resuming):

4 Q Look at transcript page 16,644, which is, I
5 believe, the 16th as well, involving the calibration of
6 flow meters using flow meters during leak rate testing.
7 On lines 20 through 24 you indicated that you generally
8 found the instruments used in the Shoreham pre-op test
9 program to be properly calibrated and traceable.

10 In light of that, would it be fair to say that
11 the finding in 82-10 and the one in 82-15 which you
12 discussed in your cross examination involving
13 calibration of strain gauges and crack width gauges are
14 isolated instances and not an indication of programmatic
15 problems with LILCO's calibration program?

16 A (WITNESS HIGGINS) I would agree that those two
17 were individual instances, and also, that they are not
18 indications, based upon my experience, of a programmatic
19 problem with instrument calibration.

20 Q Now, on transcript page 16,783 and following,
21 there was some testimony concerning the reactor pressure
22 vessel, and I wanted to clarify one point. As I
23 understand it, the situation with respect to your inert
24 environment for the inside of the pressure vessel was
25 that it could not be -- the leakage rate could not be

1 maintained at the specified pressure so that the result
2 was you had to keep putting in more nitrogen in order to
3 maintain the proper storage environment. Is that
4 correct?

5 A (WITNESS NARROW) That is correct, Mr. Ellis.

6 Q Well, wouldn't that make that a unique
7 situation in connection with the general category of
8 storage?

9 A (WITNESS NARROW) Well, I think it is quite
10 unique in that they had a specification that they really
11 couldn't meet with the pressure vessel in the condition
12 it was in at that time. That is, they had some
13 temporary covers on it, and they couldn't make the
14 requirement.

15 However, I might say that as far as we could
16 determine, they did have a blanket of inert gas in the
17 pressure vessel. It was just that they were pumping gas
18 through at a higher rate than had been specified.

19 Q In other words, to keep the amount of gas in
20 there that they needed, they simply had to put more gas
21 in?

22 A (WITNESS NARROW) That is correct.

23 Q And based upon your recollection that is, in
24 fact, what was done?

25 A (WITNESS NARROW) That was done until the

1 question of meeting the specification was raised by our
2 inspector. And following that, they referred it back to
3 General Electric Company and the specification was
4 revised.

5 Q Mr. Higgins, there was some testimony in your
6 cross examination by Mr. Lanpher concerning a corrosion
7 of a terminal box. It was Field Audit 740, Finding 4.2,
8 and the testimony is generally on pages 16,798 and 99.

9 A (WITNESS HIGGINS) We have that.

10 Q I think you stated there that the condition
11 had existed for approximately a year after the LILCO
12 audit finding documented the condition. The fact that
13 the terminal box had not been replaced a year later does
14 not mean that the corrective action was inadequate or
15 untimely, does it?

16 A (WITNESS HIGGINS) Not necessarily. In this
17 case it was tracked, and when I asked about it even
18 after some period of time, quality control people were
19 able to show me the documentation that it was scheduled
20 for replacement, and at that time, the filter units for
21 which that box was -- which box was attached to and
22 which it was associated with had not entered into the
23 pre-operational test phase yet, so there was no need to
24 actually use the box at that time.

25 (Counsel for LILCO conferring.)

1 Q Mr. Higgins, based upon your experience in
2 observing the storage program at Shoreham, are there any
3 LILCO practices that you have found to be significant or
4 noteworthy? On the positive side?

5 (Laughter.)

6 JUDGE BRENNER: Before you added that, I
7 thought we were going to have a long list.

8 (Laughter.)

9 JUDGE BRENNER: I'm just kidding. Or not
10 necessarily serious, let me put it that way.

11 (Panel of witnesses conferring.)

12 WITNESS HIGGINS: There are a couple of areas
13 that I -- in this general category of storage and
14 equipment protection that I guess I would say that they
15 have done well. One of them is in the startup area, and
16 I think I testified to this briefly before. Where
17 equipment is required to be opened up for some reason or
18 another, a repair or a rework during the startup phase,
19 that LILCO has a cleanliness instruction which addresses
20 equipment preservation and cleanliness of areas around
21 that particular equipment, both before it is opened and
22 while the item is opened and that includes quality
23 control inspections for equipment cleanliness,
24 preservation, what have you, prior to closing it back up.
25 And then there is documentation associated

1 with this instruction which is kept with the repair or
2 rework for each item that is opened up in this manner.

3 Also, one other area that comes to mind is in
4 the area of control and equipment protection, also. As
5 item are turned over to startup -- and I guess LIICO has
6 been implementing this for about the last three or four
7 years -- as it has particular components or particular
8 small, discrete areas that are turned over to startup,
9 cages, if you will, are built around that particular
10 component out of either wood or mesh metal or this type
11 of thing to protect the item from continuing ongoing
12 construction activities that are near to it, in order to
13 get better control of the item from a startup
14 standpoint, now that the item is construction complete
15 and in order to try to keep other activities and other
16 debris away from the component that is now under
17 startup's control and is being operated.

18 (Panel of witnesses conferring.)

19 WITNESS HIGGINS: One other one that comes to
20 mind is in the electrical penetration area, and there
21 was a requirement to have a certain pressure of nitrogen
22 in the electrical penetrations, and LIICO established
23 very frequent surveillances by personnel dedicated to
24 that task to monitor the nitrogen pressure in each of
25 the various electrical penetrations. And I had reviewed

1 that on several occasions, and also looked at the
2 nitrogen pressure in electrical penetrations on numerous
3 tours and never found a problem in that area.

4 BY MR. ELLIS (Resuming):

5 Q The three items that you mentioned, Mr.
6 Higgins, they apply to non-safety related, as well as
7 safety-related; is that correct?

8 A (WITNESS HIGGINS) Yes, that is correct.

9 Q You were asked a number of questions
10 concerning equipment storage at Shoreham. Based on your
11 experience at other plants and based upon your knowledge
12 of the storage findings you were asked about and that
13 you reviewed in both the LILCO and I&E audits involving
14 such things as missing pipe caps, covers, et cetera.
15 Are those similar in nature to the types of storage
16 findings that you found at other construction sites in
17 your inspection activities?

18 A (WITNESS NARROW) Yes, I would say they are
19 quite similar. I think the question of protection of
20 equipment storage has perhaps been over-emphasized here
21 in that with the large quantity of items of equipment
22 that you have storage and the long period of time that
23 it is stored, it would be surprising if you didn't
24 identify some items of non-conformance in the storage
25 area.

1 And my own opinion of this subject is that you
2 will never completely correct that problem or prevent it
3 from occurring. And the thing which I have tried to do
4 in performing inspections at this site or at any site is
5 to assure that the licensee concentrates enough effort
6 on inspection of this area and on maintenance of the
7 storage requirements so that even though you may find
8 some non-conforming conditions, they would be corrected
9 rather rapidly.

10 And I think in that respect, storage
11 conditions -- we do find non-conforming conditions in
12 storage at all sites, and I wouldn't say that Shoreham
13 was significantly better or worse than any of the other
14 sites that I have been on.

15 (Counsel for LILCO conferring.)

16 Q Mr. Higgins, I'm reminded that in my haste I
17 neglected to ask you a question or two more about LILCO
18 Exhibit 54. Do you have that in front of you? That
19 memorandum is to all department heads, superintendents,
20 supervisors and contractors. Is that the one you have?

21 A (WITNESS HIGGINS) Yes.

22 Q Confirm for me, please, that in the first
23 paragraph of that it says that in accordance with the
24 reference, C.S.I. memorandums are periodically issued
25 and posted at zone boundaries of the designated

1 controlled access areas of the plant, delineating the
2 housekeeping and cleanliness requirements. And there
3 follows a parenthetical. Did I read that correctly?

4 A (WITNESS HIGGINS) Yes.

5 Q Have you noticed or observed these memoranda
6 periodically issued and posted that are referred to
7 there?

8 A (WITNESS HIGGINS) Yes.

9 Q Mr. Higgins, in response to a question from
10 Judge Brenner you stated that Mimics are a post-TMI
11 improvement and that from your experience, you think the
12 Shoreham Mimics are superior. When did the Shoreham
13 design incorporate the Mimics? If you know.

14 A (WITNESS HIGGINS) Based on the involvement
15 that I have had with the control room human factors
16 reviews and discussions with personnel involved, it is
17 my understanding that LILCO's Mimics were planned and
18 laid out and ordered -- planned, what have you -- in the
19 early 1970s.

20 Q Gentlemen, you have indicated that some of the
21 field audits are reviewed on a programmatic basis by
22 I&E, and you indicated that you had reviewed some field
23 audits, FQC audits and quarterly reports that were
24 identified to you in preparation for this oral
25 testimony. And I would like to see if I could be a

1 little bit more specific about those.

2 Are the ones that you reviewed in preparation
3 for the oral testimony the ones that were identified in
4 Mr. Lanpher's December 2nd letter, and in a handwritten
5 document from Mr. Lanpher dated December 10th?

6 A (WITNESS GALLO) We have a December 2nd letter
7 from Mr. Lanpher to Mr. Bordenick which included field
8 audits, quarterly reports and FQC audits.

9 Q And is there also a handwritten memorandum
10 dated December 10th?

11 A (WITNESS GALLO) Yes, we have that December
12 10th memo from Mr. Lanpher to Mr. Bordenick.

13 MR. ELLIS: Judge Brenner, rather than burden
14 the record with reading them, could we just supply, by
15 agreement with Mr. Lanpher, just a list of those and
16 just submit it for the record?

17 JUDGE BRENNER: That is to show that those are
18 the ones that were reviewed for their oral testimony and
19 those are the only ones that they reviewed?

20 MR. ELLIS: No, sir. I'm going to go on and
21 ask about others.

22 JUDGE BRENNER: Yes, you can do it that way.
23 What do you want to do? End up with an identification
24 by number of all of the ones they reviewed for their
25 oral testimony?

1 MR. ELLIS: And then I'm going to ask them a
2 question based on that.

3 JUDGE BRENNER: Okay.

4 BY MR. ELLIS (Resuming):

5 Q In addition, I think you gentlemen indicated
6 that there was programmatic review of field audits; is
7 that correct? And we also saw an instance in an I&E
8 report where there was reference to field audits and
9 surveillances; is that correct?

10 A (WITNESS NARROW) That is correct.

11 Q And that happens on occasion in the I&E
12 program as well?

13 A (WITNESS NARROW) That is correct.

14 Q And you have done that in connection with your
15 activities as well?

16 A (WITNESS NARROW) Yes, I have from time to time.

17 Q And in addition, did you all review any
18 portions of the testimony by the LILCO panel in this
19 case concerning the audit findings they were asked about
20 by the county?

21 A (WITNESS HIGGINS) Yes, we have reviewed
22 portions of that.

23 Q And I think, Mr. Narrow, you were also present
24 for some portion of that testimony.

25 A (WITNESS NARROW) I was present only during the

1 testimony concerning the engineering assurance audits.

2 Q Based upon all of that familiarity with the
3 field audits -- that is, the preparation you did for
4 this oral testimony, the programmatic reviews and field
5 audits that you have testified to and the other work
6 that you have done in your I&E inspections and your
7 familiarity with portions of the LILCO panel testimony
8 on the LILCO audits -- is it fair to say that the
9 findings that you are familiar with and include the I&E
10 inspections, the findings and violations that you are
11 familiar with, reflect the nature and number of
12 observations one would reasonably expect in a nuclear
13 power plant construction program conducted in accordance
14 with Appendix B?

15 A (WITNESS NARROW) Yes.

16 Q And in your opinion, did those observations
17 reflect a pattern of non-compliance or a pattern of
18 compliance with the Appendix B program?

19 (Panel of witnesses conferring.)

20 JUDGE BRENNER: Is that their only two
21 choices, Mr. Ellis?

22 (Laughter.)

23 JUDGE BRENNER: I will let the witnesses work
24 it out if you don't want to respond.

25 (Panel of witnesses conferring.)

1 JUDGE BRENNER: You don't have to restrict
2 yourself to those two choices in your answer. You can
3 if you want to.

4 WITNESS NARROW: I would say, Mr. Ellis, based
5 on the items you've identified and on the inspection
6 program which we have conducted, that the findings are
7 what you would normally expect to find on the site which
8 is conducting a storage program and auditing it in
9 accordance with Appendix B.

10 JUDGE BRENNER: I don't think Mr. Ellis
11 limited the question to storage.

12 WITNESS NARROW: I would extend it then to the
13 normal review, our review of their audit program and our
14 inspection of the audits, that it would be there -- the
15 types of findings that you would normally expect to find
16 in inspecting an audit program.

17 (Counsel for LILCO conferring.)

18 MR. ELLIS: Judge Brenner, there was one item
19 that we were not able to locate again in the
20 transcript. We think it is a typographical error, but
21 we will try to find it as quickly as we can. But that
22 completes LILCO's examination of the staff.

23 JUDGE BRENNER: Within VIII on your cross
24 plan, which sub-item, again, is the one you couldn't
25 find the transcript reference for?

1 MR. ELLIS: It is an item -- I think it is
2 under (D).

3 (Counsel for LILCO conferring.)

4 The one I'm referring to is under (D) and that
5 is the one we are looking for. There was one under (C)
6 which, in the interest of concession of the shortness of
7 life, we are not going to bother with.

8 JUDGE BRENNER: Well, you did ask one about
9 (C), I thought.

10 MR. ELLIS: Yes, we did.

11 JUDGE BRENNER: You're finished except for
12 that. And when you find the transcript page let us know
13 and we will give you an opportunity to interject.

14 MR. ELLIS: Thank you. It may be just a
15 typographical error.

16 JUDGE BRENNER: Let us know whenever you find
17 it so you can ask it.

18 Mr. Bordenick, let's go to you and start with
19 your questions.

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1 REDIRECT EXAMINATION

2 BY MR. BORDENICK:

3 Q Mr. Gallo, have you had any training or
4 courses relating to boiling water reactors or operation
5 of boiling water reactors?

6 A (WITNESS GALLO) Yes, sir. That is something
7 I had not included previously, that when I was at
8 Susquehannah I did attend the boiling water reactor
9 course for operations inspectors, which included a
10 four-week technology course, a two-week advanced
11 technology course, and a one-week simulator course.

12 In addition to that, I attended the course
13 which is called the station nuclear engineer's course.
14 Those courses were all standard at the time for an
15 operations inspector. So I have had the opportunity to
16 attend most of the construction training provided by the
17 NRC for inspectors and essentially all of the training
18 for a boiling water reactor operations inspector.

19 Q This next question is directed to Mr. Gallo or
20 any member of the panel. There have been responses
21 given by one or more members of the panel to various
22 questions, and you have mentioned the use of specialists
23 in the region.

24 The first question I have on that is, can you
25 list for us the various types of specialists that have

1 been available in the region, specifically at Shoreham,
2 as it relates to inspection at Shoreham? And prior to
3 giving that answer, would one of you just briefly
4 summarize what it is that these various specialists are
5 supposed to be doing, including how they interact or
6 interface with the construction -- previous construction
7 inspectors and presently the resident inspector?

8 A (WITNESS GALLO) Yes. I think we have
9 discussed our inspection program quite extensively, but
10 the regional specialist type inspector does do
11 inspections at essentially all of the construction
12 sites, and now does quite a few inspections at operating
13 sites, and is limited in his inspection area to his
14 areas of expertise, and we will enumerate those areas.

15 So he does get a chance to look at all of the
16 various sites in the regional district and can get a
17 broad viewpoint of how, for instance, welding is going
18 at the various sites. And in addition to that, he gets
19 the chance to look at how the different construction
20 managers form their programs, and if there is a common
21 construction manager he can recognize a problem on one
22 site that may be applicable to another site because it
23 is the same construction manager or the same welding
24 contractor that is at that particular site.

25 The project inspector or resident inspector is

1 normally more of a generalist inspector, who probably
2 gets involved in all of the areas and doesn't have
3 necessarily quite the depth of experience in any
4 particular area. But generally they would also have
5 their own particular areas where they feel quite
6 qualified, so that they would do some actual inspections
7 in those areas. But in certain other disciplines they
8 may be more limited in the depth of the inspection they
9 can conduct.

10 I think we have the list of areas now where
11 the regional office has specialties or different
12 specialist inspector assignments have been made.

13 Q For Shoreham?

14 A (WITNESS HIGGINS) Yes, for Shoreham. And I
15 have got these. I have a list here of inspections and
16 personnel that conducted those inspections. So in
17 utilizing that, that is where I came up with the list.

18 We have a specialist in the area of
19 preoperational testing, startup testing, nondestructive
20 examination, electrical instrumentation, management
21 programs, mechanical, civil engineering, civil and
22 structural engineering, soils engineering, quality
23 assurance, welding, metallurgy and corrosion, health
24 physics, environmental, emergency planning and
25 security. And we may have missed one or two, but I

1 believe that is probably fairly close.

2 Q Moving to another area, during the course of
3 the cross-examination by Messrs. Lanpher and Ellis
4 several times one or more members of the panel have
5 referred to the NDE van, and I think Mr. Narrow most
6 recently described, I believe for Judge Morris, just
7 what that van did at the Shoreham site. I don't want to
8 get into that area again, but could one of you briefly
9 give us a little more description of what the van
10 consists of, what sort of facilities are involved, and
11 more of a general rundown, rather than what has been
12 done at Shoreham, which I think has been adequately
13 covered?

14 A (WITNESS HIGGINS) Well, there is some
15 overlap. Basically, they utilized essentially all of
16 their capabilities at Shoreham. So if I just run
17 through quickly which capabilities they did use at
18 Shoreham, you will get most of those. As far as, in
19 addition to the various paperwork records, procedures
20 and radiograph reviews that were done at Shoreham, they
21 performed actual nondestructive examinations in the
22 following areas:

23 They did radiography, magnetic particle
24 examinations, liquid penetrant examinations, thickness
25 measurements of weldments and pipe materials, hardness

1 measurements, ultrasonic exams, visual exams, material
2 verification using alloy analyzer, and that completes
3 the list.

4 MR. LANPHER: I hate to interrupt. What was
5 the second one you read off after radiography and before
6 liquid penetrant?

7 A (WITNESS HIGGINS) Magnetic particle.

8 MR. LANPHER: Thank you.

9 BY MR. BORDENICK: (Resuming)

10 Q Moving to another area, I have one brief
11 question addressed to Mr. Gallo. There has been quite a
12 bit of testimony regarding the SALP, or Systematic
13 Analysis of Licensee Performance, that was compiled or
14 done by the region. I have one specific question on
15 that.

16 Either for SALP I or for SALP II, or actually
17 for both of them, did the region's activities include a
18 visit to the Shoreham site by the Regional Administrator
19 and by the Director of the Division of Project and
20 Resident Programs?

21 A (WITNESS GALLO) Yes, sir. Let me answer for
22 the July report. On May 21st, 1982, we did take a tour
23 of the site. Mr. Haines, the Regional Administrator,
24 Mr. Sterostecki, our Division Director, both accompanied
25 Mr. Higgins and myself on a tour of the Shoreham

1 facility prior to the SALP meeting which was held in
2 Hicksville, Long Island, offices.

3 I don't have the SALP report here for 1981.
4 It would be very difficult to determine without the
5 report whether there was a tour at the site. I don't
6 believe Mr. Haines was the Regional Administrator at
7 that time.

8 A (WITNESS HIGGINS) Our Regional Director at
9 that time was Mr. Greer and I believe he did go up to
10 the site for that 1981 SALP.

11 Q You were asked on a number of occasions by Mr.
12 Lanpher why certain things were cited as a violation and
13 other things weren't. In that context or bearing that
14 particular context in mind, could you briefly describe
15 for us what the present primary focus of the NRC
16 inspection program is at Shoreham?

17 A (WITNESS GALLO) Yes, sir. I guess we have
18 alluded to it before, but our management has told us,
19 and we have passed it on to our inspectors, that one of
20 the things that -- the primary thing that we're supposed
21 to be looking for is reactor safety, and that we are not
22 necessarily only -- certainly not only compliance
23 inspectors.

24 And as a result of that, more emphasis on
25 safety of plant operations, you will find more findings

1 in our inspection reports that have to do with not
2 necessarily safety-related items where we, as Mr.
3 Higgins has done on occasion, have brought to the
4 attention of the Licensee some concern that we have had,
5 and we have gone as far as documenting an inspection
6 report where we thought it could affect safety, but not
7 necessarily could be tied back to an NRC requirement or
8 a regulation.

9 Q Gentlemen, Judge Brenner asked you a question,
10 and perhaps he was prepared to follow up and I imagine
11 if that is the case he will let us know. But there was
12 some questions previously from Judge Brenner regarding
13 the containment spray blockage.

14 JUDGE BRENNER: That is on 17,059 to 17,061.

15 MR. BORDENICK: If the Board is going to
16 pursue --

17 JUDGE BRENNER: No, feel free. In fact, I
18 believe I invited you to do it and I'm glad to have you
19 do it. I didn't know if Mr. Higgins wanted the
20 reference or not.

21 BY MR. BORDENICK: (Resuming)

22 Q Do you have the page reference?

23 A (WITNESS HIGGINS) I recall the question.

24 Q My specific question is, what further actions
25 could Region I take on that particular item, and if you

1 can recall any similar type items, once the technical
2 questions are resolved?

3 A (WITNESS HIGGINS) Yes, Mr. Bordenick. Our
4 intention on this item and similar items is, when the
5 technical item is resolved to have discussions among the
6 involved inspector, be it the resident inspector or
7 other inspectors. We would get the resident inspector
8 involved and also regional management involved to make a
9 decision at that time as to whether or not there are any
10 additional questions beyond the technical questions that
11 need to be addressed.

12 And it would be a situation that would have to
13 be evaluated on a case basis, and the technical
14 resolution of the particular item would have to be
15 looked at carefully and then a decision made as to
16 whatever the technical resolution was, whether or not
17 there were broader questions from, say, a quality
18 standpoint that needed to be addressed, and if that
19 turned out to be the case on an individual case basis we
20 would go back to the Licensee and ask him to do
21 additional reviews or whatever it appeared to us was
22 necessary based upon the particular item.

23 JUDGE BRENNER: Have you finished that item,
24 Mr. Bordenick?

25 MR. BORDENICK: Yes, I have.

1 JUDGE BRENNER: Well, other than that general
2 context, which I think is consistent with the general
3 context you gave us previously, Mr. Higgins, do I infer
4 that you're just not prepared to offer any further
5 opinion as to that item at this time?

6 WITNESS HIGGINS: As to that specific item,
7 we're not prepared, and probably won't be for at least a
8 couple of weeks, to decide, given the technical
9 resolution, what additional we need to do. We feel
10 there are probably some additional things that need to
11 be looked at on that item, so I guess we feel it is not
12 a clearcut one that is immediately resolved. And we
13 feel we're probably going to go back to Long Island
14 Lighting Company with some questions about how their
15 engineering and inspection program looks at
16 interferences between systems.

17 And we are aware that they do do some things
18 in this area, but I think what we're going to have to do
19 is go back and look at those and make some evaluation as
20 to whether what they have is adequate or not.

21 JUDGE BRENNER: I take it -- well, let me ask
22 you, is it also a possibility that in addition to the
23 possibility that you might ask them what you just
24 stated, that you might want them to trace what just
25 happened in this instance in light of whatever they say

1 about their overall program?

2 (Panel of witnesses conferring.)

3 WITNESS HIGGINS: We may want to do that,
4 although it may be more beneficial, given the program,
5 to go out and look at other areas that are similar.

6 JUDGE BRENNER: Potentially -- and bearing in
7 mind your testimony as to root causes -- would it be
8 useful to know how it happened in this instance as an
9 assistance to IE to know what else to look at?

10 WITNESS HIGGINS: I can understand what you
11 are saying and we would look at that. But I guess
12 perhaps we might feel that, given their programs, we
13 might get more mileage, so to speak, by going out and
14 just picking a new sample of things of that nature to
15 look at. And granted that there may have been -- it
16 does depend on what we would find, as to whether or not
17 the type thing that we found either would be covered by
18 their programs or wouldn't, and that would have some
19 bearing on it.

20 BY MR. BORDENICK: (Resuming)

21 Q Mr. Higgins, do you have a copy of the
22 transcript for December 15th in front of you?

23 A (WITNESS HIGGINS) Yes.

24 Q Specifically page -- well, the question from
25 Judge Brenner starts on 16,586 and goes over to 16,587.

1 Rather than my reading this to you, why don't you take a
2 moment and summarize for us what you stated there and
3 indicate whether you would like to clarify any portion
4 of your previous testimony.

5 A (WITNESS HIGGINS) The part we're interested
6 in here would be in the middle of the page, at lines 14
7 to 18 on 16,587, where in a discussion of the electrical
8 separation area one of the things that was said was
9 that, "And I think from a QA standpoint it wasn't clear
10 to the QA people what they had to even inspect to at
11 this time."

12 I think, although struggling with it a bit at
13 the time because of the difficult overlap between the
14 technical problems in criteria, which had not been
15 finally resolved at this time, and trying to somehow
16 separate that out from the QA aspects of it, and after
17 going back and reviewing the inspection reports and
18 discussing it with the inspector involved, I believe the
19 situation that existed at that time was, there were QA
20 procedures and inspections and criteria that the quality
21 control inspectors at this time had and were in fact
22 operating to, however, because of the changing criteria
23 the final QC criteria which exist at this time had not
24 been developed yet and therefore some of the attributes
25 of the full commitments that were made in the FSAR and

1 to Reg Guide 1.75 had not been defined yet in
2 procedures.

3 And it is our understanding that the Licensee
4 was aware that more needed to be done and just had not
5 yet established those. This is particularly in the area
6 of separation between safety-related and
7 non-safety-related cable in free air space. The
8 Licensee was planning on doing additional work, namely
9 the entire cable-wrapping program and establishing
10 inspections to define where those had to be wrapped and
11 establishing a program to actually wrap them and come up
12 with a qualified material. In fact, at the time of the
13 CAT inspection the material and manner in which they
14 were going to be wrapped had not even been developed
15 yet.

16 So therefore I hope that provides a little bit
17 more explanation of what I meant by that statement.

18 Q Mr. Gallo, in that same transcript for
19 December 16th, would you look at page 16,604, and I
20 think the discussion carries over to subsequent pages
21 again. So that I won't burden the record with reading
22 the transcript, would you summarize what you were
23 testifying to at that particular place in the transcript
24 and if you have anything to clarify regarding that
25 previous testimony please do so.

1 A (WITNESS GALLO) Yes, sir. Mr. Bordenick, I
2 think I was trying to speak in a generic frame there,
3 and we got involved with the specifics of a particular
4 activity, and I believe Judge Brenner did ask a
5 pertinent question a couple of pages later to straighten
6 out what I was trying to express.

7 But let me state it again for the record.
8 What I was trying to get across in the generic mode was
9 that if you are looking at an activity and you want to
10 determine if that is a quality-affecting activity or
11 there might be a site procedure that says do something a
12 certain way, one of the references that should be used
13 is, or could be used, is the FSAR to determine if the
14 Licensee considers it a quality-related item or
15 activity.

16 And the other thing I was trying to use was a
17 regulatory guide to see that the Licensee was committed
18 to a particular thing and that the NRC considered it a
19 program activity.

20 (Discussion off the record.)

21 WITNESS GALLO: There are two things further:
22 that if you do have that FSAR regulatory guide
23 commitment trail and you have a very strong citation to
24 write; the other case is, if you do not have that trail
25 you still have the option of writing a violation. I

1 think you have seen some of the violations we have
2 talked about here, that there are direct violations
3 written against Appendix B going directly to a procedure
4 or a specification.

5 So that it can be written legally both ways.

6 JUDGE BRENNER: As I understand it, if you
7 can't find a procedure they violated, you can cite them
8 for not having the procedure.

9 (Laughter.)

10 WITNESS GALLO: That's also true.

11 WITNESS HIGGINS: But I guess our point really
12 is on this that without the reg guide or FSAR
13 commitment, if it is a quality attribute of a
14 safety-related or a quality item activity, then we feel
15 that it is a legitimate citation against Appendix B.
16 And you don't necessarily need that trail through the
17 reg guide and FSAR if it is a quality aspect of a
18 quality or safety-related activity.

19 JUDGE BRENNER: My premise -- in a
20 quasi-light-hearted vein, my comment was premised on a
21 regulatory source somewhere, for example Appendix B.

22 Do you want to take a break now, Mr.
23 Bordenick?

24 MR. BORDENICK: Yes.

25 JUDGE BRENNER: About how much more do you

1 have?

2 MR. BORDENICK: I'm fairly close to being
3 finished, and that was one of the purposes of taking a
4 break, was to see if I have covered everything I wanted
5 to.

6 JUDGE BRENNER: All right, and then we will
7 follow up with our questions. And we will come back at
8 3:40.

9 (Whereupon, at 3:25 p.m., the hearing in the
10 above-entitled matter was recessed, to reconvene at 3:40
11 p.m. the same day.)

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1 JUDGE BRENNER: We are prepared to continue,
2 Mr. Bordenick.

3 MR. BORDENICK: Judge Brenner, the Staff has
4 concluded its redirect.

5 JUDGE BRENNER: Judge Morris will start.

6 BOARD EXAMINATION

7 BY JUDGE MORRIS:

8 Q Gentlemen, I have a number of questions.
9 Unfortunately, I haven't yet had the opportunity to
10 organize them very well, so I will be jumping from one
11 thing to another and possibly even repeating some things
12 which I either didn't get good notes on or I have
13 forgotten were already answered.

14 Do I sense correctly, gentlemen, that you view
15 the FSAR and its contents as a commitment by the
16 licensee to comply?

17 A (WITNESS HIGGINS) Yes.

18 Q Do you view the FSAR as predominantly a
19 licensing document or, in the alternative, a design
20 control document?

21 A (WITNESS GALLO) A licensing document, Judge
22 Morris.

23 Q So, following up on that, would you view the
24 approved drawings and the E&DCRs which go with them as
25 the controlling design documents, the primary control of

1 design as opposed to the FSAR? Perhaps I should make
2 that a little easier, where there is not a conflict
3 between the two.

4 (Witnesses conferring.)

5 A (WITNESS HIGGINS) Yes, we agree with that,
6 and there are a few other things besides the drawings
7 and EEDCRs, like specifications and this type of
8 collateral design document.

9 Q So that the FSAR itself is not the controlling
10 design document?

11 A (WITNESS GALLO) No, sir. We don't believe
12 that it is.

13 Q Does I&E review the QA manual in the sense of
14 approving the manual or in the sense of obtaining
15 insights into the QA program?

16 A (WITNESS GALLO) In general, Judge Morris, the
17 regional office does not use the word "approve" on QA
18 manuals or any other procedures that we review. It is a
19 review for, depending upon the instance, compliance or
20 implementation or incorporation, and again you will find
21 in the inspection reports most of the time we write
22 something about a QA manual, the part that we don't
23 think the licensee has written the procedure in
24 accordance with, reference A being an FSAR commitment or
25 the 10 CFR 50, Appendix B, if we are talking QA

1 manuals.

2 But there is a very rare instance that you
3 will find anybody in the regional office will approve
4 anything and rarer even where they would, if we had a
5 choice, where we would do it. One of the reasons for
6 that, again, is, of course, to maintain our independence
7 from the utility. We do not want to get in the position
8 of approving their procedures and then turning around
9 and inspecting something that we ourselves have
10 approved.

11 A (WITNESS HIGGINS) We feel that NRR is the
12 organization within the NRC that in effect approves
13 documents submitted to them. For example, the FSAR and
14 other documents are in effect approved via the SER by
15 NRR, and then the regional office basically inspects to
16 those documents. For example, the QA manual would be an
17 implementing manual to the FSAR QA description, and,
18 therefore, we would review and inspect that against the
19 FSAR commitments and the underlying ANSI standards.

20 Q Would you view the QA manual as sort of in a
21 different class than the FSAR in terms of a licensing
22 document?

23 (Witnesses conferring.)

24 A (WITNESS HIGGINS) We don't believe the QA
25 manual is a licensing document.

1 Q And that would also be true for the
2 procedares, the QA procedures?

3 A (WITNESS GALLO) Yes, sir.

4 (Pause)

5 Q Gentlemen, would you turn to Mr. Hubbard's
6 prefiled testimony on page 69, and read to yourselves
7 the last sentence on that page?

8 (Pause)

9 A (WITNESS GALLO) Yes, sir, we have read it.

10 Q Do you agree with that statement?

11 A (WITNESS GALLO) The overall emphasis of the
12 paragraph seems to be that it should be described in --
13 those processes and controls should be described in
14 detail in the FSAR, and I would not expect to find that
15 in the FSAR, not in the QA program section.

16 Q Do the others on the panel agree?

17 A (WITNESS HIGGINS) I normally don't get
18 involved in that type of review, Judge Morris. I guess
19 I could just give you what I would expect to see in
20 terms of what I have seen in the past, and I guess I
21 wouldn't expect to see that level of detail in the
22 FSAR.

23 A (WITNESS NARROW) I wouldn't expect to see
24 that in the FSAR either, Judge Morris.

25 Q Where would you expect to see that?

1 (Witnesses conferring.)

2 A (WITNESS NARROW) Well, it would depend upon
3 which of the various items he is discussing, but certain
4 of it would be in some of the specifications. Some of
5 it might be in codes which would be referenced in the
6 FSAR or in the specification. I think I would look for
7 it in either one of those -- either in a code or in the
8 specification -- or, with regard to inspection, there
9 would be implementing procedures for the QA manual.

10 Q Do you agree with that, Mr. Gallo?

11 A (WITNESS GALLO) Yes, sir. I guess I would
12 look first in the QA manual and I would probably expect
13 some reference to the listing of activities that would
14 be special processes in the QA manual, but to find the
15 procedures that it appears that in discussing the detail
16 on page 69, that type of detail I would expect to find
17 in the lower tier document, a quality assurance, maybe
18 even a quality control-type inspection procedure.

19 And, again, that would tell you the quality
20 aspects of it. You might have to go to other detailed
21 procedures to find out, specifically on welding, of
22 course, how the welders are qualified and how their
23 records have to be maintained and how they requalify, as
24 well with the post-weld heat treatment, which I am
25 fairly familiar with. So I would expect to have to look

1 probably at several procedures to find everything on
2 post-weld heat treatment or welding before I felt that I
3 had a good handle on everything that the utility's big
4 picture QA program had said about special processes to
5 get that much detail as is discussed on page 69.

6 Q Have any of you reviewed the manual or the
7 procedures to see whether this kind of detail exists for
8 such special procedures?

9 A (WITNESS HIGGINS) Judge Morris, is that
10 question with respect to construction quality assurance
11 or operational quality assurance?

12 Q Construction.

13 A (WITNESS NARROW) Judge Morris, I have
14 reviewed certain of the procedures and depending upon
15 which area, the type of things which Mr. Gallo was
16 discussing earlier, formerly would have been reviewed by
17 the welding specialist, but someone in our organization
18 would have reviewed these procedures and also the
19 specifications with regard to the various items that are
20 described here and should have been described in detail
21 in the FSAR. But normally we would not look for that in
22 the FSAR.

23 Q Did you want to add something, Mr. Gallo?

24 A (WITNESS GALLO) No. I was just trying to
25 reread the section here and I was just noting that Mr.

1 Hubbard's testimony on page 68 and 69 was specifically
2 directed toward operations program. We were trying to
3 answer our question, I guess, more toward construction
4 activities.

5 Q Well, I was trying to ask in that vein also.

6 Gentlemen, does I&E do anything to determine
7 whether or not, specifically, LILCO complies with
8 General Design Criterion 1?

9 (Witnesses conferring.)

10 And I am thinking specifically of
11 non-safety-related structures, systems and components.

12 A (WITNESS GALLO) Judge Morris, I would say
13 that we would only cover those areas where we have
14 specifically mentioned before, where there has been NRC
15 interest in construction program. That would be
16 primarily in the fire protection area and, as I said
17 before, in the pre-op testing, the licensee does commit
18 in the FSAR to do preoperational tests of certain
19 systems, portions of which are non-safety-related
20 components, maybe large portions of them, such as the
21 feedwater system.

22 And I feel quite confident that there is a
23 pre-op test that would cover the feedwater system, but
24 if you look at the bulk of the piping and controls in
25 the feedwater system it is non-safety-related. Yet that

1 should be one of the tests that we would review the
2 test, possibly witness some of the tests, and most
3 likely review the test results.

4 Q Would it be fair to say that I&E's approach to
5 these matters is to look at specific systems or even
6 components rather than try to systematically look at
7 some kind of graded QA program that is less than
8 Appendix B for non-safety-related equipment?

9 A (WITNESS GALLO) Yes, sir. I would agree with
10 your statement.

11 Q And when I say I&E, I mean the total I&E
12 organization and not just Region I or the Shoreham
13 perspective.

14 A (WITNESS GALLO) Yes, sir.

15 Q Gentlemen, are you familiar with the Shoreham
16 plant configuration reports, which are Suffolk County
17 Exhibit 71?

18 A (WITNESS GALLO) I am familiar with that
19 program. I don't think I have seen the particular
20 exhibit. I don't think any of the members of the panel
21 have seen that particular exhibit.

22 JUDGE BRENNER: I can lend you my copy.

23 MR. LANPHER: Judge Morris, could you wait
24 maybe five minutes for this? I didn't bring my copy.

25 WITNESS GALLO: Yes, sir, Judge Morris. I

1 have received a few of these from Mr. Higgins. I am not
2 sure if it is the same one in Exhibit 71.

3 BY JUDGE MORRIS: (Resuming)

4 Q Well, I note that there are seven that were
5 listed here in this Exhibit and my first question was:
6 Is this the totality of configuration studies that are
7 going on, or are there others?

8 A (WITNESS HIGGINS) No. When we got the
9 commitment for the program, it was to include all
10 safety-related systems in the FSAR, plus some
11 non-safety-related systems also. So every
12 safety-related system is to be covered by the program.

13 Q So that would include the RHR system?

14 A (WITNESS HIGGINS) Yes.

15 Q Which is not listed here.

16 A (WITNESS HIGGINS) Yes. The total number of
17 systems to be reviewed is in the 30s. I don't remember
18 the exact numbers. There would be 30-some packages of
19 this nature.

20 Q Is it correct that the drywell spray system is
21 part of the RHR system?

22 A (WITNESS GALLO) Yes, sir, that is correct.

23 Q And is that part of it a safety-related
24 system?

25 A (WITNESS GALLO) The piping in that system is

1 safety-related, yes, sir.

2 Q Is that just fortuitous, or is it because that
3 function is important to safety? I am thinking in terms
4 of function, not just the QA that is done on the
5 system.

6 (Witnesses conferring.)

7 If you don't know --

8 A (WITNESS GALLO) I guess the question is -- I
9 have some generic information and Mr. Higgins has some
10 more plant-specific information. The RHR system is a
11 part of the emergency core cooling in one of its modes
12 of operation, but other modes of operation it is a
13 normal cooldown method. There is another portion of it
14 that is the containment spray mode and the information
15 that I had generically, I guess, is that the containment
16 spray system was -- the containment spray portion is not
17 part of the emergency core cooling system but since it
18 is connected, that piece of piping is connected to the
19 RHR system, it was made safety-related.

20 Q So it gets full QA treatment?

21 A (WITNESS GALLO) Yes, sir. Now Mr. Higgins
22 would like to add something specifically about Shoreham
23 and the analyses for Shoreham.

24 A (WITNESS HIGGINS) The containment spray
25 system at Shoreham, based upon information that I have

1 gotten from the CAT inspection and also from NRR, as
2 NRR's review of the CAT inspection item, is that
3 specifically drywell sprays are not needed or assumed to
4 function in any of the accidents for Shoreham.

5 So based on that information you could say
6 that it really is not needed and it doesn't need to be
7 safety-related. My understanding of the classification
8 system, of the RHR system, is that the entire system and
9 its various modes is safety-related and they have not
10 separated it out and made certain portions
11 non-safety-related.

12 I know that this is an area where between at
13 least this licensee and NRR there has been, over the
14 years, a considerable amount of technical discussion and
15 answers in the FSAR as to whether or not drywell sprays
16 and suppression pool sprays are, number one, needed,
17 number two, should be automatically actuated, et
18 cetera. There was a fair amount of discussions back and
19 forth in the FSAR and in letters as to whether or not
20 those particular functions were needed and how they
21 should be designed and configured.

22 Q Well, I guess that information must be in the
23 questions and answers because in my quick look at the
24 FSAR I couldn't find a description of the function of
25 the drywell spray system.

1 A (WITNESS HIGGINS) There is some discussion in
2 the questions and answers. There is also one figure in
3 Chapter 6 that shows for the steam bypass accident that
4 a steam bypass from drywell directly to suppression pool
5 without going through the downcomers post-LOCA, that the
6 drywell and suppression pool sprays together can reduce
7 the pressure transient and prevent the containment from
8 exceeding its design pressure.

9 And that figure was really part of the basis
10 for our concern when we wrote up this item in the CAT
11 inspection, namely that it appeared to us from looking
12 at the FSAR figure that those sprays were used in the
13 mitigation of the steam bypass accident after a LOCA.

14 NRR's review and my discussions with the NRR
15 reviewers after the resolution of this CAT item I was
16 told that their -- NRR's analysis did not take credit or
17 give credit to LILCO for the drywell sprays but, rather,
18 only the suppression pool sprays were needed and,
19 therefore, the drywell sprays, in their view, for that
20 particular accident, which is the only one I am aware is
21 directly referenced in the FSAR, was not needed, and it
22 is clear from the other references in the FSAR that it
23 is not needed for the standard LOCA and other
24 accidents.

25 Q I found a figure which shows the layout of the

1 two headers and I guess there is something like 104
2 nozzles, but I didn't find any design flow. You don't
3 remember a number for that?

4 A (WITNESS HIGGINS) There is no number in there
5 for design flow. If there had been, we would have
6 written up the deviation against that. As a matter of
7 fact, that was one of our difficulties in, I guess, just
8 to get into some of the mechanics of writing that report
9 and how we cite a deviation, we did have some difficulty
10 with that one because we couldn't come up with a design
11 flow.

12 And the only thing that we really had as a
13 basis for that was the nozzles there. In fact, after
14 the item was written up we tried to obtain a design flow
15 from LILCo in terms of evaluating that five percent
16 decrease, and the answer still that came out was that
17 certainly there was a system flow that it would give,
18 but in terms of what was needed for an accident, the
19 answer that came back is that we really don't need a
20 design flow because of the answers. That is not assumed
21 in any of the accidents.

22 I guess that is the final conclusion, the
23 final piece of information that NRR used to reach their
24 conclusion that blockage was not a safety concern.

25 Q Well, given that it might be a desirable

1 feature, I guess there was no basis for you to observe
2 anyone else's calculation or analysis to show the
3 difference in temperature or pressure as a function of
4 time, depending upon whether it was design flow or 95
5 percent of design flow.

6 A (WITNESS HIGGINS) That is what we wanted to
7 to in order to evaluate that five percent decrease, and,
8 in fact, we tried to do that before we sent it over to
9 NRR. But, as I said, the only information that we got
10 back was that there was no accident sequence when they
11 needed it, that they could take that design flow and
12 apply that to, and, therefore, we thought it would be a
13 fairly simple thing to do to see what the design flow
14 was and compare that five percent reduction.

15 But since we could not come up with any design
16 flow or particular accident and since we in the Region
17 felt that it was needed for that accident, that was why
18 we referred it over to NRR for their resolution.

19 Q What was the basis that you felt it was
20 needed?

21 A (WITNESS HIGGINS) The figure in Chapter 6
22 which shows how the containment sprays reduce the
23 pressure increase on a steam bypass accident.

24
25

1 Q Does the figure also show the pressure
2 increase without the spray?

3 A (WITNESS HIGGINS) No, I don't believe so.

4 Q Would the design pressure be exceeded without
5 the spray?

6 A (WITNESS HIGGINS) Well, NRR's determination
7 was that without drywell sprays it would not be, but
8 without suppression pool sprays it would.

9 Q So do you disagree with NRR on the need for
10 the drywell spray?

11 A (WITNESS HIGGINS) I have no reason to
12 disagree with them.

13 Q In your looking at the interference with the
14 distribution of the spray, did you take into account the
15 orientation of the nozzles?

16 A (WITNESS HIGGINS) Yes, Judge.

17 (Pause.)

18 BY JUDGE BRENNER: (Resuming)

19 Q Mr. Higgins, I guess I want to try to
20 understand your understanding of NRC's written response,
21 and maybe we should mark this.

22 JUDGE BRENNER: I alluded to that the other
23 day. Could we make this a Staff exhibit, Mr.
24 Bordenick?

25 MR. BORDENICK: Certainly.

1 (Discussion off the record.)

2 JUDGE BRENNER: We will make this Staff
3 Exhibit 10 for identification, and let's also bind it in
4 for convenience if somebody has a copy.

5 (The document referred to
6 was marked Staff Exhibit
7 No. 10 for identification
8 and bound into the record
9 at this point.)
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

INSERT #4
staff 10

DEC 16 1982

MEMORANDUM FOR: B. Bordenick, Staff Attorney
Office of the Executive Legal Director

FROM: R. Caruso, Project Manager
Licensing Branch No. 2
Division of Licensing

SUBJECT: RESOLUTION OF REGION I CAT TEAM ITEMS REGARDING HPCI STEAM
DRAIN LINE ISOLATION ARRANGEMENT, AND REDUCTION OF DRYWELL
SPRAYS

As a result of a Construction Assessment Team inspection of Shoreham, three items were identified as needing NRR review to achieve resolution. This memorandum provides the basis for resolution for two of these items: recording the HPCI steam drain line containment isolation arrangement and the reduction in drywell sprays. This evaluation was performed by members of the Containment Systems Branch (CSB) after they reviewed the pertinent information supplied by the applicant. The remaining item is the subject of a meeting scheduled to be held today.

The bases for the staff's resolution of these items are as follows:

HPCI Steam Drain Line Isolation Arrangement

The containment isolation arrangement for the HPCI steam drain line consists of two simple check valves in series outside the containment, which does not meet the explicit requirements of 10 CFR 50, Appendix A, Criterion 56. However, it is the position of the staff that the present isolation valve arrangement meets the "acceptable on some other defined basis" provision of GDC 56.

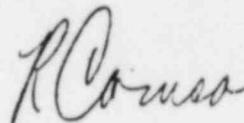
The basis for this position is as follows:

- (1) Function - When initiating the steam condensing mode of RHR, a flow path is needed to allow steam from the HPCI system to be directed to the RHR heat exchangers. A potential for water accumulation exists in the connecting piping between the normally closed valves in the system, which could possibly lead to water hammer damage to the RHR heat exchangers or the associated piping when these valves are opened. Check valves in the drain line for this piping provides the greatest assurance that this draining function will not be impaired.

- (2) Additional isolation barrier - In addition to the two check valves in series, the HPCI steam drain line is part of a system that is closed outside containment, which acts as a containment barrier.

Reduction of Drywell Sprays

The inspection team noted that some (approximately 5 percent) drywell spray nozzles were physically blocked by installed ventilation duct work. However, the drywell sprays in the Shoreham design were not considered in the staff's review of mitigation systems for LOCAs or any other design events. Therefore, the 5 percent reduction presents no safety concerns for the Shoreham plant.



R. Caruso, Project Manager
Licensing Branch No. 2
Division of Licensing

1 MR. BORDENICK: Judge Brenner, I only have one
2 copy on my desk, or at least one copy that I can find.
3 I will make the requisite number of additional copies
4 and give them to the reporter.

5 BY JUDGE BRENNER: (Resuming)

6 Q Mr. Higgins, when did I&E refer this to NRR
7 for its technical evaluation?

8 A (WITNESS HIGGINS) October 14th, 1982,
9 although it had been discussed with them on the phone
10 well previous to that.

11 Q So after two months we got the answer back
12 that, since they didn't consider it in the first
13 instance, that any reduction in the drywell spray
14 nozzles presented no safety concerns, correct?

15 A (WITNESS HIGGINS) Yes.

16 Q I'm sure there was a good reason for taking
17 that long for that answer.

18 Moving beyond that, is it this paragraph that
19 provides information for you to understand that there is
20 no -- to understand the basis as to why there is no need
21 for the drywell spray nozzles in the accident analyses,
22 I guess particularly the accident that you thought might
23 be pertinent based preliminary on your review of that
24 figure, that is the steam bypass accident? Or has NRR
25 considered the analysis of that somewhere else? I

1 don't know, what is your view of the situation.

2 (Panel of witnesses conferring.)

3 A (WITNESS HIGGINS) Judge Brenner, if you take
4 the words here in this memo at face value, it says that
5 it is not considered in the Staff review of the
6 mitigation systems for either LOCA's or other design
7 events. And if you take them at face value you can make
8 a conclusion that they are not needed and therefore the
9 reduction is really of no safety concern.

10 When I did get this evaluation, I had the
11 question in my mind as I spoke with Judge Morris that I
12 didn't quite understand that, in light of my knowledge
13 of that one figure in the FSAR for the steam bypass
14 accident. And therefore, when I did see this I called
15 over and spoke with the reviewer, actually with his
16 supervisor in this case, and asked him to explain to me
17 in light of that figure how they can justify this
18 statement, and that is when he gave me the information
19 about their assumptions and why it wasn't needed, and
20 the discussion of the suppression pool sprays were the
21 ones that they counted on in their analysis.

22 Q And where is that analysis by the Staff or
23 LILCO?

24 A (WITNESS HIGGINS) I don't know. You would
25 have to ask NRR.

1 Q Maybe this is an unfair question, but -- and
2 if you think -- I will give you the rare option to
3 decline to answer. Is it as simple as stated in that
4 paragraph, that that took them two months, or is there
5 more to it than this and we're not getting the full
6 picture?

7 A (WITNESS HIGGINS) I don't know the answer to
8 that, Judge.

9 Q Taking this paragraph at face value as being
10 the correct conclusion, am I correct then that the
11 function of the drywell spray nozzles would not be a
12 safety-related function as that term is used by the
13 Staff, even though the system might be classified as
14 safety-related for other reasons, such as to avoid
15 degradation when RHR is used in a safety-related mode?

16 A (WITNESS HIGGINS) That is correct.

17 Q Would the drywell spray nozzle function
18 nevertheless be in the larger category of important to
19 safety?

20 A (WITNESS HIGGINS) I still don't have my list,
21 Judge.

22 Q And I guess you don't want to try to apply Mr.
23 Denton's?

24 A (WITNESS HIGGINS) If you would like my
25 personal opinion, I can give you that, Judge.

1 Q Well, your professional expert opinion.

2 A (WITNESS HIGGINS) Yes, I would consider it in
3 that category. But again, Judge, as we have testified,
4 I&E Region I, we have not applied those types of
5 categorizations -- safety-related, important to safety,
6 and so forth, in light of Mr. Denton's memo. I can give
7 you my evaluation as to what should fit into those, but
8 we don't use those categorizations in our program.

9 Q One reason I asked some of my questions is to
10 try to see in advance whether any further information on
11 LILCO's processes involved in this matter would provide
12 any insights to us in terms of, among other issues, the
13 quality assurance/quality control issue before us. And
14 the other reason, very candidly, is to give me an
15 opportunity to comment on the lack of appreciation for
16 the timing before us, if this was all there was to the
17 matter.

18 A (WITNESS GALLO) Judge Brenner, I was just
19 going to add that administratively we are waiting for, I
20 believe, our letter from the regional office, from
21 Sterostecki to Eisenhut, and we would wait for a
22 response back from either Mr. Eisenhut or Mr. Novak, in
23 this case, back to answer our letter directly.

24 It may be a short letter with this as an
25 enclosure.

1 (Board conferring.)

2 BY JUDGE MORRIS:

3 Q Gentlemen, I think you have told us that
4 Region IV has done inspections of both Stone & Webster
5 and General Electric. Do you know if Region IV
6 conducted any inspections of Courter?

7 A (WITNESS NARROW) Not to my knowledge, Judge
8 Morris.

9 Q Has Region I?

10 A (WITNESS NARROW) Region I has conducted
11 inspections of Courter on site, yes.

12 Q On site?

13 A (WITNESS NARROW) Yes.

14 Q Only?

15 A (WITNESS NARROW) On site only.

16 A (WITNESS HIGGINS) But to our knowledge there
17 would not be any pertinent activities of Courter's to
18 review offsite.

19 Q Except for their management, right?

20 A (WITNESS HIGGINS) Courter does have on-site
21 management that we have interfaced with on site, but
22 yes, there is higher management off-site.

23 Q In the light of comments made earlier,
24 gentlemen, I think I conclude that you believe that it
25 is essentially impossible to find 100 percent compliance

1 with Appendix B requirements at a construction site
2 throughout the construction period. Was that a correct
3 deduction?

4 A (WITNESS GALLO) Yes, sir, I would agree with
5 that statement.

6 Q So that NRC doesn't expect 100 percent
7 compliance?

8 A (WITNESS GALLO) I guess we may expect it, but
9 we don't always find it, and there are no problems that
10 we know are going to come up. I guess "expect" is the
11 wrong word. We would encourage the Licensee to strive
12 toward that goal, but perhaps the expectation if it is
13 in many instances extremely difficult to achieve and we
14 do expect to find nonconformances and noncompliances.

15 Q And in fact, Appendix B specifically includes
16 criteria on corrective action; is that correct?

17 A (WITNESS GALLO) Yes, sir, that is correct.
18 There is criterion 16, corrective action, and another
19 one on nonconformance control.

20 Q Which in effect acknowledges the fact that
21 there will be deviations?

22 A (WITNESS GALLO) Yes, sir.

23 (Pause.)

24 Q There has been considerable discussion about
25 sampling in performing I&E functions on one basis or

1 another, but I think that the following question maybe
2 hasn't been addressed explicitly: How does I&E assure
3 itself that from the sample it does take, on whatever
4 basis, that it is representative of the total program?

5 (Panel of witnesses conferring.)

6 A (WITNESS HIGGINS) Judge Morris, we don't feel
7 that the NRC's program is responsible for being
8 cognizant of every discrepancy, deficiency, what have
9 you, even through our sampling program, even in a
10 representative manner. NRC has always maintained that
11 it is the Licensee's responsibility to do that and to
12 have in his program the cognizance of all of those types
13 of things.

14 We feel that any issue that is significant, as
15 we have said before, it is the Licensee's responsibility
16 to report to the NRC through 50.55(e), and we do in fact
17 review and follow up on every 50.55(e) type of item that
18 is reported to the NRC, because those are the ones that
19 we feel are significant.

20 The other ones we feel are at a generally
21 lower level than that, and therefore we review the
22 Licensee's various programs to control these processes,
23 items, nonconformances, what have you, and thereby gain
24 confidence that his program is adequately addressing
25 those.

1 We do look at each of the major activities
2 from a programmatic basis through our inspection
3 program. But we don't try to extrapolate from our
4 sampling program to say that we have reviewed a
5 representative portion of every activity on site.

6 Q But do you feel that the program is adequate
7 to reach a conclusion as to whether or not the Applicant
8 is conducting his program in accordance with Appendix
9 B? The specific question is, do you have enough staff,
10 enough money? Is the program proper in your view?

11 A (WITNESS HIGGINS) Overall, yes, we do,
12 Judge. Of course, we always have particular areas where
13 we feel we would like to do more, obviously. But we
14 feel that what we have has been adequate to reach the
15 conclusions that we have.

16 Q In your review of construction activities,
17 have you separated out in your thinking, at least, the
18 difference between design control, by which I mean
19 control of the design, and the implementation of the
20 design?

21 (Panel of witnesses conferring.)

22 A (WITNESS HIGGINS) Yes, Judge, we believe we
23 have.

24 Q Is that separated out in the thinking of the
25 inspection manual or the modules or something else that

1 deal with these two things separately?

2 (Panel of witnesses conferring.)

3 A (WITNESS HIGGINS) Yes, Judge, we do have
4 separate inspection procedures for those two areas. It
5 is true that we have probably more, significantly more
6 inspection procedures in the design implementation area
7 than in the design control area, and I guess that was
8 the points that were being made by Mr. Denton, DeYoung
9 and Vollmer in the quotes that we saw in Mr. Hubbard's
10 testimony to the Commission.

11 Q Is this emphasis in your mind probably a
12 result of the historic development of the program?

13 A (WITNESS GALLO) Yes, sir. I think in my
14 recollection the program had once upon a time been
15 inspection of the particular facility and all aspects of
16 it by the regional office. But it had evolved when
17 Region IV LCVIP, Licensee Contractor Vendor Inspection
18 Program, in Region IV developed into a vendor,
19 architect-engineer, NSSF supplier inspector group. And
20 it was my understanding that that was felt to be more
21 efficient from a programmatic review point, that the
22 Region IV folks would inspect the architect-engineers
23 and NSSF in the region, with primarily -- the region is
24 primarily responsible for inspection activities of the
25 construction site, plus the utility themselves.

1 However, our manual does allow us to cross
2 over if we feel the need to go with Region IV to one of
3 their inspections at a particular vendor facility or if
4 they -- if we ask them. It is fairly rare, but they
5 have come to sites to look at site-specific problems, to
6 follow them back into the architect-engineer's office,
7 for instance.

8 Q When did that program start?

9 (Panel of witnesses conferring.)

10 A (WITNESS NARROW) I believe it was some time
11 in 1974, Judge Morris. I couldn't be absolutely sure of
12 that date.

13 A (WITNESS GALLO) It was prior to November '75,
14 because that is when I started with the NRC and it was
15 prior to that time.

16 A (WITNESS NARROW) Well, it was after I had
17 joined them, and therefore you have got it bracketed, at
18 least, because I joined them in July of '73.

19 Q So it really got under way after Shoreham
20 construction had started, is that correct?

21 A (WITNESS NARROW) That is correct. In fact, I
22 believe one of the early inspections on some of the
23 vendor or the NSSS suppliers' equipment was performed
24 out of the Region I office.

25 (Pause.)

1 Q Coming back to the implementation of design,
2 there are design drawings, and as we have heard there
3 hasn't been a Revision 0 in quite a long time. Many
4 revisions and also E&DCR's which are attached to
5 drawings but not actually incorporated does that
6 happen?

7 A (WITNESS NARROW) They are attached to
8 drawings until they are incorporated. In other words,
9 at some time the outstanding E&DCR's will be
10 incorporated into a revision of the drawing and at that
11 time those E&DCR's will no longer be attached, but the
12 E&DCR's written following that time would then be
13 attached.

14 Q So if the system works properly --

15 A (WITNESS HIGGINS) I would like to add
16 something to that. Attached or referenced on the
17 control drawings. They do have a provision in their
18 program to just reference those E&DCR's on the drawings
19 and file them separately.

20 Q So that if the system works properly, before
21 an item is constructed the drawing that is used to
22 construct it would contain the latest E&DCR or reference
23 it; is that correct?

24 A (WITNESS NARROW) That is correct.

25 Q So that in time the latest E&DCR may be

1 attached to the drawing which controls construction, but
2 the FSAR might not be updated for six months or more
3 after that?

4 A (WITNESS HIGGINS) That is certainly correct.

5 Q In fact, I guess 50.71 allows up to a year, at
6 least in some cases?

7 A (WITNESS GALLO) My understanding of that is
8 that for plants with an operating license they have got
9 two years from the date of their OL for their first
10 update, and then annually thereafter. Plants that
11 already had an OL when the rule was issued were supposed
12 to submit their first update, it says, two years after
13 July 20-something, 1980, which was July 22nd, I guess,
14 1982, and then annually thereafter submit updates.

15 And again, it does take effect -- If the plant
16 does not have an operating license, that rule as I
17 understand it takes effect on the date of operating
18 license.

19 Q Well, in any event, the time lapse could be
20 six months from one update to another, or even longer;
21 is that correct?

22 A (WITNESS HIGGINS) That is true for Shoreham,
23 yes, Judge.

24 (Pause.)

25 Q I guess, to round out that picture, even

1 though the updates are not made to the FSAR there is in
2 a sense continuing dialogue between the Applicant and
3 the Staff, both in terms of written questions and
4 answers and meetings at which information is exchanged
5 about plant changes?

6 A (WITNESS HIGGINS) What you said is true, but
7 also there are updates during the construction permit
8 time. I guess all we said was that 50.71 does not
9 require it, but I guess NRR requests it and LILCO has
10 been doing it since the FSAR was filed. There have been
11 a considerable number of FSAR amendments over the
12 years.

13 (Pause.)

14 Q Gentlemen, do you see a difference between
15 what is called a flow diagram and a design drawing?

16 (Panel of witnesses conferring.)

17 A (WITNESS HIGGINS) Judge, would you ask that
18 question again, please?

19 Q Is there a difference between what is labeled
20 a flow diagram and what is a construction drawing?

21 A (WITNESS HIGGINS) They have at Shoreham flow
22 diagrams and then they have isometric or detailed
23 drawings, which I guess you are referring to there. The
24 flow diagrams depict the arrangement of the system from
25 a logic standpoint, in that it shows all of the

1 components on the system, but it doesn't show them in
2 the actual physical layout that they have in the plant.
3 When you get down to the isometric drawings, that goes
4 into considerably more detail in that those isometric
5 drawings would show you the elevation, the angles, this
6 type of thing, and how it is actually physically laid
7 out in the plant, and those are the ones that he used to
8 actually install the piping. But they should agree.

9 A (WITNESS NARROW) Judge Morris, I think
10 basically the flow diagram provides one of the bases for
11 preparation of the construction drawings, and it is used
12 afterwards as well. But I believe that is the basic
13 purpose for preparing the flow diagram.

14 Q If there were a difference between a flow
15 diagram and a construction drawing, which would be
16 controlling in the actual construction?

17 A (WITNESS HIGGINS) You would have to resolve
18 the discrepancy. It would have to go to engineering to
19 decide which is the correct, the correct arrangement,
20 and then whichever one was determined to be correct
21 would be the controlling one, and that would, in my
22 understanding of it, be the way it is done. It would be
23 done through an E&DCR. The E&DCR would say, there is a
24 discrepancy between the two, which is correct; and then
25 engineering would look at the design and decide which is

1 correct, and that would be controlling.

2 (Pause.)

3 Q Gentlemen, when we were talking about the
4 configuration reports yesterday, I believe it was, you
5 indicated that there was a strong request of LILCO to
6 carry out those activities. Would it be fair to deduce
7 from that request that what LILCO had been doing was not
8 adequate in your mind?

9 A (WITNESS HIGGINS) Yes. We felt that what
10 they were not doing was adequate to ensure that the FSAR
11 was fully accurate.

12 JUDGE BRENNER: Try that one again.

13 WITNESS HIGGINS: Let me say that again. We
14 felt that the way the FSAR existed at that time was not
15 fully accurate and that therefore the actions that were
16 being taken were not fully adequate, and that is why we
17 made the request, yes.

18 BY JUDGE MORRIS: (Resuming)

19 Q Well, wasn't the major purpose of the
20 configuration review reports to straighten out what you
21 saw as inaccuracies in the FSAR?

22 A (WITNESS HIGGINS) Yes.

23 Q Not to confirm the implementation of the
24 design of the plant?

25 A (WITNESS HIGGINS) I think there is some

1 overlap between what you said and the way I said it.

2 (Pause.)

3 Q Did you want to add anything?

4 A (WITNESS HIGGINS) If you don't understand I
5 would be glad to add to it.

6 Q Well, let me see if I can oversimplify what I
7 thought we had established: A, that the FSAR was
8 primarily a licensing document and was not the primary
9 design control document.

10 A (WITNESS HIGGINS) That is correct.

11 Q And B, that the design control documents were
12 the drawings and E&DCR's.

13 A (WITNESS HIGGINS) Yes.

14 Q And now you tell me that the primary purpose
15 -- well, I will ask if the primary purpose again of the
16 configuration review reports was to straighten out
17 inadequacies in the FSAR, as opposed to improving or
18 correcting possible deficiencies in the implementation
19 of design.

20 A (WITNESS HIGGINS) I guess it was certainly --
21 I think as we stated before, we felt that the FSAR had
22 two main uses. One was by our licensing people, to
23 approve the design of the plant; and the second was for
24 future use by the NRC and perhaps also by the Licensee.
25 And we wanted to be accurate for both of those reasons.

1 We were concerned, I guess, initially that if
2 there were a lot of discrepancies and the NRC had
3 approved the design, say, of a particular system that
4 wasn't completely accurate, that perhaps that design
5 might not be adequate as implemented. But -- and that
6 was the basis for our concern. We wanted to ensure that
7 it was accurate, so that the conclusions in the SER
8 would stand, because we didn't want to have the
9 situation that what had been reviewed was the FSAR and
10 not the plant, to really simplify it.

11 And I guess what we are seeing from the
12 Shoreham plant configuration reviews is that the level
13 of detail where, although there are a lot of detailed
14 discrepancies, that primarily these do not affect the
15 design basis and did not affect NRR's conclusions. So I
16 guess as it turns out, it looks like it has been
17 primarily an accuracy type of thing.

18 Q Have you gentlemen -- well, let me ask first
19 whether INPO has made a visit to the Shoreham site?

20 A (WITNESS HIGGINS) Yes, Judge.

21 Q And has their report been issued?

22 A (WITNESS HIGGINS) Yes.

23 Q Have you had a chance to review it?

24 A (WITNESS HIGGINS) Yes.

25 Q Do you have any comments?

1 A (WITNESS HIGGINS) We got a copy of the INPO
2 report in August. The report was issued in January of
3 this year. We did review INPO's findings and we found
4 them interesting. We intend to follow up to see what
5 the corrective actions will be.

6 I don't recall at the moment all of the
7 findings, Judge.

8 Q In the general sense, did you learn something
9 new as a result of their inspection or did you find
10 yourself in disagreement in any significance sense?

11 A (WITNESS HIGGINS) Not in any significant
12 sense, no, Judge.

13 Judge, one comment is that INPO was primarily
14 forward-looking. It was looking forward to their
15 operations program, and that was done really before we
16 did that. A lot of that was done during our team
17 inspection recently.

18 Q So they weren't really reviewing construction
19 and construction QA?

20 A (WITNESS HIGGINS) That is correct.

21 (Pause.)

22 Q I should point out that the Board has not seen
23 that report and we don't know whether other parties,
24 particularly the County, have seen it or not.

25 JUDGE BRENNER: Mr. Lanpher?

1 MR. LANPHER: I have seen it, yes, sir.

2 JUDGE BRENNER: I guess, with all the paper we
3 have been deluged with, some of which is less important
4 than others, nobody saw fit to provide that year-old
5 report to us.

6 JUDGE MORRIS: Do you want to testify on this,
7 Mr. Lanpher?

8 (Laughter.)

9 MR. LANPHER: I was going to say, we got it
10 some time in October or November, some time after the
11 Staff received it.

12 WITNESS HIGGINS: I guess as part of the
13 discovery for this we were asked for it, and we provided
14 it, I believe to the County, through Mr. Bordenick.

15 JUDGE BRENNER: Okay.

16 MR. LANPHER: Actually, the whole paper trail
17 is that it is referenced in I&E Report 82-25, which is
18 the August meeting.

19 JUDGE BRENNER: Yes, I know.

20 MR. ELLIS: We too gave a copy of it to the
21 County.

22 BY JUDGE MORRIS: (Resuming)

23 Q Mr. Narrow, coming back to the storage of the
24 pressure vessel with the inert atmosphere.

25 A (WITNESS NARROW) Yes, sir.

1 Q I seem to recall that the problem was
2 maintaining the pressure in the vessel; is that
3 correct?

4 A (WITNESS NARROW) Well, there the
5 specification was written that they were to maintain a
6 certain pressure with a certain maximum flow, and they
7 found that they could not maintain that pressure unless
8 they increased the flow above the maximum, which they
9 did. And the inspector at that time apparently cited
10 them for a violation of that storage specification.

11 Q But the real purpose for this was to have an
12 inert atmosphere inside to minimize the amount of oxygen
13 and moisture; is that correct?

14 A (WITNESS NARROW) That is correct.

15 Q Was that objective achieved?

16 A (WITNESS NARROW) It was achieved. It was
17 achieved at the expense of using more inert gas than
18 they would otherwise have been required to use.

19 Q Mr. Higgins, I believe you mentioned yesterday
20 I&E had some 250 ballpark number items on your
21 "punchlist"; is that correct?

22 A (WITNESS HIGGINS) That is a ballpark number,
23 perhaps a little high, Judge, but on that order. And
24 those consist of -- I would categorize them as the
25 outstanding Region I concerns associated with Long

1 Island Lighting Company, and they consist of violations
2 that we have written that have not been closed out,
3 unresolved items that we have written, bulletins and
4 circulars that the NRC has issued which have in our view
5 not yet been adequately addressed by LILCO and reviewed
6 by us, and the construction deficiency reports per
7 50.55(e) that LILCO has reported to us and has not
8 completed the final corrective actions on and been
9 reviewed by us.

10 Q Do you meet periodically with LILCO to discuss
11 the progress on those items?

12 A (WITNESS HIGGINS) Since our meeting in August
13 in Region I with LILCO management, when I am on the site
14 I have been meeting weekly with them to discuss those
15 and have been in more frequent contact with some of the
16 individuals assigned responsibility for tracking these
17 items and providing closure.

18 Q In your opinion is there a satisfactory
19 program to close out these items in a reasonable time
20 frame?

21 A (WITNESS HIGGINS) That is a very difficult
22 question, because it depends upon what you mean by a
23 reasonable time frame and I am not even sure in my mind
24 what I would consider a reasonable time frame. It
25 really depends on when you think or when anyone would

1 think that they would need to be resolved, which is
2 obviously by fuel load for the great majority of them,
3 and that date is open to debate.

4 Q Well, I would expect that some of these items
5 may relate to systems that are important to safety or
6 procedures that are important during acceptance tests,
7 preop tests, and that you would expect some kind of
8 prioritization of those items, as opposed to those that
9 you might characterize as almost trivial.

10 A (WITNESS HIGGINS) That is correct, Judge.
11 And in general the more important ones have been
12 receiving the priority attention. There have been a
13 number that the resolution has lagged a lot longer than
14 I would like to see it lag.

15 Q And you said that you met with LILCO
16 management -- I assume that meant at the site -- to
17 discuss these items?

18 A (WITNESS HIGGINS) Could you say that again,
19 please?

20 Q With whom in LILCO do you meet to discuss
21 these items at the management level?

22 A (WITNESS HIGGINS) Do you want names?

23 Q Or titles, one or the other.

24 A (WITNESS HIGGINS) I guess the weekly meetings
25 that we have been having have included a representative

1 from the construction and project management group in
2 the form of, I believe it is, an assistant
3 superintendent; in the startup group it includes
4 sometimes either the advisory engineer for Stone &
5 Webster, who works directly for Mr. Youngling, or his
6 representative. And on the plant staff it is a
7 technical engineer, and there is usually a quality
8 assurance representative at the meeting in the form of a
9 quality assurance engineer, and sometimes one or two
10 other people.

11 (Board conferring.)

12 A (WITNESS HIGGINS) One thing that maybe I
13 didn't make clear is that there are certain items that,
14 as you indicated, pertain to a particular preoperational
15 test, for example, and when an item relates to the
16 adequacy of that test we do require that it be resolved
17 prior to the performance of that test, or in some cases
18 if that is not done we indicate to LILCO that they are
19 running the test perhaps at their own risk, that if the
20 item is not satisfactorily resolved then perhaps the
21 test may have to be rerun.

22 In fact, there have been a couple of instances
23 as a result of problems that we have identified where
24 preoperational tests have been redone.

25

1 Q Do you feel it might be beneficial to
2 communicate your concerns at a higher level of
3 management from time to time?

4 A (WITNESS HIGGINS) At the meeting in Region I
5 in August, we had the president of the company there and
6 we communicated that to him, and it was after that that
7 things did improve a bit.

8 Q That was some four months ago.

9 A (WITNESS HIGGINS) Yes, Judge. And then again,
10 when we just had a meeting in November -- I believe it
11 was November 22nd -- at which Mr. Museler and Mr.
12 Youngling and Mr. Pollock were attending, we brought up
13 the concern again.

14 JUDGE MORRIS: Thank you, gentlemen, that's
15 all I have for now.

16 (Board conferring.)

17 BY JUDGE MORRIS (Resuming):

18 Q Mr. Higgins, Judge Brenner recalls that you
19 seemed to indicate that you have done some walkdowns at
20 the Shoreham plant. I didn't recall that specifically
21 myself, but in terms of a walkdown, for example, that
22 Torrey Pines has done, have you done such walkdowns?

23 A (WITNESS HIGGINS) Yes, Judge.

24 Q What systems have you done? Or parts of
25 systems?

1 A (WITNESS HIGGINS) To the best of my
2 recollection, I have done control room air conditioning
3 -- let me take a moment and try to write these down.

4 Q I don't need a complete list; just some
5 examples.

6 (Pause.)

7 A (WITNESS HIGGINS) I have five here, but I have
8 done more. My walkdowns here generally consisted of not
9 as detailed a walkdown as we did in the CAT inspection
10 but similar. The first one would be the RHR system
11 which I participated in in the CAT inspection. Also,
12 the control room air conditioning system, the core spray
13 system, high pressure coolant injection system and the
14 loose parts monitoring system.

15 Q Did you reach any specific conclusions as a
16 result of those walkdowns?

17 A (WITNESS HIGGINS) When I did those walkdowns
18 or those reviews, they were always documented in the
19 inspection reports. Usually in conjunction with the
20 walkdown there were three or four or five unresolved
21 items identified in the inspection report on specific
22 findings that I had.

23 In general, I found that the system was
24 constructed in accordance with the design, in accordance
25 with the detailed design documents. I did also in

1 general find the detail in the FSAR was not completely
2 met, and it was really as a result of these walkdowns
3 that we generated our concern about FSAR conformance and
4 resulted in this Shoreham plant configuration review
5 program.

6 Q In the walkdowns, were you able to look for
7 potential systems interactions?

8 A (WITNESS HIGGINS) Judge Morris, that was one
9 thing that I did have in mind when I did the walkdowns.
10 In fact, I guess if I haven't admitted it before, I was
11 the inspector that identified the violation on the core
12 spray or on the drywell spray system, so I did, in fact,
13 look, for that type of thing. Yes, Judge.

14 JUDGE MORRIS: Thank you.

15 JUDGE BRENNER: You may have also been on the
16 loose parts monitoring system electrical line, if I
17 remember that item, or maybe I'm putting two items
18 together.

19 WITNESS HIGGINS: That is correct, Judge.

20 JUDGE BRENNER: Or maybe the concern you
21 raised was whether somebody was confusing two items
22 together. We are not going to make it today,
23 obviously. But maybe we can finish the Board questions.
24 It would just be a few more minutes I think. Let's go
25 off the record for a minute.

1 (Discussion off the record.)

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

3 BY JUDGE CARPENTER:

4 Q Mr. Higgins, Judge Morris has asked you about
5 the punch list of things, a majority of which should be
6 completed before fuel load. In the course of this
7 hearing there have been a number of resolutions of
8 contentions which have involved commitments by LILCO to
9 do certain things, through those agreements which have
10 been reported back to the county, which is mysterious to
11 me to a certain extent. But I want to get I&E's views
12 about those commitments and your attitudes as to whether
13 they come under your purview.

14 A (WITNESS HIGGINS) That's a very good question,
15 Judge. I have had a lot of discussion with the regional
16 office and with my supervision and with our legal
17 department, Mr. Bordenick and Mr. Repka, and with the
18 NRR personnel as to exactly what our responsibilities
19 and interfaces should be in that area and haven't gotten
20 an answer to that yet.

21 JUDGE BRENNER: Judge Carpenter has tried to
22 help from time to time with comments on the record along
23 the way in connection with some of these settlement
24 agreements.

25 WITNESS HIGGINS: I guess part of our problem

1 is that we have a program in the region and in I&E that
2 we are required to implement and inspect. We find at
3 times that we are quite strapped with our resources to
4 implement that program in terms of what we have to
5 perform and to review. And I guess we found that in
6 general, we have not been able to keep up with the flow
7 of paperwork. And in addition, coming out of the
8 hearings, we're including transcript settlements and
9 this type of thing, although we have tried.

10 And I guess in general, where the settlements
11 are reflected in tech specs or FSAR changes, this type
12 of thing, it certainly gets incorporated right into our
13 inspection program. But where it is something that is
14 sitting outside of that structure, it makes it a lot
15 more difficult, and those are the types of things that
16 we have been trying to get some handle on in terms of
17 what our responsibilities in that area are, and have
18 really not finalized that.

19 BY JUDGE CARPENTER (Resuming):

20 Q Do you have any notion for when it might get
21 resolved, before we close this record or not?

22 A (WITNESS HIGGINS) Can you help me?

23 MR. BORDENICK: Judge Carpenter, I'm certainly
24 not testifying and I don't know whether the other
25 parties will object to my saying something at this

1 point, but there are several ideas that are being
2 considered and it's going to have to be resolved prior
3 to licensing.

4 One, as Mr. Higgins has pointed out, anything
5 that gets picked up into the technical specifications or
6 into the FSAR or anything that would get picked up in
7 the normal I&E program, that is no problem. And just to
8 allude to a matter which this Board gave up jurisdiction
9 on to another board on security, as part of that
10 settlement agreement one of the concerns that the staff
11 had was that we didn't want to have an approved security
12 plan on the one hand and then a settlement agreement on
13 the other hand and have the inspector come to the site
14 and just be totally confused as to what he was going to
15 inspect against.

16 So as part of the agreement, it is provided
17 that the applicant has to re-submit, although staff has
18 -- I think this is accurate -- previously approved a
19 security agreement, the applicant is going to have to
20 re-submit it to pick up any changes that have come about
21 as a result of the settlement agreements, so in that
22 area there shouldn't be a problem. That is the bottom
23 line on that.

24 On the other areas, one idea that I personally
25 had is that perhaps the staff, maybe not in the findings

1 that are coming up on January 31 but in the final set of
2 findings, may list as license conditions all of these
3 various items that were in as an appendix to the
4 license. And that is the only way, in my mind, that the
5 region is going to be able to inspect and enforce it.
6 But that is by no means a final answer.

7 The short answer to your question is it is
8 still under consideration and it a very stick area. We
9 have tried to encourage in any way, shape or form open
10 to us the applicant and the county in reaching
11 agreements on various contentions, but just how some of
12 these things are going to get forced, if and when the
13 plant is licensed, is a matter, as Mr. Higgins has
14 pointed out, which is a matter of much discussion, and
15 unfortunately, we don't have the final answers for you
16 today.

17 JUDGE BRENNER: In that connection, let me
18 mention something to you that you may have thought of
19 already or know about it. But just in case you don't,
20 there is a decision in the Three Mile Island Restart
21 proceeding by the Licensing Board that discusses some of
22 the stick areas, if you will, in terms of commitments on
23 the record, what was relied upon, what is enforceable,
24 and it was not an easy task to sort out. I don't know
25 if that decision ever sorted it out. It raises a lot of

1 questions and attempts to come to grips with some of the
2 answers to the extent that the Board was able to, given
3 the way the matters were left before it.

4 That is not the state of affairs I would like
5 to see left before us, and endorsing initiative on the
6 part of the staff and the cognizant parties in coming up
7 with something more definitive than what the Three Mile
8 Island Restart board had to go through in that aspect of
9 its decision.

10 MR. BORDENICK: Judge Brenner, I was aware of
11 the Three Mile Island decision. I don't think, as you
12 have alluded to, that the situation is as complicated in
13 this proceeding. And in line with what you have just
14 said, if either the applicant or the county has any
15 suggestions on this problem, we would be more than
16 willing to listen to it.

17 JUDGE BRENNER: And I guess we can note our
18 agreement that the next round of findings would be -
19 beyond the first round -- would be timely enough to pick
20 it up in that.

21 BY JUDGE CARPENTER (Resuming):

22 Q One last question. I'm trying to step back
23 and not, in a sense, bean counting, but can the panel
24 tell me in round numbers the total number of
25 non-conformance reports associated with Shoreham

1 construction? And I'm looking for is it 100, 500, 1000,
2 5000, 10,000? A magnitude.

3 A (WITNESS HIGGINS) Do you mean issued by the
4 licensee?

5 Q Yes.

6 A (WITNESS HIGGINS) No, we can't.

7 Q And you don't take any cognizance of the
8 numbers of those?

9 A (WITNESS HIGGINS) Well, to a certain extent we
10 do. Sometimes there are a large variety of different
11 types of non-conformances onsite because there are a
12 variety of different QC organizations and each one has
13 its own type of non-conformance. And without getting
14 into it, I think the only way that you could do that,
15 you would have to go to each organization and see which
16 ones, because they are really not pulled together.

17 Q I asked you whether you had walked in that
18 swamp and you told me no. Thank you very much.

19 JUDGE BRENNER: I have one miscellaneous
20 matter that I believe is quick in terms of a question,
21 and that will complete the Board's questions at this
22 time.

23 BY JUDGE BRENNER:

24 Q I guess it was you, Mr. Higgins, who cited the
25 area of fire protection as one area where Appendix B was

1 applied, although it was a non-safety related area, and
2 in fact, LILCO witnesses in the past have mentioned that
3 one, also. Is that really a non-safety related area? I
4 guess I don't fully understand why that is non-safety
5 related, yet Appendix B is applied.

6 A (WITNESS HIGGINS) NRR has always had the
7 position -- and the regions have gone along with it --
8 that fire protection systems do not fit under the
9 defined systems that fit Appendix B as safety-related
10 systems. And therefore, NRR has considered that fire
11 protection is an important system and needs some type of
12 quality assurance and has required various licensees,
13 operating licensees and construction plants to apply
14 some measure of quality assurance to that.

15 That was initially not the case, but I don't
16 know the exact timing but I know it was after the Browns
17 Ferry fire that it came out that there needed to be
18 quality assurance applied to those systems.

19 Q Well, I guess I could propound the theory,
20 which I won't, as to why it might be safety-related
21 under the definitions of the Denton memorandum.

22 Putting that aside, would it be fair to say
23 that it has been recognized as a category higher than
24 just the normal important to safety category?

25 MR. ELLIS: Judge Brenner, I'm reluctant to do

1 this but you said "the normal important to safety
2 category."

3 JUDGE BRENNER: As defined in the Denton
4 memorandum.

5 MR. ELLIS: Well, I don't think there is such
6 a category where there is a listing.

7 JUDGE BRENNER: I didn't mean listing.

8 WITNESS HIGGINS: I guess all we can really
9 tell you is the way it has been considered by the staff
10 in the past, and that is as non-safety related but
11 requiring its QA program. And NRR has had standard
12 review plan areas where they specify what type of
13 quality assurance fire protection systems should get.
14 And those have been sent to licensees that said we want
15 you to commit to a quality assurance program of this
16 type for fire protection, or if you don't want to do
17 this, then send us your specific quality assurance
18 program for fire protection. If you apply your Appendix
19 B program to it, then it would be satisfactory, and that
20 is generally what licensees have done.

21 In fact, LILCO committed to do that, although
22 they did take a few exceptions to the Appendix B program
23 and said that the full program wouldn't be applied but
24 with certain exceptions that were defined.

25 BY JUDGE BRENNER (Resuming):

1 Q I guess the gist of why I'm asking about this
2 is I'm wondering whether it is valid to draw a
3 conclusion generally as to treatment by a utility of
4 structures, systems and components that are non-safety
5 related but important to safety on the basis of the
6 treatment of the fire protection system. And I take it
7 you are saying it is not because it has been separately
8 called to the attention of utilities by the NRC that
9 they should do certain things in that area.

10 A (WITNESS HIGGINS) Yes, Judge Brenner, I agree
11 with that.

12 JUDGE BRENNER: That is all we have. When we
13 pick up tomorrow morning we will pick up at 9:00 o'clock
14 with the county's follow-up questions. I hope to finish
15 tomorrow morning with everything. Based upon the
16 estimates we should. And we have a few miscellaneous
17 matters left over from today that we can pick up
18 tomorrow morning, also.

19 MR. LANPHER: After we go off the record I
20 will pass out our Torrey Pines testimony.

21 JUDGE BRENNER: And we are going to get
22 LILCO's I&E filing.

23 MR. EARLEY: Judge, we will have the response
24 to the IE findings and also, the ICC settlement
25 agreement has arrived.

1 JUDGE BRENNER: Very good. We are adjourned.
2 (Whereupon, at 5:15 p.m., the hearing in the
3 above-entitled matter was recessed, to reconvene at 9:00
4 o'clock a.m. the following day, Wednesday, December 22,
5 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 21, 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)