

NUCLEAR REGULATORY COMMISSION

ORIGINAL

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:

LONG ISLAND LIGHTING COMPANY

(Shoreham Nuclear Power Station)

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DOCKET NO. 50-322-OL

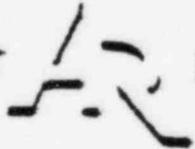
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AT: Bethesda, Maryland

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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
Thursday, October 14, 1982

The hearing in the above-entitled matter
convened, pursuant to notice, 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

3 On behalf of Applicant:

4 ANTHONY F. EARLEY, Esq.

5 W. TAYLOR REVELEY III, Esq.

6 T. S. ELLIS III, Esq.

7 Hunton & Williams

8 707 East Main Street

9 Richmond, Va. 23212

10

11 On behalf of the Regulatory Staff:

12 BERNARD BORDENICK, Esq.

13 DAVID A. REPKA, Esq.

14 Washington, D.C.

15

16 On behalf of Suffolk County:

17 LAWRENCE COE LANPHER, Esq.

18 KARLA LETSCHE, Esq.

19 Kirkpatrick, Lockhart, Hill,

20 Christopher & Phillips

21 1900 M Street, N.W.

22 Washington, D.C. 20036

23

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E X H I B I T S (Cont'd)

	<u>NUMBER</u>	<u>IDENTIFIED</u>	<u>RECEIVED</u>
3	FA 980, findings 4.2 & 4.3; FA 1026,		
4	findings 4.1 & 4.2; FQC 33, pg 2 of 3		
5	and D.4; FA 1086, finding 4.2; FQC 34,		
6	finding N.2; FA 1180, findings 4.1 & 4.3;		
7	and FA 1234, finding 4.1		11,754
8	SC 65 - FQC 17, finding D.4; and FQC		
9	21, finding D.7		11,805
10	SC 65 - FA 980, finding 4.1		11,809
11	SC 65 - FQC-34, finding K.3		11,811
12	SC 65 - FQC 35, paragraph 3.2.1,		
13	and attachment 2		11,815
14	SC 65 - GQC 20, finding D.4;		
15	FA 425, finding 4.4; FA 470,		
16	finding 4.3; FQC 24, finding D.5;		
17	FA 740, findings 4.1 and 4.2; FA		
18	1086, finding 4.1; and FA 1313,		
19	finding 4.2		11,824
20	SC 65 - FQC 23, finding D.8		11,827
21	SC 65 - FA 340, finding 4.1; FA 376,		
22	finding 4.3; FQC Audit 21, finding		
23	D.15; FQ Field Audit 648, finding		
24	4.3; FA 699, finding 4.1; and FA 721,		
25	finding 4.3		11,848
26	SC 65 - FA 679, finding 4.2; FA 226,		
27	finding 4.1; and FA 803, finding 4.1		11,857
28	SC 65 - FA 1301, finding 4.2		11,861
29	SC 65 - FQC 21, findings B.9, D.14,		
30	D.16 and D.17		11,867

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E X H I B I T S (Cont'd)

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NUMBERIDENTIFIEDRECEIVED

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SC 65 - Portions of the quarterly
 reports of 5-30-80, 7-22-80,
 11-13-80, 2-17-81, 8-31-81 and
 12-31-81

11,881

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Settlement Agreements relating to Suffolk County
 Contentions 19, 20, 25, 26 and 27.....page 11,677

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RECESSES:

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Morning - 11,708

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Noon - 11,779

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Afternoon - 11,382

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P R O C E E D I N G S

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JUDGE BRENNER: Good morning.

What we would propose to do before returning to the cross-examination would be to discuss the status of settlement agreements other than on emergency planning, and in fact we are prepared to approve the ones we have received, as we discussed along the way either on or off the record. So I hope copies are handy to be bound in.

Also, after that I want to hear a report on the status of discussions regarding inadequate core cooling. We will then talk about the status of items within the Staff review which affect contentions which we have deferred.

And then we would then like to hear arguments on the addition of two witnesses proposed by the County. We probably didn't make that clear yesterday. Is that a problem?

MR. LANPHER: Judge Brenner, I got the LILCO pleading this morning when I got over to the office, and I literally skimmed it very quickly. I would rather wait.

JUDGE BRENNER: Okay, let's defer that until tomorrow morning.

MR. LANPHER: That's fine, thank you.

1 JUDGE BRENNER: As long as we are giving you
2 another day, be prepared to answer the questions in Mr.
3 Ellis' letter orally.

4 Then we have at least one thing related to
5 quality assurance and that is the matter of the footnote
6 on the County response suggesting that some of the
7 attachments to the LILCO testimony could benefit from a
8 statement similar to the statement which LILCO asked the
9 County to prepare.

10 All right. We have received the following
11 signed settlement agreements from the parties. I will
12 take them in numerical order. Again, this is not
13 counting emergency planning, and I will just use the
14 first contention where there is a pair of contentions:

15 Suffolk County contention 19, human factors
16 procedures; Suffolk County contention 20, human factors
17 simulator training; Suffolk County contention 26, ALARA;
18 Suffolk County contention 25, which has been referred to
19 sometimes as reactor pressure vessel integrity and
20 testing, and also more fully as preservice inspection
21 and in-service inspection and reactor pressure vessel
22 integrity; Suffolk County 27 -- did we deal with that
23 one previously? We discussed it. I don't know if we
24 formally approved it.

25 MR. REVELEY: No, you have not.

1 JUDGE BRENNER: It is in the nature of a
2 stipulation or a partial settlement, and that deals with
3 post-accident monitoring and Regulatory Guide 1.97.

4 We have also received, but are not prepared to
5 approve, as we discussed previously and which we will
6 discuss again in a moment, a proposed settlement
7 agreement on Suffolk County contention 31, electrical
8 separation.

9 We have not received, we do not believe,
10 matters in the form of settlement agreements, although
11 we have had discussions on some of these matters on
12 Suffolk County 18, human factors equipment, and Suffolk
13 County 24, materials cracking. Am I correct on that?

14 MR. REVELEY: That is correct, nor have you
15 received one yet on Suffolk County 5, loose parts
16 monitoring.

17 JUDGE BRENNER: Yes, thank you. I forgot that
18 one.

19 Okay. On the ones we have received, we are
20 prepared to approve them and bind them in at this point,
21 other than Suffolk County 31, as I stated. We have
22 looked at them all on the way and we just received one
23 yesterday, but the others we had no time to look at.

24 In approving them, the Board would like to
25 thank the parties very much for the detail that was

1 included in the agreement. It assists us in knowing to
2 the extent we have to know, without knowing to the
3 fullest extent, which we don't have to know, what went
4 on in the negotiations and just what was involved, and
5 they obviously reflect a lot of hard work on the part of
6 lawyers and technical people, and see to be very
7 satisfactory resolutions.

8 And as I said, the wording of the agreement
9 has been extremely helpful to the Board in assessing
10 whether we have any remaining concerns and in helping us
11 take a good look at what went on, and we thank the parties
12 for that.

13 In approving these agreements, we understand
14 of course that the terms of some of them do not totally
15 resolve the issues necessarily in some cases, because
16 the matters remaining in controversy will be litigated
17 or further discussed under another contention, and we
18 understand that, and I don't think we have to recite the
19 terms in any further detail now.

20 So we will bind in the resolution of Suffolk
21 County 19, Suffolk County 20, Suffolk County 26, Suffolk
22 County 25 -- I don't know why I reversed the order of
23 those -- and Suffolk County 27.

24 (The documents referred to, settlement
25 agreements relating to Suffolk County contentions 19,

- 1 20, 25, 26 and 27, 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 19 -- HUMAN FACTORS: PROCEDURES

This Agreement among Long Island Lighting Company (LILCO), the Nuclear Regulatory Commission Staff (Staff), and Suffolk County (SC or County) (hereinafter collectively, the Parties), resolves SC Contention 19 in accordance with the terms stated below, subject to the approval of the Atomic Safety and Licensing Board.

A. RECITALS

1. SC Contention 19 concerns the human-factors aspects of Shoreham's procedures. SC alleged that:

- (a) Shoreham's training programs and procedures are not consistent and are not plant-specific, making them inaccurate and likely to cause confusion for plant operators;

(b) Procedures are inadequate to respond to station blackout, shift turnover and operation in protective clothing or equipment, and to assure knowledge of shutdown system operability;

(c) The human-factors implications of responding to emergency procedures have not been adequately verified; and

(d) Shoreham procedures are keyed, improperly, to annunciators, thereby failing to provide operators with an optimum method of diagnosing accidents in the event of multiple alarms.

SC alleged that, for these reasons, Shoreham failed to comply with 10 CFR §§ 50.40 and 50.57.

2. On May 25, 1982, the Parties filed direct testimony on SC Contention 19. Subsequent to the filing of that testimony, LILCO informed Suffolk County that Shoreham's procedures had undergone extensive revision since January 1982, and that the versions of the procedures referenced in SC's prefiled testimony were no longer current. SC was not provided a complete set of LILCO's revised procedures until after SC's prefiled testimony on SC Contention 19 had been submitted.

3. By this Resolution Agreement, LILCO documents that it either has or will take the steps described below, which respond to the concerns expressed in SC's direct testimony on Contention 19. SC has determined that LILCO's actions do

respond to the matters set forth in the SC testimony and thus satisfy the County's concerns. In SC's view, these actions result in material improvement to Shoreham's procedures and operator training, and thus will contribute to the safe operation of Shoreham. Accordingly, based upon LILCO's actions and commitments, the County finds that SC Contention 19 is resolved. As a result, SC, LILCO and the Staff jointly urge the Board to accept this Resolution to terminate litigation of SC Contention 19. The details of this Resolution are described below.

B. AGREEMENT

1. SC Contention 19(a) -- Consistency among Procedures, Training and System Design

SC has urged the need for review of Shoreham's normal and emergency operating procedures against Shoreham's operator training program and plant system design, as a means of assuring consistency in nomenclature, system and component descriptions, instructions, controls, and actual hardware to be used by Shoreham operators. SC believes that such consistency is necessary to make Shoreham's procedures and training program accurate, and to avoid the potential for confusing plant operators.

Consistency was among the objectives of the extensive revisions to Shoreham's procedures begun in January 1982. LILCO has also revised certain of its procedures to incorporate

recommendations made by SC consultants during meetings between them and LILCO personnel, which took place after direct testimony had been filed on SC Contention 19. These revisions to Shoreham's event-oriented emergency procedures address human-factors concerns by providing consistency in instructions and nomenclature.

In addition, LILCO has provided for review by SC consultants examples of system turnover packages used at Shoreham. These packages provide documentation of consistency among certain system designs, as-built equipment, and normal system operating procedures. The turnover packages made available to and reviewed by SC consultants, demonstrate that LILCO has verified the correlation of procedures with system design, for the systems reviewed, by means of system walk-throughs.

At the request of SC consultants, LILCO has provided SC with copies of the lesson plans relating to Transient Analysis and Water Level Measurement. SC consultants reviewed these lesson plans to determine the correlation between them and Shoreham emergency operating procedures (including symptom-oriented procedures). SC consultants also reviewed a sample study outline provided by LILCO to show the general relationship between LILCO's training program and operating procedures.

LILCO agrees that, prior to Shoreham's second refueling outage, it will (i) perform a review of all system

descriptions, operating procedures and lesson plans to ensure that there is consistency in nomenclature, descriptions and instructions, and (ii) make whatever modifications to procedures and/or lesson plans that may be necessary to achieve such consistency. This review will be conducted by the Shoreham Operations Staff in conjunction with the Independent Safety Engineering Group (ISEG). The results of such review will be provided to SC.

Based on SC consultants' review of materials provided and actions already taken by LILCO, as described above, the County has determined that, with the implementation of the actions just described, LILCO will have addressed the concerns stated in SC Contention 19(a), which the County considers resolved.

2. SC Contention 19(b)
-- Adequacy of
Specific Procedures

SC has contended that the Shoreham procedures relating to station blackout, shift turnover, and the use of protective clothing and equipment were inadequate and that such inadequacies increased the risk of inadvertent operator error. SC has urged the need for upgrading and review of procedures and training in these areas in order to provide greater assurance of safe plant operation.

(a) Station Blackout

LILCO has provided SC consultants with copies of a revision to SP 29.015.01 (Rev. 2), "Loss of Off-Site Power

Emergency," and a new procedure, SP 29.015.02 (Rev. 0), "Loss of All AC Power Emergency." SC consultants have reviewed these procedures and have determined that LILCO has now satisfied the requirements of NRC generic letter 81-04. Accordingly, the concern relating to station blackout procedures stated in SC Contention 19(b) is resolved.

(b) Shift Turnover

LILCO has provided SC consultants with a copy of a revision to SP 21.002.01 (Rev. 3), "Operations Logs and Records," that documents Shoreham operators' responsibilities relating to shift turnover. SC consultants have reviewed this procedure and have discussed its implementation with members of LILCO's Operations Staff. Based upon such review and discussions, SC is satisfied that LILCO has now addressed SC's concern relating to shift turnover procedures stated in Contention 19(b). Accordingly, SC considers this concern to be resolved.

(c) Protective Clothing and Equipment

LILCO has provided SC consultants with documentation which describes training provided to Shoreham operators on the use of protective clothing and respirators.

In response to the request of SC consultants, LILCO also agrees to provide, prior to fuel load, additional operator training on the use of respirator face masks. This training will take place in the Shoreham control room and will be designed to acquaint operators with potential problems

associated with plant operation while wearing a face mask. LILCO will provide to SC documentation of the above drill.

Based upon the County consultants' review of Shoreham training and LILCO's agreement to provide the additional training described above, SC considers its concern relating to protective clothing and equipment stated in Contention 19(b) to be resolved.

3. SC Contention 19(c) -- Emergency Operating Procedures

SC has stressed the need to verify that Shoreham's emergency operating procedures adequately address the human factors involved in an operator's use of those procedures. The County has contended that a thorough human-factors review of the emergency operating procedures is necessary to provide assurance that those procedures properly take into account factors such as the location of controls, and the sequence and timing of required activities. SC believes that such assurance is required to ensure proper operator performance in the event of an emergency.

SC consultants and LILCO representatives have met on several occasions to discuss emergency operating procedures (both event-oriented and symptom-oriented). These discussions included an evaluation of all event-oriented emergency operating procedures using the "Checklist for Evaluating Emergency Procedures Used in Nuclear Power Plants" set forth in NUREG/CR-2005.

At the request of SC consultants, and as a result of the evaluation describe above, LILCO has made changes to several event-oriented procedures, and has provided SC with documentation showing that the recommended changes have been made.

In addition, LILCO has provided SC consultants with a revision to SP 21.004.01 (Rev. 4), "Main Control Room -- Conduct of Personnel," which documents the responsibilities and task requirements of control room personnel during a plant emergency. LILCO has also provided SC consultants with a description of shift staffing and division of responsibilities in order to place into context the task responsibilities described in the procedure.

LILCO agrees to perform, prior to fuel load, walk-throughs of the following event-oriented emergency operating procedures:

- (i) SP 29.010.01 (Rev. 3), "Emergency Shutdown," and
- (ii) SP 29.016.01 (Rev. 1), "Loss of Instrument Air."

LILCO further agrees to perform, prior to fuel load, a walk-through of a drill scenario, to be agreed upon by SC consultants and LILCO, that will demonstrate the operator's transition from use of alarm response procedures to use of event- or symptom-oriented emergency procedures. The walk-throughs of the procedures will be monitored by SC consultant ERG, Inc., and their consultants, as required. The criteria for evaluating the adequacy of the task performances required during the walk-throughs will be provided by ERG, Inc., prior to

performance of the walk-throughs. The drill scenario will be observed by plant operations management (e.g., the Operating Engineer or Plant Manager), using SC criteria and an SC check list.

After having monitored the walk-throughs, and having reviewed the results of the drill, SC, through its consultant ERG, Inc., may provide recommendations to LILCO for further modifications to procedures or training. LILCO will review any such recommendations in good faith, and will implement them, as appropriate. LILCO will advise SC of its actions on SC recommendations and, at the request of SC, its reasons for such actions. If requested by SC, Shoreham Operations Staff personnel will be available to discuss with SC consultant ERG, Inc., any such recommendations.

Based upon SC consultants' review of materials and the actions already taken by LILCO described above, the County has determined that, with the implementation of the actions committed to by LILCO above, LILCO will have addressed SC's concerns stated in Contention 19(c), relating to emergency operating procedures. Accordingly, SC Contention 19(c) is resolved.

4. SC Contention 19(d) -- Alarm Response Procedures

SC has urged the need for providing operators with a consistent and rational method for diagnosing accidents or malfunctions so that timely and appropriate actions and

responses can be taken. SC has contended that the Shoreham operators are not provided adequate guidance to enable them to proceed from responding to an alarm to taking additional actions required if the alarmed condition escalates into a more serious event.

At the request of SC consultants, LILCO has provided documentation of walk-throughs of procedures and drill scenarios to demonstrate the use of alarm response procedures (ARPs) by Shoreham operators in responding to emergencies. LILCO has also provided to SC consultants copies of portions of the operator qualification guide showing the program and training requirements for operators in the use of ARPs and procedures. In addition, LILCO has supplied SC with examples of drill scenarios that demonstrate the transition from responses solely requiring the use of ARPs to those involving the use of symptom- and event-oriented procedures. Based upon the review of the materials described above, SC consultants have determined that SC's concerns expressed in Contention 19(d), relating to ARPs, have been resolved.

9/2/82
Counsel for _____ date
LONG ISLAND LIGHTING COMPANY

9-10-82
Counsel for _____ date
SUFFOLK COUNTY

9/13/82
Counsel for _____ date
NUCLEAR REGULATORY COMMISSION
STAFF

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 O.L.
(Shoreham Nuclear Power Station,)
Unit 1))
_____)

RESOLUTION OF SUFFOLK COUNTY CONTENTION 20 --
HUMAN FACTORS: SIMULATOR TRAINING

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 20 in accordance with the terms stated below, subject to the approval of the Atomic Safety and Licensing Board (Board).

SC Contention 20 concerns the adequacy of the proposed operator requalification program at Shoreham and LILCO's use of the control room simulators at Dresden and Limerick, in connection with such program, prior to the time that a Shoreham-specific simulator becomes operational. SC has alleged that LILCO's intended use of the Dresden and Limerick simulators is not adequate for Shoreham operator requalification training due to differences in operational characteristics and the arrangement of instrumentation and controls between the Shoreham plant and the simulators. SC has alleged that LILCO's failure to address such differences in its requalification program violates 10 CFR Part 55, Appendix A, because there is no assurance that the program will produce and maintain operator competency at Shoreham.

On May 25, 1982, LILCO pre-filed direct testimony on SC Contention 20, providing information relative to the Shoreham operator requalification program. In its prefiled testimony, LILCO stated that only the Limerick simulator, and not the Dresden simulator, would be used for Shoreham operator requalification training. This disclosure reduced SC concerns because the Limerick simulator is far more compatible with Shoreham than is the Dresden simulator.

By this Resolution, LILCO documents that it either already has or will take the steps described below, which respond to the concerns raised in SC Contention 20. SC has determined that LILCO's actions do respond to the matters set forth in SC Contention 20 and thus satisfy the County's concerns. In the County's view these actions materially improve the Shoreham operator requalification training program, and thus will contribute to ensuring competence of Shoreham operators and to the safe operation of the plant. Accordingly, based upon LILCO's agreement to carry out these actions, SC finds that SC Contention 20 is resolved. The details of this Resolution and LILCO's agreement to implement the actions specified herein are described below.

A. Ensuring That Limerick Simulator Training Is Properly Applicable to Shoreham

For that period of time commencing with initial Shoreham operator requalification training and ending with the availability of the Shoreham-specific simulator, LILCO will use the Limerick

simulator for Shoreham operator requalification training. While this constitutes an improvement over use of the Dresden simulator, SC has also urged the need for additional actions by LILCO to compensate for inconsistencies in plant design and operator responses between the Shoreham plant and the Limerick simulator. In SC's view, compensatory actions are necessary in order to assure the adequacy of Shoreham operator requalification training.

SC consultants have reviewed information provided by LILCO subsequent to the filing of testimony on SC Contention 20. This information concerns the Shoreham requalification program, the Limerick simulator and the training which can be provided to Shoreham operators on that simulator (including a listing of transients, accidents and malfunctions that can be simulated), and a comparison of the operational characteristics and control panels of Shoreham and the Limerick simulator. SC consultants also discussed these and related materials with the LILCO training staff. As a result of this review and these discussions, SC consultants have determined that LILCO has now addressed SC's concerns relating to the need to compensate for the differences between the Shoreham plant and the Limerick simulator, by having taken and agreeing to take the actions described below as part of the Shoreham operator requalification training program:

1. Shoreham-specific normal, abnormal, and emergency operating procedures will be used by Shoreham operators during simulator requalification training at the Limerick simulator.

2. Simulator requalification training will be conducted using a team concept; the team will be required to duplicate the functions and responsibilities of a typical Shoreham control room staff.

3. Plant walk-through drills will be performed at the Shoreham plant as part of the requalification training program. These drills are designed to supplement the simulator portion of "hands-on" requalification training by reproducing control room events associated with abnormal operating scenarios. Drills will be conducted utilizing Shoreham alarm response, abnormal, and emergency procedures, and will be performed from an initiating event through the required immediate action to subsequent actions.

4. The in-plant drills described above will be performed by a team of operator requalification candidates to whom the responsibilities of a typical Shoreham control room staff have been individually assigned.

B. Duration, Frequency and Content of Simulator Training

SC consultants believe that the foregoing actions by LILCO address, in part, the SC concerns about the impact on operator training of differences between the Shoreham plant and the Limerick simulator. In addition, LILCO agrees to take further actions, described below, to respond to SC concerns that the duration, frequency and content of the simulator portion of LILCO's requalification program are inadequate:

1. Each Shoreham licensed reactor operator and senior reactor operator will undergo at least five days of simulator-related training every six months. Each five-day session will include at least three days of actual simulator training at Limerick, plus preparatory training, either at Shoreham or at Limerick, to identify and reinforce Shoreham-specific plant characteristics and required operator responses.

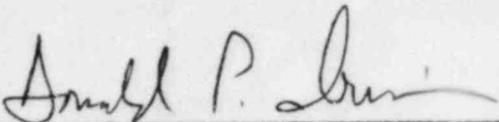
2. The plant evolutions listed in the Attachment hereto will be performed by each Shoreham licensed reactor operator and senior reactor operator on an annual or biannual basis, as set forth in the Attachment. These evolutions will be performed using any combination of the following three methods:

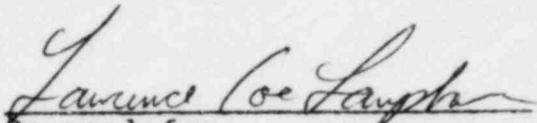
- a) Actual in-plant performance at Shoreham during normal plant operation;
- b) Simulated in-plant drills at Shoreham; and
- c) Performance at the Limerick simulator.

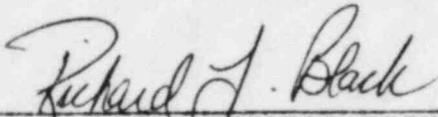
3. LILCO procedure SP 21.006.03, "Licensed Operator Requalification Program," will be revised to describe explicitly LILCO's use of the Limerick simulator, in-plant drills, and the other LILCO commitments described in Parts A and B of this Resolution. A copy of the revised procedure will be provided to SC consultants for review and comment. LILCO will, in good faith, consider SC comments and will implement them as appropriate. The revised procedure will be implemented prior to commencement of the requalification program.

4. At the time of the next available amendment to the Shoreham FSAR, LILCO will update Section 13.2 to reflect the commitments and clarifications relating to the Shoreham operator requalification training program as described herein.

Based on the actions and undertakings of LILCO described above, SC considers SC Contention 20 to be resolved.


Counsel for
LONG ISLAND LIGHTING COMPANY


Counsel for
SUFFOLK COUNTY


Counsel for NUCLEAR REGULATORY
COMMISSION STAFF

DATED: September 10, 1982

ATTACHMENT

OPERATOR REQUALIFICATION CONTROL MANIPULATIONS

The following control manipulations and plant evolutions will be performed by Shoreham operators as part of the operator requalification training program. The starred items will be performed, as a minimum, on an annual basis; all other items will be performed, as a minimum, on a two-year cycle. However, each individual will participate in as many different reactivity changes as plant conditions permit. Those control manipulations which are not performed at Shoreham during normal operations or during in-plant drills will be performed on the Limerick simulator. Personnel with SRO licenses are credited with the activities if they direct or evaluate control manipulations as they are performed.

- *A. Critical approach from subcritical on the source range instrumentation to the point of adding nuclear heat verified by establishing a heatup rate.
- B. Plant shutdown to a 1% shutdown margin.
- *C. Manual control of feedwater during plant startup and shutdown.
- *D. Any power change of 10% or greater in manual rod control or manual recirculation flow.
- *E. Loss of coolant including:
 1. Inside and outside primary containment.

2. Large and small, including leak-rate determination.
- F. Loss of instrument air (must be performed at Shoreham).
- G. Loss of electrical power (and/or degraded power sources).
- *H. Loss of recirculation flow.
- I. Loss of condenser vacuum.
- J. Loss of safety related service water.
- K. Loss of RBCLCW to individual components.
- *L. Loss of feedwater/feedwater system failure.
- M. Loss of a protective system channel.
- N. Mispositioned or dropped control rod or rods.
- O. Inability to move control rods.
- P. Conditions requiring use of the standby liquid control system.
- Q. Fuel cladding failure or high activity in reactor coolant or offgas.
- R. Turbine or generator trip.
- S. Malfunction of automatic control system(s) which affect reactivity.
- T. Malfunction of reactor coolant pressure.
- U. Reactor trip.
- V. Main steam line break (inside or outside containment).
- W. Nuclear instrumentation failure(s).
- X. Operation of the fuel handling bridges during refueling or core loading or unloading (licensed fuel-handling personnel only).
- Y. Moving control rods in response to a xenon transient.
- Z. Manual rod control prior to and during generator synchronization.

- AA. Turbine/generator startup.
- BB. Recirculation flow control malfunction.
- CC. Abnormal reactor water level.
- DD. Loss of shutdown cooling.

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 25/SHOREHAM OPPONENTS
COALITION CONTENTION 19(a) -- PRE-SERVICE
INSPECTION AND IN-SERVICE INSPECTION
AND REACTOR PRESSURE VESSEL INTEGRITY

This Agreement among Long Island Lighting Company ("LILCO"), the Nuclear Regulatory Commission Staff ("Staff"), Suffolk County ("SC") and Shoreham Opponents Coalition ("SOC") (hereinafter collectively, the "Parties") resolves SC Contention 25/SOC Contention 19(a) in accordance with the terms stated below, subject to the approval of the Atomic Safety and Licensing Board.

SC Contention 25/SOC Contention 19(a) involve several issues related to the pre-service inspection and in-service inspection ("PSI/ISI") programs as well as reactor pressure vessel ("RPV") integrity. In essence, in these contentions SC and SOC alleged that LILCO failed to demonstrate the following:

1. The adequacy and completeness of the PSI program;
2. The timely definition of the ISI program and assurance that the approved program will be complete;
3. Assurance that there is correlation between the PSI and ISI programs;
4. Compliance of the PSI/ISI programs with Regulatory Guide 1.150; and
5. The integrity of the RPV in accordance with Regulatory Guide 1.2.

On June 14, 1982, LILCO, the Staff and SC pre-filed direct testimony on SC Contention 25 and LILCO and the Staff pre-filed direct testimony on SOC Contention 19(a). In its prefiled testimony, SC set forth its concerns relating to the PSI and ISI programs at Shoreham.

By this Resolution Agreement, LILCO documents that it either has or will take the steps described below, which respond to the SC and SOC concerns expressed in SC Contention 25/SOC Contention 19(a) and in SC's direct testimony. SC and SOC have determined that LILCO's actions respond to their concerns and thus satisfy those concerns. Accordingly, based upon LILCO's actions and commitments, SC and SOC find that SC Contention 25/SOC Contention 19(a) are resolved. As a result, the Parties jointly urge the Board to accept this Resolution to terminate litigation on SC Contention 25/SOC Contention 19(a).

The details of discussions among SC and SOC consultants and LILCO representatives, review of materials by SC and SOC consultants, and actions and undertakings by LILCO regarding each of the issues raised in SC Contention 25/SOC Contention 19(a) are described below.

1. PSI Program

SC's concern regarding the adequacy of Shoreham's PSI program stems from the fact that the reactor vessel and portions of the Shoreham system design predate the establishment of the ASME Code PSI definition. SC is therefore concerned that the PSI program at Shoreham would result in LILCO's submitting to the NRC an unacceptable number of exemptions and relief requests.

The PSI program at Shoreham is now basically complete, and subsequent to the filing of testimony on SC Contention 25/SOC Contention 19(a), LILCO documented the extent of the PSI program relief requests. (See SNRC-759, August 16, 1982, Attachment 1 hereto.) This letter lists the relief requests for the Class 1 and Class 2 piping systems, and for the RPV.

SC consultants have reviewed the relief requests submitted by LILCO and are satisfied that the Shoreham PSI program is nearly in complete compliance with the Code requirements and is as complete as is reasonably achievable. A number of relief

requests, identified on key welds in the recirculation and RHR systems, are of concern to SC; however, because these deficiencies are being addressed in connection with SC Contention 24, they are not viewed by SC as an impediment to resolution of the PSI portion of SC Contention 25.

2. ISI Program

SC's concern relating to the Shoreham ISI program is that the program had not yet been developed at the time SC submitted prefiled direct testimony on SC Contention 25. Indeed, in SC's view at that time, LILCO had not even made a commitment relating to such a program. However, in response to the concerns raised by SC, LILCO provided SC consultants, subsequent to the filing of testimony on SC Contention 25, with the following materials:

(a) Instruction manuals and drawings of the RPV inspection system for ISI, including:

- (i) NES Document 80A2980
- (ii) NES Document 80A2981
- (iii) NES Document 80A3047
- (iv) 102 NES Permanent and Magnetic Track Drawings as follows:
 - 80(B,C,D or E) 2983 through 2997
 - 80D299
 - 80(D or E) 3001 through 3041

80C3043, 3046, 3049, 3050, 3051, 3056, 3064
and 3065

80(C or D) 3077 through 3113

(v) NES Lower Head Track System Drawing (80E4441)

(b) Layout drawing of the RPV welds showing the extent of weld inspection coverage and relief requests.

As a result of a review of the information described above, SC consultants agree that the Shoreham ISI program planned for the RPV is nearly in complete compliance with 1980 ASME Section XI. Although they cannot be predicted with certainty, no significant changes are anticipated in the edition of the ASME code to which Shoreham's ISI program will adhere.

In addition, LILCO agrees to the following with respect to the Shoreham ISI program:

(a) LILCO will complete development and documentation of the ISI program in a timely manner (no later than one year after issuance of an operating license).

(b) The scope of the piping inspections of the ISI program to the fullest extent possible should be at least as extensive as implied by the PSI program unless Code or regulatory requirements change. (See SNRC-759, Attachment 1 hereto.)

(c) The RPV ISI program will be conducted in accordance with, and to the fullest extent possible as provided by, the NES documents and drawings identified above.

SC agrees that the above commitments by LILCO satisfy the concerns of SC regarding the development of the ISI program.

3. PSI/ISI Correlation

SC's concern regarding the correlation between Shoreham's PSI and ISI programs arises because the PSI program is required to be based on the 1971 edition of the ASME Code, whereas the ISI program must meet a 1980 or later edition of the Code. In SC's view, the earlier provisions of the Code do not require complete inspection of all welds. In SC's view, this results in the potential for problems in correlating the PSI results with those from the ISI program.

Subsequent to the filing of testimony on SC Contention 25, however, LILCO reported that the PSI program is now nearly complete. LILCO has also now identified all PSI relief requests. The PSI program has included a complete inspection of all possible RPV welds and approximately three times the number of Class 2 welds as is likely to be necessary to satisfy the anticipated ISI program requirements for the first 10 year inspection period. Therefore, SC is now satisfied that its concerns relating to the correlation of PSI and ISI programs at Shoreham have been addressed.

4. Regulatory Guide 1.150

SOC Contention 19(a) expressed the concern that the Shoreham PSI/ISI programs were not being performed in compliance with newly issued Regulatory Guide 1.150, and thus would not meet state-of-the-art requirements. Subparts of this contention addressed calibration requirements, photographic records, travel time, and ALARA concerns. LILCO has taken the position that the PSI program did not need to follow Regulatory Guide 1.150 because the PSI inspection of the RPV was completed prior to the implementation date of the Regulatory Guide. LILCO has demonstrated, however, that the calibration requirements used in the Shoreham PSI program were actually more restrictive than those specified in Regulatory Guide 1.150. With regard to travel time and ALARA issues, LILCO has demonstrated that these concerns are not directly addressed in Regulatory Guide 1.150.

LILCO has also committed that the ISI program will implement the provisions applicable to BWRs of the June 1981 issue of Regulatory Guide 1.150, or of the next subsequent revision of the Guide. However, as is noted in the Regulatory Guide, "methods and solutions different from those set out in the [Guide] will be acceptable, if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission."

LILCO's ISI contractor (NES) has been active on an EPRI committee working on recommendations for revisions to Regulatory Guide 1.150. This will help to assure compliance of the ISI program at Shoreham with the latest recommendations. LILCO has provided SOC consultants with a copy of the EPRI report which was recently submitted to the NRC.

Based on the foregoing information and commitments of LILCO, SOC agrees that LILCO is now adequately responding to Regulatory Guide 1.150 and, therefore, SOC's concerns are satisfied. SC concurs.

5. Regulatory Guide 1.2

SOC Contention 19(a) also addressed the issue of compliance with Regulatory Guide 1.2 in the design of the pressure vessel. LILCO has committed in the FSAR to compliance with Regulatory Guide 1.2 and has also included consideration of the Heavy Section Steel Technology Committee recommendations. The recent generic concern for potential pressure vessel failure due to pressurized thermal shock has been asserted by LILCO to be primarily a PWR issue. SOC agrees with this assertion and therefore agrees that this issue is resolved.

Based on the foregoing actions and undertakings by LILCO, SC considers SC Contention 25 to be resolved. In addition, based on LILCO's commitments and actions taken, SOC believes that SOC Contention 19(a) is resolved, and SC concurs.

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STAFF

DATED: September 17, 1982

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 26 -- ALARA

Suffolk County Contention 26 concerns maintaining occupational exposures as low as is reasonably achievable ("ALARA") at the Shoreham Nuclear Power Station. Suffolk County ("SC") has alleged that LILCO has failed to implement an effective ALARA program, leading to the possibility that Shoreham workers will be unnecessarily exposed to radiation. Such unnecessary exposures would result in violations of 10 C.F.R. Section 20.1(c). In the County's view, the lack of an effective ALARA program results from inadequate procedures and design and other features to minimize occupational radiation exposures, particularly during maintenance at Shoreham.

On May 4, 1982, LILCO prefiled direct testimony on SC Contention 26, providing information relative to the Shoreham ALARA program. On the same day, SC also prefiled direct testimony

on SC Contention 26, listing the steps which SC believes are necessary in order to minimize occupational radiation exposures to Shoreham workers.

By this Resolution Agreement, LILCO documents that it either already has or will take the steps described below, which respond to the SC concerns expressed in its direct testimony. SC has determined that LILCO's actions do respond to the matters set forth in the SC testimony and thus satisfy the County's concerns. In the County's view, these actions materially improve the LILCO ALARA program and thus will contribute to the safety of workers at Shoreham. Accordingly, based upon LILCO's agreement to carry out these actions, SC finds that SC Contention 26 is resolved. As a result, the County, LILCO and the Staff jointly urge the Licensing Board to accept this Resolution to terminate litigation of SC Contention 26.

The details of this Resolution and LILCO's agreement to implement the actions specified herein are described below:

1. Main Steam Pipe Tunnel

SC has urged the need to reduce maintenance worker radiation doses inside the main steam pipe tunnel, particularly when performing maintenance on the Main Steam Isolation Valves ("MSIV's"). This concern arises primarily because of the cramped conditions in the tunnel, leading to more difficulty in performing maintenance and hence to longer potential periods of exposure within the tunnel. SC recommended the use of additional shielding and steps to reduce the time required to perform maintenance actions.

LILCO has done the following:

- It has provided to SC consultants drawings (FM-1B-13, FM-57B-4, FM-75A-5) and studies (SK-699, MTF No. 0765), showing the accessibility of the MSIV's in the main steam line tunnel.
- LILCO has added a platform to improve maintenance access to the MSIV's. This platform complements pre-installed monorails and hoists.
- Through use of "Radiation Work Permit" (SP 12.012.01) and "ALARA Job Review" (SP 61.071.01), LILCO will provide for the use of temporary shielding as required during maintenance in the main steam tunnel.
- LILCO has procured a Dexter valve lapping machine.
- LILCO has conducted a maintainability study that analyzes access to various equipment for maintenance and removal and has effected changes to improve compliance with ALARA goals based upon this study.

SC consultants have toured the main steam pipe tunnel to visually inspect the area and verify changes. SC consultants also have reviewed the LILCO drawings and appropriate parts of the maintainability study for content and implementation. Based upon SC's review of these data and LILCO's addition of a platform in the main steam tunnel improving access and reducing occupational exposures, this concern is resolved.

2. Lower Drywell Area

SC has urged actions to reduce occupational doses resulting from maintenance inside the lower drywell area. Areas of concern are the recirculation pumps, inboard MSIV's, control rod drives, and areas of inservice inspection. SC has recommended the use of additional shielding and/or improved accessibility.

LILCO has done the following:

- It has provided to SC consultants drawings (FM-1B-23, FM-1D-11, FM-1F-12, FM-57B-4, FM-75B-4) and studies (SK-699, SK-606, SK-592, SK-609A, B, C, MTF No. 1180, MTF No. 1181 Rev. B, MTF No. 0706 Rev. B, E&DCR F-39797), showing the accessibility for maintenance and removal of the inboard MSIV's, recirculation pump motors, recirculation pump seals, and control rod drives.
- LILCO has written and will implement procedures that provide for the use of temporary shielding.
- LILCO is modifying the control rod drive repair/rebuild room.
- LILCO has also redesigned portions of the control rod drive removal system.
- LILCO has designed and will install removable and numbered insulation panels to facilitate access for inservice weld inspections.

SC consultants have toured the drywell areas to visually inspect the modifications and verify installed and planned changes.

SC consultants have also reviewed drawings and studies supplied by LILCO. Further, SC consultants have requested the following additional commitments, to which LILCO has agreed:

- LILCO will reanalyze inboard MSIV removal and maintenance accessibility after the drywell is cleared of other obstructions. This reanalysis will not necessitate the removal of the MSIV's but will require visual inspection and analysis of removal routes, lift points and maintenance clearances for interferences from other components. LILCO shall provide ^{and the Staff} SC_A with the results of its reanalysis as soon as it is completed, but in no event later than 20 days prior to commencement of fuel load. Based on the results of this reanalysis, LILCO will take any appropriate action regarding equipment in order to reduce interferences and thereby improve access and maintainability features.
- LILCO will maintain an adequate number of spare control rod drive units to minimize rework during refueling outages.
- A shield for the spud end of the control rod drive will be used for drive movement whenever a man-rem reduction will occur due to use of the shield.

Implementation of the above actions will resolve SC concerns in this area.

3. Upper Drywell

SC's concern is to reduce operational doses to personnel in the upper part of the drywell during refueling and maintenance periods. In particular, SC is concerned about (a) doses that result from any mishandling of fuel during fuel transfer and (b) exposures during Safety Relief Valve ("SRV") and snubber removal for maintenance.

LILCO has done the following:

- It has provided to SC consultants drawing (EM-75B-4) and a study (SK-700), showing the access to and maintainability equipment for the SRV's.
- LILCO will procure a "refueling radiation shield" and has provided the recently issued specification SH1-308 for the shield. This is a portable shield of thick lead and steel construction that will be placed across the gap between the reactor vessel and the spent fuel pool during refueling and will ensure that exposures are minimized in the drywell during the refueling process. If the shield is not used during refueling, access to the drywell will be restricted.
- LILCO will purchase a hydraulic removal tool to expedite snubber removal.

SC consultants have toured the drywell area above the SRV's and visually verified monorail locations for SRV removal and maintainability. SC consultants have also reviewed the above drawings and specifications to verify the minimization of doses. The above actions satisfy SC concerns in this area.

4. Additional Shielding for Unsegregated Equipment

SC is concerned that unsegregated equipment grouped together in shielded cubicles may increase maintenance worker doses. Equipment of concern includes the fuel pool cooling and cleanup pumps and reactor water cleanup ("RWCU") heat exchangers in the reactor building and radwaste collector tank pumps on Elevation 15 in the radwaste building. SC recommended shielding to further segregate the equipment. LILCO's agreements to resolve these concerns are described below.

With respect to the RWCU heat exchangers, LILCO has provided additional data on the shielding, segregation and decontamination of the above equipment. These data satisfy SC consultants that no additional action needs to be taken on the RWCU heat exchangers and the decontamination fittings provided in the system as per drawing FM-24A-14.

With respect to the fuel pool cooling and cleanup pumps and radwaste pumps, LILCO will do the following:

- It will perform a cost-benefit analysis to determine if adding permanent shielding to reduce doses during potential fuel pool cooling and cleanup pump maintenance is consistent with the ALARA principle. This analysis will evaluate shielding between pumps and between valve/piping areas and pumps for both systems.
- LILCO will perform a cost-benefit analysis to determine if installing shielding between the six small

radwaste pumps sharing a cubicle in the radwaste building is consistent with the ALARA principle. LILCO will perform the analysis assuming, at a minimum, that permanent movable shielding can be placed between or around the pumps.

- LILCO will provide the results of the above cost-benefit studies to SC consultants ^{and to the Staff} as soon as they are complete and in no event later than 20 days prior to the commencement of fuel loading. LILCO will construct, manufacture or install shielding, as appropriate, based on the results of the above analysis.

These steps satisfy SC concerns in this area.

5. Equipment Accessibility

SC is concerned that insufficient consideration has been given to equipment accessibility for operation and maintenance. Insufficient access could lengthen repair and maintenance time and lead to higher doses than are necessary.

In response to SC concerns, LILCO has done the following:

- It has provided SC consultants with the drawings that show walkways for equipment access and equipment removal aisles for radiation areas in the reactor (FM-57A, B, C), turbine (FM-68A, B, C), and radwaste (FM-65, A, B, C) buildings.
- LILCO discussed with SC consultants the maintainability studies performed by Stone and Webster, GE and LILCO.

-- LILCO has provided to SC consultants the following drawings (FM-1A-F, FM-2A-J, FM-3A-G, FM-11A, FM-43A, FM-75A, B) and specifications (SH1-043, 099, 154, 156, 279, 303, 401, 409), showing actions taken to improve equipment handling during maintenance. These include pre-installed monorails, equipment handling hoists, trolleys, jib cranes, etc.

LILCO has also initiated two task forces, one to evaluate maintainability and a second to review the plant for ALARA concerns.

SC consultants have toured the drywell and reactor building area and verified trolleys, monorails and hoists for certain specific pieces of equipment. To further address this concern, LILCO will provide for review by SC consultants the following documentation demonstrating maintainability and ALARA in equipment design for removal or repair and operation:

- (a) Charter for the GE maintainability study;
- (b) Summary of S&W maintainability study dated February 2, 1981, and the results for the six areas of discussion, which include MSIVs, CRD removal area (including recirculation pumps and piping), upper drywell area, fuel pool cooling and cleanup pumps, radwaste collector tank pumps, and RWCU heat exchangers;
- (c) Examples of Maintainability Task Force ("MTF") initiated plant design changes;

- (d) Charter for the ALARA Task Force ("ATF");
- (e) ATF criteria for review; and
- (f) Specific examples of changes in design resulting from ATF review.

Based on a review of these data, SC consultants may provide recommendations to LILCO for additional actions to further reduce doses to workers. LILCO will review any such recommendations in good faith and implement them if appropriate. LILCO shall advise SC of its actions on SC recommendations and its reasons for the actions which it takes.

6. The Use of Cobalt-Bearing Materials

SC is concerned about the use of cobalt-bearing materials at Shoreham. Materials containing cobalt produce long active half-life corrosion products that accumulate in the plant, resulting in an increase in plant radiation. Therefore, cobalt-bearing materials should be avoided where possible to reduce long half-life activation products.

LILCO has done the following:

- It has included in SP 61.071.05, "ALARA Review of Station Procedures and Design Modifications," a requirement to evaluate use of materials that may reduce the formation of activated corrosion products.
- LILCO will take into account the disadvantages of using cobalt-bearing materials when LILCO makes decisions concerning spare parts. This consideration is ensured by a requirement in SP 12.019.01 "Spare-parts Procurement."

These actions resolve the SC concern.

7. Condenser Design at Shoreham

SC is concerned that radioactive crud which collects on the condenser surfaces at Shoreham can contribute to unnecessary worker exposures. Much of this radioactive crud has the potential to build up at the inlet connections on the condenser shell. One EPRI study recommended adding a dump tank to collect all the lines before they enter the condenser to lessen this potential problem.

Upon review of Shoreham's condenser design, it has been determined that, if the dump-tank concept were to be used at Shoreham, many dump tanks would be required. This is due to system design requirements and restrictions on piping. In addition, space allocations would result in less than optimum dump-tank locations, and the installation of additional piping for routing purposes, venting and draining would further complicate the design.

Accordingly, SC consultants agree that the addition of dump tanks at Shoreham would not reduce worker doses.

8. Water Chemistry Procedures

SC is concerned that LILCO has failed to implement water chemistry procedures that could minimize corrosion products at Shoreham. For BWRs, increases in annual exposures are the result of increases in radiation fields, which, in turn, are due in part

to the accumulation of activated corrosion products. Thus, any significant reduction in the accumulation of activated corrosion products can lead to improved ALARA results.

Reduction of activated corrosion products can be accomplished by implementing an effective water chemistry control program. An effective water chemistry control program consists of procedures to keep plant water conductivity, as well as pH and oxygen levels, within prescribed limits.

LILCO has provided for review by SC consultants the specific water chemistry procedures proposed for Shoreham. Based on this review and lengthy discussion with LILCO's personnel concerning water chemistry practice, principles and philosophy, SC consultants' concern has been narrowed. One remaining issue is whether Shoreham's program for oxygen control is consistent with the programs, procedures, and equipment of GE's NEDO-23631, "BWR Coolant Oxygen Control." A second issue is whether ALARA objectives are included in the water chemistry procedures and in the radiochemist technician training program.

In response to these SC concerns, LILCO will do the following:

- It will conduct a review of oxygen control methods and procedures at Shoreham relative to those outlined in the NEDO document and will document the rationale for choosing Shoreham's methods of controlling oxygen from among those outlined in the NEDO report in

Appendix A, Sections 2.1, 2.2, 2.3, 2.4, 2.6, 4.1, 4.2 and 4.7. LILCO agrees to continue in the future to investigate other oxygen control methods which come to its attention.

- LILCO will modify SP 71.002.01, "Radiochemistry Section Policy and Objectives," to reflect ALARA goals and objectives, as requested by SC consultants after their review of the procedure.
- LILCO will provide to SC consultants (and modify, if necessary) those sections of Shoreham's radiochemist technician training program that include the impact of water chemistry on maintaining ALARA.

Based on the foregoing commitments, this concern is resolved.

9. Specific Measurement System

SC is concerned that Shoreham's radiation protection program fails to include a specific measurement system. SC believes that such a system is important to maintaining ALARA and is outlined in Regulatory Guide 8.8, Sections 1(b) and 1(c).

LILCO has done the following:

- It has included a specific measurement system in Shoreham's program. This system is implemented by specific plant section (i.e., operations, maintenance) through SP 61.071.03 "ALARA Goals and Measurement" and will be further implemented for each individual job or component through the ALARA tracking system now under development.

- LILCO has included in Section 8.8 of SP 61.071.03, "ALARA Goals and Measurement," objectives of an ALARA review to be performed by the ALARA Review Committee ("ARC") on a regular basis. Recommended corrective actions are to be provided by the ARC to the Plant Manager, Vice President-Nuclear, and the Nuclear Review Board ("NRB").
- LILCO has included the setting of specific numerical goals by management through SP 61.071.03, "ALARA Goals and Measurement."

Based upon these commitments, this concern is resolved.

10. Health Physics Technicians on Each Shift

SC was concerned at the time it filed its SC Contention 26 testimony on May 4 that LILCO had decided not to assign health physics technicians to each shift operating crew. LILCO has now agreed to assign health physics technicians to each shift operating crew. LILCO will prepare an FSAR update to modify FSAR Section 13.1.2.4 to reflect this change. Accordingly, this concern is resolved.

11. Radiation Protection Program Audit

In its May 4 testimony, SC was concerned that the Shoreham radiation protection program was not fully developed. SC believes that a detailed review by experienced outside consultants, once the program is nearly completed, is necessary to ensure that an adequate program will be implemented at Shoreham.

In response to this SC concern, LILCO has done the following:

- LILCO has explained that the development of a health physics ("HP") program at Shoreham began in 1975. During the early stages (first four years), NUS Corporation monitored the progress of the program. During the past year, with the HP program essentially complete, HP representatives from the NRC, ANI, and INPO have audited, appraised and reviewed the Shoreham HP program. In addition, an experienced Health Physicist from Environmental Hazards Management has been assisting in the fine tuning of the plant HP program full time since November 1981.

- LILCO will promptly provide SC consultants with these audits. If, after reviewing them, SC thinks that an inadequate review has been conducted in an area related to ALARA, or, if SC believes that LILCO has not made appropriate responses to audit ALARA recommendations, SC will recommend additional consideration of the issue(s). LILCO agrees to review any such recommendation, and, if it is reasonable, to implement the recommendation or to have an additional audit of relevant ALARA issue(s) performed.

12. Reporting Chain of the Health Physics Engineer

SC is concerned about the reporting chain of the radiation protection manager. At some facilities, the radiation protection manager does not report directly to the station manager and this has apparently impaired the quality of radiation protection at those plants.

In response to this concern, LILCO has documented that the Health Physics Engineer at Shoreham reports to the Plant Manager through the Chief Technical Engineer. The HP Engineer, however, has direct access to the Plant Manager to resolve health and safety matters, and the HP Engineer can halt immediately any operation he deems unsafe. LILCO has provided SC consultants with SP 61.001.01, "Health Physics Program--Policies and Objectives," which describes the reporting chain of the Health Physics Engineer. Based upon the foregoing, this concern is resolved.

13. Radiation Exposures

SC believes that a provision should be included in Shoreham's ALARA program to require further ALARA actions when some absolute value of radiation exposure is achieved. LILCO has responded to the substance of this concern by including in SP. 61.071.03, "ALARA Goals and Measurements," a provision that the Health Physics Engineer at Shoreham will prepare a yearly ALARA report which will be reviewed by the ARC. The ARC will recommend corrective actions in the event radiation levels exceed those levels determined for designated shield design zones. In addition, the ARC will compare the total man-rem experienced at Shoreham on an annual basis to the annual doses at all other Mark II operating plants. If the total at Shoreham exceeds the average by 25% (the averages to be adjusted, as appropriate, for increased exposures due to refueling or other

major activities) for two consecutive years, the ARC will convene and recommend corrective actions to the NRB. Based on the foregoing, this concern is resolved.

14. Flushing Decontamination

SC has expressed concerns in SC Contention 26 relative to provisions for flushing or decontamination at Shoreham. In response to Suffolk County interrogatories items 69 and 70, LILCO provided sufficient information to satisfy SC concerns relative to flushing and decontamination. LILCO's criterion for flushing or decontamination procedures is maintaining doses ALARA. The bases on which these procedures are to be implemented are dictated by the particular conditions existing for specific components when a maintenance task must be performed, the nature of the task, and an assessment of the effects of flushing or decontamination. The systems that have taps for flushing purposes are the main recirculation system, the RWCU system, radwaste filter systems, and the fuel pool clean-up system. The RWCU system has complete flushing capability, including taps. Radwaste systems have flushing capability, including taps around all pumps and filters. The condensate system does not have taps for flushing because this function is continuously performed during normal operation. Based on the foregoing, this concern is resolved.

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Counsel for (Date)
LONG ISLAND LIGHTING COMPANY

Karla Litsche 9/10/82
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SUFFOLK COUNTY

Bernard M. Bordenich 9/3/82
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STAFF

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))

PARTIAL RESOLUTION OF SC CONTENTION
27/SOC CONTENTION 3 -- REGULATORY GUIDE 1.97

Suffolk County Contention 27/SOC Contention 3 alleges that Shoreham does not comply in 11 specified areas with the instrumentation requirements for monitoring and assessing plant and environs variables and systems during and following an accident, as set forth in Regulatory Guide 1.97, Revision 2. By prior agreement dated June 11, 1982, SC Contention 27(c)/SOC Contention 3(c) relating to iodine monitoring equipment was resolved and withdrawn by the County and SOC. Such resolution was without prejudice to the right of the County and/or SOC to submit a contention in the emergency planning proceeding to contest the adequacy of the accuracy of iodine monitoring at the Shoreham plant. Suffolk County has submitted such an emergency planning contention.

The parties have further discussed the 10 areas of concern remaining in SC Contention 27/SOC Contention 3 and have agreed to the following resolution of five of the concerns expressed in the contention:

(1) Part (b) of SC Contention 27/SOC Contention 3 involves the Regulatory Guide 1.97, Revision 2, requirement for instrumentation to monitor radioactivity concentration in the circulating primary coolant for the purpose of detecting breach of the fuel cladding.

Part (e) of SC Contention 27/SOC Contention 3 involves the Regulatory Guide 1.97, Revision 2, requirement for instrumentation to monitor, by sampling, reactor coolant system soluble boron concentration for the purpose of verifying that plant safety functions are being accomplished.

Part (f) of SC Contention 27/SOC Contention 3 involves the Regulatory Guide 1.97, Revision 2, requirement for instrumentation capable of analyzing the primary coolant gamma spectrum for the purposes of mitigating a breach of the fuel cladding and to verify and monitor the presence of fission products in the primary coolant.

Part (j) of SC Contention 27/SOC Contention 3 involves the Regulatory Guide 1.97, Revision 2, requirement for accident sampling and analysis capability onsite for the purposes of assessing, verifying and analyzing releases during and following an accident.

LILCO has provided Suffolk County and SOC with information, in addition to that contained in FSAR Section II.B.3, describing certain additional equipment which will be installed in the Shoreham post accident sampling facility (See Attachment 1), ^{1/} including systems for monitoring boron, chloride and dissolved oxygen concentrations in the coolant. Based upon a review of this information and additional discussions between LILCO and Stone & Webster representatives and County technical consultants concerning the capabilities of such equipment to meet the range, timing, and qualification requirements of Regulatory Guide 1.97, Revision 2, the County and SOC have determined that LILCO's installation of such equipment will resolve the concerns expressed in parts (b), (e), (f), and (j) of SC Contention 27/SOC Contention 3.

(2) Part (i) of SC Contention 27/SOC Contention 3 involves the Regulatory Guide 1.97, Revision 2, requirement for portable instrumentation to measure and analyze plant and environs radiation for the purpose of assessing and analyzing releases during and following an accident. FSAR Section 12.5.2.2.2 includes a general description of portable radiation

^{1/} In addition to the information included in Attachment 1, LILCO provided copies of all or portions of the following: Orion Model 1610 Boron/PH Detector Preliminary Instruction Manual, Model 2001 Preamp Specifications, Orion Model 1617 Chloride Detector Preliminary Instruction Manual, Model 2713 Dissolved Oxygen Measurement System and a system description of the ion chromatograph.

monitoring equipment to be used at Shoreham. LILCO has provided Suffolk County and SOC with additional information which includes a more detailed description of the portable radiation monitoring equipment which has been ordered by LILCO (See Attachment 2). Based on a review of this information and additional discussions between LILCO and Stone & Webster representatives and County technical consultants concerning the environmental qualification of the portable radiation monitoring equipment and details of the equipment's compliance with Regulatory Guide 1.97, Revision 2, requirements, Suffolk County and SOC have determined that LILCO's acquisition and deployment of such equipment will resolve the concerns expressed in part (i) of SC Contention 27/SOC Contention 3.

LILCO agrees that the equipment described above and in Attachments 1 and 2, which equipment relates to parts (b), (e), (f), (i) and (j) of SC Contention 27/SOC Contention 3, will be fully installed and operable, and personnel trained in its use by June 1, 1983.

Based upon the foregoing, Suffolk County and SOC withdraw parts (b), (e), (f), (i), and (j) of SC Contention 27/SOC Contention 3, subject to the following conditions:

(a) LILCO will provide Suffolk County and SOC with reasonable notice of any and all meetings to be held with the NRC Staff for the purpose of discussing scheduling or

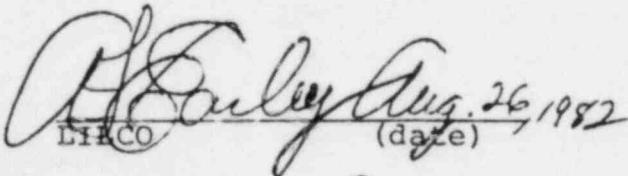
implementation of compliance with Regulatory Guide 1.97, Revision 2 for those items covered by SC 27/SOC 3, and will provide Suffolk County and SOC with copies of all correspondence between LILCO and the NRC Staff concerning such matters;

(b) Suffolk County and SOC will be entitled to have representatives attend as observers any and all meetings attended by LILCO and the NRC Staff concerning the scheduling or implementation of compliance with those items of Regulatory Guide 1.97, Revision 2 covered by SC 27/SOC 3; and

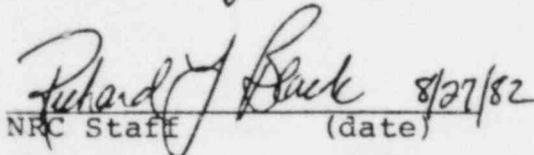
(c) LILCO's obligation to provide Suffolk County and SOC notice of meetings discussing scheduling or implementation of compliance with Regulatory Guide 1.97, Revision 2 and copies of all correspondence concerning such matters shall end two years from the date of this agreement.

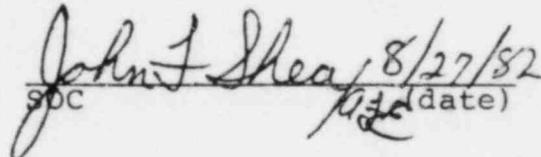
It is understood that the remaining parts of SC Contention 27/SOC Contention 3 (parts a, d, g, h, and k) are not resolved by this Partial Resolution.

Respectfully submitted,


LILCO (date) Aug. 26, 1982


Suffolk County (date) Aug 26, 1982


NRC Staff (date) 8/27/82


SOC (date) 8/27/82

(e) Reactor Coolant
System Soluble
Boron

(f) Analysis of Primary
Coolant
Gamma Spectrum

(j) Post Accident
Sampling
Capability

Item No.

TYPE
Grab Sample Gas
 Liquid

X

X

Gross Activity

X

Gamma Spectrum

X

X

Boron Content

X

X

Chloride Content

X

Total Gas

X

Dissolved Oxygen

X

PH

X

ATTACHMENT 1

Post Accident Sample System (PASS)

Instrumentation Description

Post Accident Sampling System has been implemented to comply with Reg. Guide 1.97 and NUREG-0737. A description of instrumentation is as follows:

1. Grab sample capability -- any liquid or gas that is analyzed on line by the PASS can additionally have a grab sample taken. The grab sample flask and sampling system capability is designed such that the flasks removal from the system will not cause any release of sample to the environment. The grab sample container is designed for any form of radioactive service as well as being a direct sample for Gamma spectrum analysis.

The sample flasks are manufactured by the LILCO site and can be produced in any quantity.

2. Gross Activity -- the gross activity of all samples in the PASS system is measured by a Victoreen 847A-1 monitor. There are three monitors; (a) liquid sample, (b) atmospheric sample and (c) gas evolved from liquid monitor. These monitors are 8 decade monitors (.1 mr to 10^7 mr) and reside side by side in a 4 ft shield configuration.

They can be used to:

- (a) determine if a representative sample is in the PASS system (reading plateaued and stabilized after recirculation time is complete);

- (b) determine gross activity of the sample (direct reading);
- (c) used in performing dilution operation (i.e. feed and bleed by plateauing and stabilization to a desired level and determination of fixed volume dilution effectiveness);
- (d) determination of full system flush for system clean-up. Should the "observed" portion of tube become contaminated to the point where spectrum analysis is compromised a full system flush is performed and that segment of tube can be easily replaced, thus restoring full capability.

The detector and shield are presently installed in the post accident sample building.

3. Gamma Spectrum -- The device used to count the iodine samples for the station vent monitor (1D11*PNL-126) is a gamma-ray spectrometer. A gamma-ray spectrometer is a device which detects and counts gamma-rays as a function of energy. The signal chain consists of a Ge (Li) detector, a preamplifier, an amplifier, an analog to digital converter (ADC), and a memory device.

Each gamma emitting isotope emits gamma-rays with a unique set of energies (a "fingerprint"). The isotopes present in a radioactive sample may be determined by associating the energies of the observed emissions with a table of radioisotopes and their known gamma emission energies.

The number of counts in a given channel is the number of detected photons of the energy which corresponds to this particular channel. As in any other nuclear counting application, the number of counts is proportional to the quantity of activity present in the sample.

A thorough treatise on gamma spectroscopy can be found in Radiation Detection and Measurement by Glenn F. Knoll.

a) Brief Description -- The PASS gamma spectrometer is a Canberra Industries, Jupiter System consisting of the following individual components:

- 1 Canberra Hyperpure Germanium (HpGe)
- 1 Canberra Model 2001 preamplifier
- 1 Canberra Model 8623 PHA/LTC (Amplifier/ADC) unit
- 1 Canberra Series 80 MCA
- 1 DEC PDP-11/34 computer
- 1 DEC RL01 Hard Disk Drive unit

The detectors, preamplifiers, and model 8623 units comprise two parallel signal chains which feed the single Series 80 multi-user microprocessor based (Intel 8080A) multichannel analyzer. The DEC PDP-11/34 provides greater versatility of control, more sophisticated spectral analyses, and more convenient data storage and retrieval than the stand alone Series 80. The disk drives provide greater storage capacity. Detector specifications are efficiency $\geq 10\%$ at 1.33 MeV, and resolution ≤ 1.9 KeV FWHM. Appendices 1 and 2 contain the specifications on the model 2001 Preamplifier and model 8623 PHA/LTC, respectively.

In addition to the above hardware, a software package has been purchased from Canberra Industries. This software, when run on the PDP-11/34, may be used to perform system calibrations, spectral analyses, and quality assurance measurements. The calibration and analysis programs are contained in a package called SPECTRAN-F. Correction for decay during the counting period is accounted for in the Canberra software.

ANSI N42.14-1978 established methods for calibration and usage of germanium detectors for the measurement of gamma-ray emission rates of radionuclides. It covers the energy and full-energy peak efficiency calibrations as well as the determination of gamma-ray energies in the 0.06 to 2 MeV energy region. ANSI N42.14-1978 is to be used as a general guide in procedure preparation and performance assessment. Calibrations are to be performed with NBS traceable standards.

In addition to this, the normal counting room gamma spectrometer system is available. It consists of the following equipment:

- 2 Canberra Ge(Li) detectors with liquid N₂ dewars
- 2 Canberra Model 2001 preamplifiers
- 2 Canberra Model 8623 PHA/LTC (amplifier/ADC) units
- 1 Canberra Series 80 MCA
- 1 DEC PDP-11/34 computer
- 2 DEC RL01 Hard Disk Drive Units
- 1 DEC RX02 Floppy Disk Dual Drive Unit

b) Ranges -- Gamma spectral analysis equipment of the type we own is very sensitive for detecting radioactivity. Due to this, samples with high activity concentrations must be diluted before being introduced to the instrument. The post-accident sample panel is used to provide a diluted sample with the dilution factor known. Using this scheme, the range in Reg. Guide 1.97, $1 \mu\text{Ci/gm}$ to 10 Ci/gm , can be measured by the purchased equipment. The sample flask is introduced directly into the detector shield and counted directly.

c) Accuracy -- The documentation for the radioactivity standard used to prepare the calibration sources gives the overall uncertainty in the emission rate as typically less than 3%; however, for certain gamma-rays it is as high as 3.8%.

This standard is then diluted further and small aliquots taken to make new standards. Even considering the error inherent in preparing new standards, the estimated error in the calibration source will not exceed 4%.

The variance in NBS traceable sources is $\pm 5\%$.

The error in the reproducibility in the determination of the net full-energy peak counts is $\pm 3\%$.

The error in the reproducibility of the positioning of the source relative to the detector and source geometry is estimated at $\pm 3\%$.

In testing the installed SNPS gamma-spectrometer in the normal counting room it has been found that in the low energy

region (below 279 KeV) the efficiency changes rapidly with energy and that the accuracy of the efficiency calibration should be taken to be approximately $\pm 9\%$, while above 279 KeV the uncertainty is approximately $\pm 6\%$. The PASS equipment is expected to behave similarly.

The accuracy of the live-time determinations and pile-up corrections is $\pm 2\%$.

Calibration error	4%
	5%
Poisson distribution error (high count rates)	0.5%
Reproducibility of Peak Area	3%
Positioning of Sample	3%
Determination of Efficiency	6%
Live-Time Pile-Up uncertainty	2%

The total expected error is given by:

$$\text{Expected Error} = 4^2 + 5^2 + 0.5^2 + 3^2 + 3^2 + 6^2 + 2^2 = 10\%$$

(d) Status -- The equipment described was ordered in the fall of 1981. It was shipped from Canberra Industries to a warehouse early this year. We released the equipment for shipment to the plant recently where it will be stored until installation is possible in the construction schedule.

4. Boron Content:

- (a) Boron instrument is a Model 1610 analyzer by Orion Research,
- (b) Instrument description is covered in the attached preliminary operation manual,

- (c) Range 100 to 1000 ppm boron,
- (d) Accuracy \pm 10%,
- (e) Status of implementation installed at site awaiting final hookup in system.

5. Chloride Content:

- (a) The chloride instrument is a 2110i Ion Chromatograph by Dionex,
- (b) Instrument description is covered in the attached catalog cut,
- (c) Range 0 to 20 ppm chloride,
- (d) Accuracy \pm 5%,
- (e) Status of implementation -- chromatograph on order, scheduled to arrive on site in under 4 weeks.

6. Total Gas:

- (a) Total gas analyzer was designed by Stone and Webster Engineering Corporation and constructed on site,
- (b) The analyzer uses gas expansion as a means of determining total gas content. A liquid sample, under pressure, is trapped in a flask. The samples' pressure and temperature is recorded. The sample is allowed to expand into a previously evacuated flask where again the temperature and pressure is recorded. By utilizing the pressure of gas (final) the amount of total gas in the system can be correlated to the final pressure,
- (c) Range 2000 cc/kg,

- (d) Accuracy \pm 10%,
- (e) Status - installed.

7. Dissolved Oxygen:

- (a) Dissolved O₂ instrument is a Model 2713 analyzer by Orbisphere labs,
- (b) Description is covered in the attached catalog cut,
- (c) Range 1ppb to 19.99 ppm oxygen,
- (d) Accuracy 4% or \pm 1 ppb throughout the range,
- (e) Status -- onsite awaiting final hookup to system.

8. PH

- (a) PH instrument is an integral part of Orion 1610 Boron/PH analyzer,
- (b) Instrument description is covered in preliminary operations manual,
- (c) Range 1 to 13 PH,
- (d) Accuracy \pm 10%,
- (e) Status installed at site awaiting final backup into system.

Plant and Environs Radiation (Portable Instruments)(a) Types of Instrument

FSAR Section 12.5.2.2.2., paragraphs 3 and 4 describe briefly the types of portable dose rate instruments planned for Shoreham, and the numbers of these instruments to be on site by fuel load. The combination of ion chamber and Geiger-Mueller (GM) dose rate instruments used to satisfy the FSAR will meet the Reg. Guide 1.97 requirement with the addition of a high range ion chamber style instrument.

(b) Brief Description

The ion chamber instruments to be used are the Eberline RO-2, RO-2A, RO-4A, RO-4B and RO-7. The first four instruments are of the Juno style, while the RO-7 is a Cutie-Pie type instrument with interchangeable probes which can be used at the end of a cable up to 500 feet remote from the readout unit. Brief descriptions of the instruments are contained in Appendices 1 through 3.

The GM instruments to be used are the Eberline Teletector. This consists of an instrument body with a meter or LCD readout (we have both) and a GM tube at the end of a 13 feet long telescoping pole. A description of this instrument is Appendix 4.

(c) Ranges

The ranges are as shows on the description sheets. These are:

RO-2 meter reads 0 mR/hr to 5 R/hr

RO-2A meter reads 0 mR/hr to 50 R/hr

RO-4A LCD reads 0.1 mR/hr to 200 R/hr

RO-4B LCD reads 0.1 mR/hr to 2 R/hr

RO-7 LCD reads 0.1 mR/hr to 20,000 R/hr

Teletector [LCD reads 0.1 mR/hr to 1,000 R/hr
[Meter reads 0 mR/hr to 1,000 R/hr

(d) Accuracy

These are high quality instruments which will be calibrated in accordance with station procedures on a well designed calibration device by well qualified individuals. The accuracy of the readings taken with these instruments is $\pm 10\%$ of the actual value.

(e) Status

The FSAR (Section 12.5.2.2.2.) requires 24 ion chamber and 8 GM type dose rate instruments be available on-site at fuel load. We are working toward that requirement. The current status of instrument availability is as follows:

	<u>In Service</u>	<u>In Stores</u> <u>On-Site</u>	<u>On Order</u>
RO-2	4	12	6
RO-2A	1	2	4
RO-4A	6	0	0
RO-4B	1	0	0
RO-7	0	0	1
Teletector	2	1	0

Sufficient numbers of instruments will be kept available to support the need for plant and environs release assessment and analysis under accident conditions. Five RO-2 instruments are contained in offsite survey emergency kits. The exact location of this equipment is in the process of being determined as part of LILCO's emergency planning effort. All these will be changed out and calibrated with a frequency which will ensure operable instruments remain available to support accident use. This complement of instruments can be supplemented with the other in-service instru-

ments that will be stored in the Health Physics Office and
the Storeroom in the Machine Shop.

Appendix 1

Description of Eberline RO-2 and RO-2A

MODEL RO-2

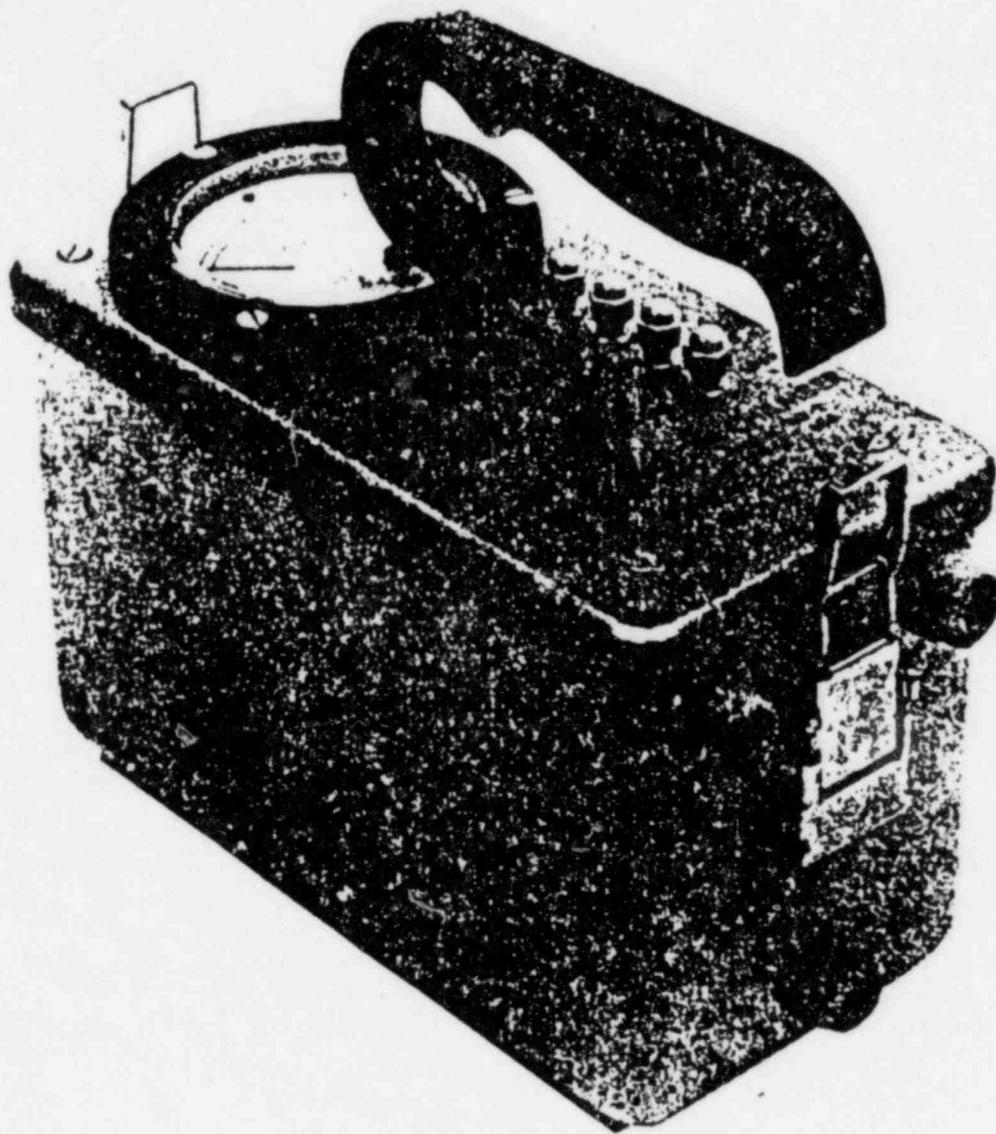


Figure 1-1. Ion Chamber, Model RO-2

MODEL RO-2

SECTION I GENERAL

A. PURPOSE AND DESCRIPTION

The Ion Chamber, Model RO-2, is a portable air ion chamber instrument used to detect beta (β), gamma (γ) and x-ray radiation. The RO-2 has four linear ranges of operation to measure dose rate for x-ray and γ radiation. The ion chamber is vented to atmospheric pressure and is specifically designed to have flat energy response into the x-ray region. The Model RO-2 is sensitive to β , γ and x-ray and is calibrated to γ radiation (^{137}Cs). A single rotary switch turns the instrument off, provides a battery check, checks the zero setting and selects the range of operation.

B. SPECIFICATIONS

1. DETECTOR

- Size: 3-inch diameter, volume 12.7 cubic inches (7.62 cm diameter, 208 cc).
- Fill: Air, vented to atmospheric pressure.
- Wall: One-sixteenth inch phenolic, approximately 200 mg/cm² inside 0.050 inch wall aluminum case.
- Window: Two layers 0.001 inch mylar, approximately 7 mg/cm² total.
- Beta Shield: Sliding shield on bottom of case with positive friction lock. Approximately 400 mg/cm² (1/8 inch phenolic).
- Radiation Detected: Beta, gamma, x-ray.

g. Photon Energy Response: Nominal $\pm 15\%$ from 12 keV to more than 1.3 MeV. (See Figure 1-2.)

h. Example of Beta Response

(1) Uranium Slab: 33% of true mrad/hr field behind 7 mg/cm² window with RO-2 resting on slab, slide open.

(2) ^{90}Sr - ^{90}Y : 75% of true mrad/hr field at 40 cm with slide open, 8% with slide closed.

i. Fast Neutron Response: Reads approximately 10% in mR/hr of true neutron field in mrem/hr.

2. GENERAL

- Ranges: Four linear ranges: 0-5, 5-50, 0-500 and 0-5000 mR/hr.
- Meter: Ruggedized, sealed, 2.38 inch (6.04 cm) scale length, 2% accuracy. Linear markings from 0 to 5 in 25 minor increments.
- Response Time: 5 seconds, 0 to 90% of reading.
- Linearity: Within $\pm 5\%$ of full scale.
- Battery Dependence: No calibration shift with battery voltage change (down to BATTERY check mark on meter).

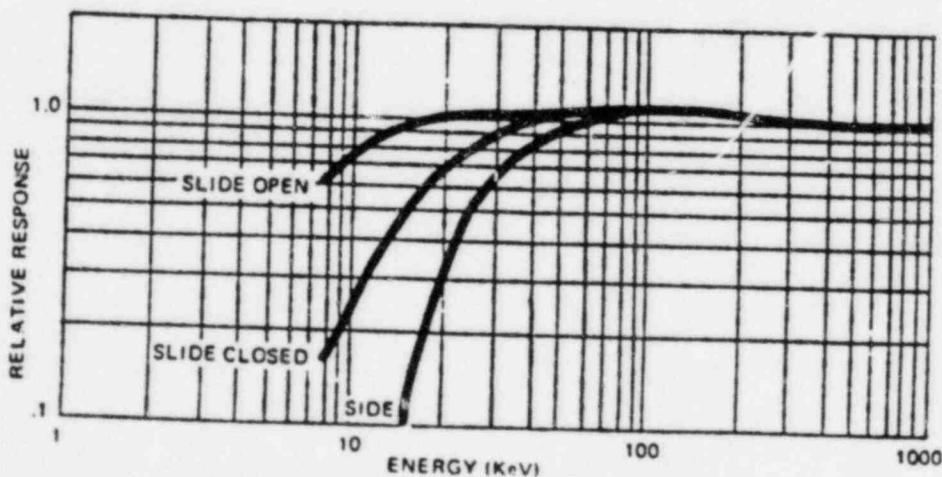


Figure 1-2. Nominal Photon Energy Response

MODEL RO-2

f. Controls

- (1) Range switch with OFF, ZERO and BATTERY checking positions.
- (2) ZERO knob used to set meter to zero when ZERO position of range switch is selected or when in no significant radiation field.
- (3) Calibration controls, one for each range.

g. Batteries

- (1) Type: Three NEDA 1604, 9 V type, 10 to 5.4 V per battery.
- (2) Life: Two batteries approximately 200 hours CZn, 330 hours alkaline, 330 hours mercury. Third battery life indefinitely long.

h. Environment

- (1) Temperature: Operable from -40°F to 140°F (-40°C to 60°C). (Operation at low temperatures may be limited by battery performance.)
 - (2) Moisture: Seals used at openings for dust and water resistance. Detector is protected by a silica-gel drying box.
 - (3) RF Sensitivity: Reading unaffected by radar fields up to 20 mW/cm².
- i. Weight: Approximately 3.8 pounds (1.7 kg), including CZn batteries.
 - j. Size: 3-15/16 inches wide x 8-5/16 inches long x 7-7/16 inches high (10 x 21.1 x 18.9 cm), including handle.

Manual Insert:

RO-2A

This insert sheet and the RO-2 Technical Manual comprise the Technical Manual for the RO-2A.

The RO-2A is identical to the RO-2 except that the range of operation has been shifted higher by a factor of ten. The ranges of the RO-2A are 0-50 mR/hr, 0-5 R/hr and 0-50 R/hr.

To effect the change, R1 and R2 have been decreased to 3×10^{11} and 3×10^9 ohms, respectively. Another battery (BT4) has been added in series with BT3 to double the RO-2 chamber voltage, and the front panel markings have been changed to correspond to the new ranges.

In the MAINTENANCE section of the RO-2 manual (page 9, paragraph A, 1), it is noted that when either BT1 or BT2 require replacement they should be replaced with BT3. The new battery should then replace BT3. In the RO-2A this same procedure should be followed, except that either BT3 or BT4 should be used to replace BT1 or BT2, and the new battery should replace the battery removed. BT4 is the battery next to BT2. Viewed from the top the battery lineup is as follows (left to right): BT2, BT4, BT3, BT1.

eberline

P. O. Box 2108, Santa Fe, New Mexico 87501 (505) 471-3232 TWX: 910-985-0678

REF NO. 1263

Appendix 2

Description of Eberline RO-4A and RO-4B

MODELS RO-4 AND RO-5



Figure 1-1. Ion Chamber, Model RO-4A

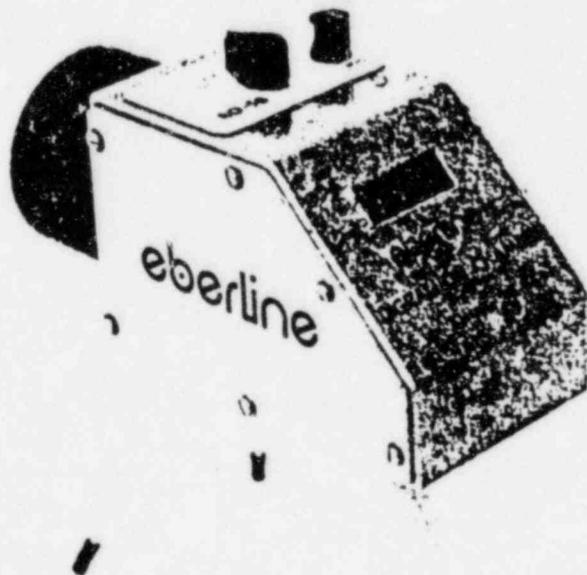


Figure 1-2. Ion Chamber, Model RO-5B

MODELS RO-4_ AND RO-5_

SECTION I GENERAL

A. PURPOSE AND DESCRIPTION

Ion Chambers, Model RO-4_ and Model RO-5_, are portable ion chamber instruments used to detect beta, gamma and x-ray radiation. Both instruments feature 3-1/2 digit, liquid crystal display with switch selected back lighting for low ambient light conditions. The two instruments are very similar in operation and in electronic design, but differ in case design. The RO-4_ is a juno style case, see Figure 1-1, and the RO-5_ is a cutie pie case, see Figure 1-2. Both instruments are available in three configurations: "A" with two dose ranges; "B" and "C" with one dose rate range and one integrate range; thus an RO-4A would be a juno type instrument with two dose rate ranges. The ion chamber in the instruments is vented to atmospheric pressure and is specifically designed to have flat energy response into the x-ray region. Both instruments are sensitive to beta, gamma and x-ray and are calibrated to gamma radiation. A single rotary switch on either instrument turns the instrument off, checks the zero setting and selects the range of operation.

B. SPECIFICATIONS

I. Detector

a. Size: 3 inch diameter, volume 208cc (12.7 cubic inches)

b. Fill: Air vented to atmospheric pressure

c. Wall: One-sixteenth inch phenolic, approximately 200 mgm/cm². For the RO-4_ the detector is enclosed in a .050 inch wall aluminum case. For the RO-5_ the detector has a removable beta shield of approximately one-sixteenth phenolic.

d. Window: RO-4_, two layers of .001 inch mylar, approximately 7 mgm/cm² total; RO-5_, single layer of .001 inch mylar, approximately 3.5 mgm/cm² total.

e. Beta Shield: RO-4_, sliding shield on bottom of case with positive friction lock, approximately 400 mgm/cm² (1/8 inch phenolic); RO-5_, removable shield on front of chamber, approximately 400 mgm/cm² (1/8 inch phenolic).

f. Radiation Detected: Beta, gamma, x-ray

g. Fast Neutron Response: Reads approximately 10% in mR/hr of true neutron field in mRem/hr.

2. General

a. Ranges

1) Configuration "A": High dose rate range; 199.9 R/hr full scale, .01 R/hr least increment. Low dose rate range; 1999 mR/hr full scale, 0.1 mR/hr least increment.

2) Configuration "B": Dose rate range; 199.9 mR/hr full scale, 0.1 mR/hr least increment. Integrate range; 1999 mR full scale, 0.1 mR least increment.

3) Configuration "C": Dose rate range; 199.9 R/hr full scale, .01 R/hr least increment. Integrate range; 1999 mR full scale, 0.1 mR least increment.

4) Each range has one decade of automatic range switching. This effectively doubles the number of switch selectable ranges.

b. Display: Liquid crystal, 3-1/2 digit display with low battery indication. Back light switch for low ambient lighting conditions.

c. Response Time: Approximately 5 seconds, 0 to 90% of reading.

d. Linearity: See Figure 1-3

e. Battery Dependence: No calibration shift with battery voltage change from full battery voltage to low battery indication on display. Batteries monitored automatically when instrument is in operation.

f. Controls - External

1) Range switch with "OFF", "ZERO" and two range positions.

2) "ZERO" knob used to set display to zero when "ZERO" position of range switch is selected or when in no significant field.

3) "LIGHT" switch to turn on display back light when instrument is used in low ambient light conditions.

g. Controls - Internal: Calibration potentiometer for each range.

h. Batteries:

1) Type: Three Neda type 1604, 9 volt batteries and two Neda type 210, 30 volt batteries.

MODELS RO-4_ AND RO-5_

2) Life: Depending on instrument use rate, one 9 volt battery life dependent on use of internal light for illumination of display. The other 9 volt batteries; approximately 200 hours for carbon zinc, 330 hours for alkaline and 330 hours for mercury. Indefinite life for the two 30 volt batteries. Automatic indication on display when batteries are weak.

i. Environment

1) Temperature: Operable from 32°F to 122°F (0°C to 50°C)

2) Moisture: Seals used at openings for dust and water resistance. Detector is protected by a silica-gel drying box.

j. Weight

1) RO-4_: Approximately 3.5 pounds (1.6 kg)

2) RO-5_: Approximately 3 pounds (1.4 kg)

k. Size

1) RO-4_: 3-15/16 inches wide x 8-5/16 inches long x 7-7/16 inches high (10 cm x 21.1 cm x 18.9 cm)

2) RO-5_: 4-1/4 inches wide x 9 inches long x 9-1/2 inches high (10.8 cm x 22.9 cm x 24.1 cm)

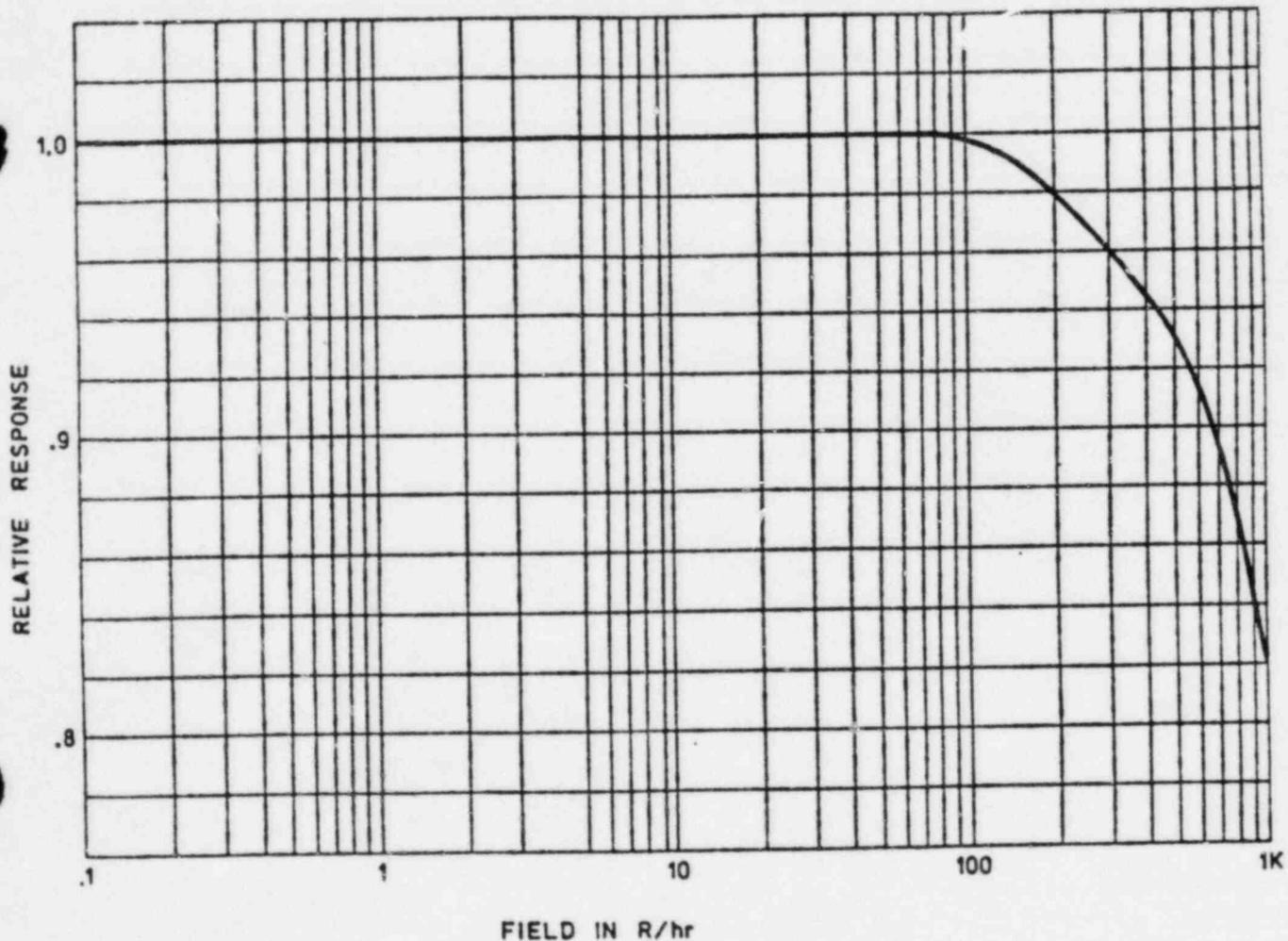


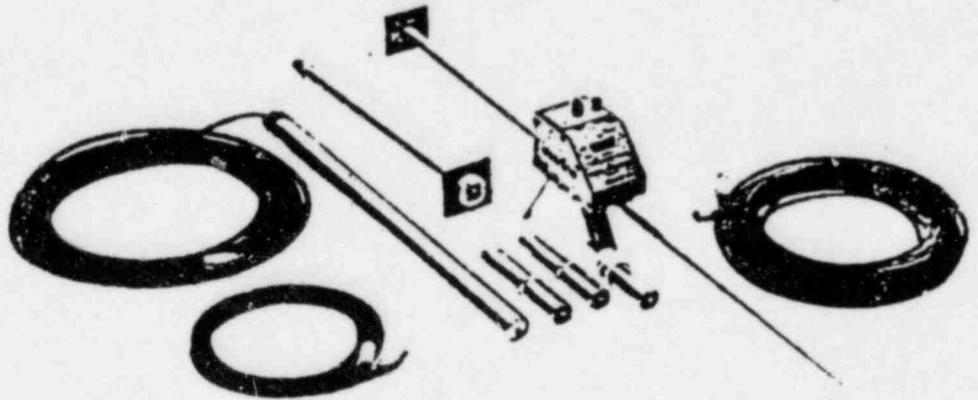
Figure 1-3. Dose Rate Response Curve

Appendix 3

Description of Eberline RO-7

Model RO-7

High Range Survey System



- HIGH RANGE
Up to 20,000 R/h Gamma
Up to 20,000 rad/h Beta
- DIGITAL READOUT
- AUTOMATIC DECIMAL POINT
PLACEMENT
- WATERPROOF PROBE HOUSING
FOR UNDERWATER SURVEYS

Eberline

A DIVISION OF
 **Thermo
Electron**
CORPORATION

RO-7

Model RO-7

GENERAL DESCRIPTION

The RO-7 Survey System has been designed as a multipurpose unit. Detectors are attached to the Digital Readout/Logic Unit for hand held survey applications. The detectors may also be attached via rigid extensions or flexible cables for remote surveys.

Three detectors are available to provide a wide detection range. All three detectors will operate in the RO-7-UWH (Underwater Housing) for pool or other underwater surveys to depths of up to 60 feet.

Standard remote cables are available which permit the detectors to be removed from the Readout/Logic unit. Special cables can extend this remote capability up to 500 feet.

The Intelligent Digital Readout/Logic Unit senses the range of the detector which has been connected and indicates the proper units (R/h, kR/h) and sets the proper decimal point placement on the Liquid Crystal Display (LCD). A blinking arrow on the LCD indicates the connection of the high range detector (RO-7-BH).

The nomenclature assigned to the system components is as follows:

→	Model RO-7	Digital Readout/Logic Unit
	Model RO-7-LD	Low Range Detector, 0 to 1.999 R/h, gamma
→	Model RO-7-BM	Mid Range Detector, 0 to 199.9 R/h, gamma
		0 to 199.9 rad/h, beta
→	Model RO-7-BH	High Range Detector, 0 to 19.99 kR/h, gamma
		0 to 19.99 krad/h, beta
	Model RO-7-C15	Flexible Cable, 15 feet (4.6 meters)
	Model RO-7-C60	Flexible Cable, 60 feet (18.3 meters)
	Model RO-7-RX2	Rigid Extension, 2 feet (0.61 meters)
→	Model RO-7-RX5	Rigid Extension, 5 feet (1.5 meters)
→	Model RO-7-UWH	Underwater Housing with 60 foot cable (18.3 meters)

Indicated items requisitioned.

SPECIFICATIONS

RO-7 READOUT/LOGIC UNIT

Display: Liquid Crystal (LCD), 3½ digits, ½ inch (1.3 cm) high. Includes units, decimal point, minus sign, high range indication, low battery indication. Illumination provided.

LCD Up-Date Time: The reading is up-dated about three times per second.

Response Time: Approximately 2.5 seconds to 90% of final reading on all ranges.

Controls: External: On-Off Switch, Zero Control, Light Control. Internal: Calibration Control, Battery Check.

Battery Complement: Three 9V NEDA 1604, two 30V NEDA 210.

Battery Life: 30V batteries: shelf life. 9V batteries (carbon zinc): 160 hours. Use of display light will shorten battery life. Low battery indication is a colon on the LCD.

Construction: Painted aluminum case.

Size: 9.5 in. (24 cm) high, 4.25 in. (10.8 cm) wide, 9.5 in. (24 cm) long.

Weight: 2.7 pounds (1.2 kg).

Temperature: Operational from +15°F to +130°F (-10°C to +55°C). The LCD will change readings at a slower rate below +25°F.

ALL DETECTORS

Power Input: Chamber and amplifier voltages provided by the RO-7.

Temperature Range: -20°F to +160°F (-30°C to 70°C).

Temperature Compensation: Detector fully compensated over the temperature range for output accuracy within ±10%.

RO-7-LD LOW RANGE DETECTOR (GAMMA)

Range: 1.999 R/h at full scale. Resolution is 0.001 R/h (1 mR/h).

Ion Chamber: Aluminum housing, plastic lined, vented to atmosphere. Aluminum housing thickness, nominally 0.060 inch (1.5 mm). Phenolic liner thickness nominally ¼ inch (3.2 mm). Chamber dimensions, 1 inch diameter x 4 inches long (2.5 cm x 10 cm). Chamber sensitive volume: 50 cm³.

Detector Dimensions: 1½ inch diameter (3.8 cm). 7.8 inch body length, (19.8 cm). Overall length, 8.2 inches (20.8 cm).

Weight: 0.58 pounds (0.26 kg).

RO-7-BM MID RANGE DETECTOR (BETA/GAMMA)

Range: 199.9 R/h at full scale. Resolution is 0.1 R/h (100 mR/h).

Ion Chamber: Aluminum housing, plastic lined, thin entry window, vented to atmosphere. Aluminum housing thickness nominally 0.060 inch (1.5 mm). Phenolic liner thickness nominally 1/8 inch (3.2 mm). Chamber dimensions, 1 inch diameter x 0.6 inches long (2.5 cm x 1.5 cm). Entry window, one inch (2.5 cm) diameter x 0.002 inch (0.05 mm) thick mylar. (Approximately 7 mg/cm²). Chamber sensitive volume: 7 cm³.

Beta Response: When the detector is calibrated with ¹³⁷Cs, the difference in the readings with the beta shield off and on is multiplied by 1.1 to convert the observed readings to rad/h beta. This beta factor is based upon calibration to a ⁹⁰Sr-⁹⁰Y source. The beta factor ranged from 1.0 at 11cm from the source, to 1.2 at 50cm from the source. The beta factor ranges from 1.0 to 2.0 for most beta emitters.

Beta Shield: Friction held plastic cap, approximately 1000 mg/cm² over beta window.

Dimensions: Basic detector, 1 1/2 inches (3.8 cm) diameter x 4.2 inches (10.7 cm) body length, 4.6 inches (11.7 cm) overall length. The beta shield is 1.6 inches (4.1 cm) long, 1 1/4 inches (4.8 cm) maximum diameter and adds 0.4 inch (1 cm) to the overall length.

Weight: 0.48 pounds (0.22 kg) with shield. Without shield, 0.39 pounds (0.18 kg).

RO-7-BH HIGH RANGE DETECTOR (BETA/GAMMA)

Range: 19.99 kR/h at full scale. Resolution is 10 R/h.

Other specifications same as for RO-7-BM.

RO-7-UWH UNDER WATER HOUSING

Maximum Depth: Sixty feet (18.3 meters).

Materials: Stainless steel. Joint sealed with two O-rings and cable sealed with two rubber glands.

Wall Thickness: 1/8 inch (1.6 mm) in ion chamber region.

Dimensions: 1 1/4 inches diameter x 30 inches (4.5 cm x 76 cm).

Weight (excluding cable): 6.13 pounds (2.8 kg).

Cable: Length, 60 feet (18.3 m). Weight, 6 pounds (2.7 kg).

CABLES

RO-7-C15: 15 feet (4.6 m), 1 1/2 pounds (0.7 kg).

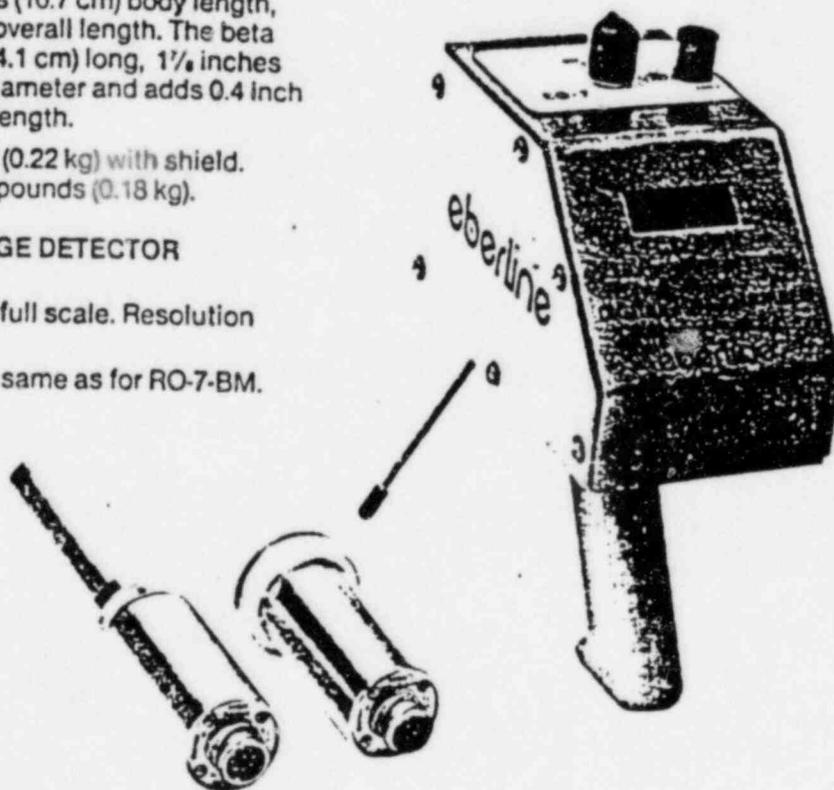
RO-7-C60: 60 feet (18.3 m), 6 pounds (2.7 kg).

RIGID EXTENSIONS (ALUMINUM)

Tube O.D., 1 inch (2.5 cm). Mounting flange, 3.5 inches (8.9 cm) square.

RO-7-RX2: 2 feet (61 cm), 0.82 pounds (0.37 kg).

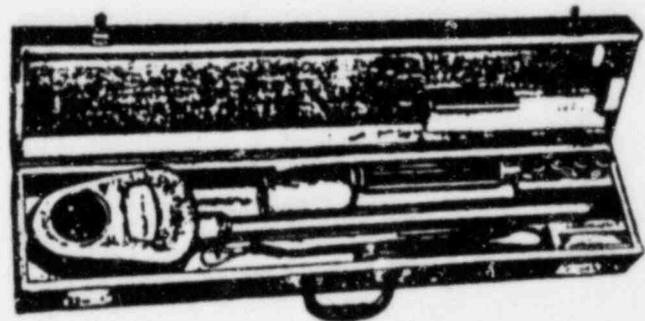
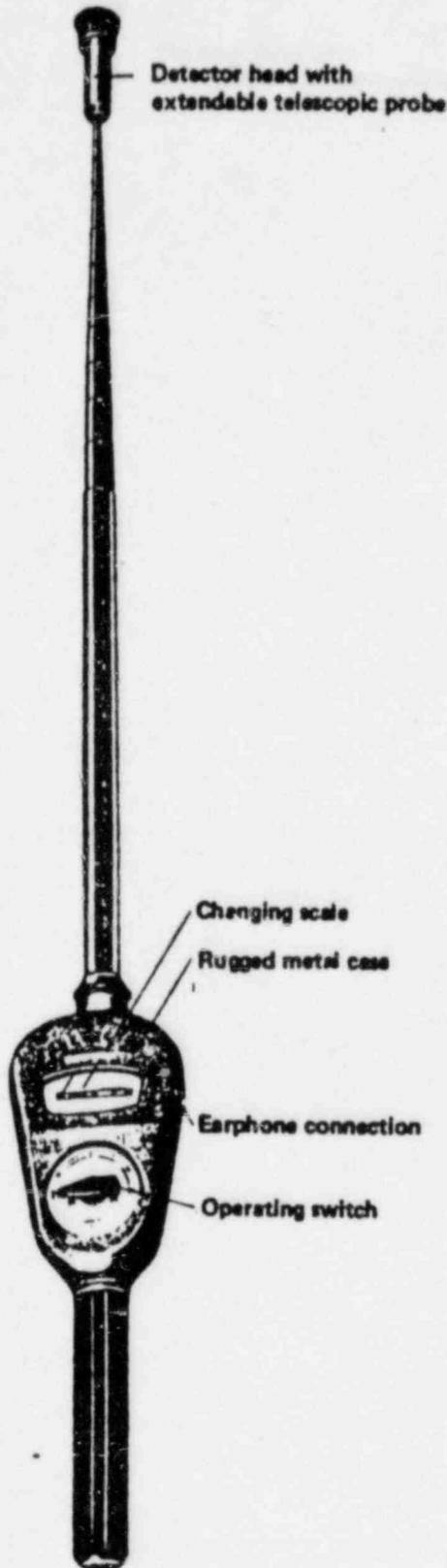
RO-7-RX5: 5 feet (1.5 m), 1.4 pounds (0.64 kg).



Appendix 4

Description of Eberline Teletector

Portable Gamma Dose Rate Meter with Telescoping Probe The Teletector Model 6112



WIDE RANGE OF 0.1 mR/hr TO 1000 R/hr ON 5 SCALES
TELESCOPING PROBE EXTENDS OVER 13 FEET (4 m)
EXCELLENT ENERGY RESPONSE
NON-SATURATING TO AT LEAST 3×10^4 R/hr
ILLUMINATED, SCALE-CHANGING METER FACE
PROBE WILL OPERATE UNDER WATER
OPERATES OVER A WIDE TEMPERATURE RANGE
USES STANDARD C BATTERIES

eberline

Portable Gamma Dose Rate Meter with Telescoping Probe, The Teletector Model 6112

GENERAL DESCRIPTION

The TELETECTOR Model 6112 is a lightweight portable, battery-operated, gamma dose rate instrument with the additional capability of detecting beta radiation. Its wide range, telescoping probe, rugged and waterproof construction, and scale-changing characteristics make the 6112 an extremely versatile tool for radiation monitoring.

The TELETECTOR is complete with earphone, batteries, storage and carrying case, shoulder strap, manual, two probe sheaths and is calibrated with ^{137}Cs . One year warranty is included except for batteries and GM tubes.

SPECIFICATIONS

DETECTORS: Amperex 18529 and 18504 GM tubes or equal.

RANGES, FULL SCALE: 2 mR/hr; 50 mR/hr; 2 R/hr; 50 R/hr; 1000 R/hr.

BETA DETECTION: Beta window (30 mg/cm^2) included on first three ranges.

TEMPERATURE RANGE: 0°F to 120°F (-18°C to 49°C).

AUDIO SIGNAL: Earphone Connection.

BATTERIES: Four 1.5 volt C cells (Eveready-935, Military BA-42, Mallory Mn-1400 or equivalent).

BATTERY LIFE: 20 -60 hours depending on batteries used.

SCALE-CHANGING: Coupled to operating switch. Proper scale appears as range is selected.

SCALE ILLUMINATION: Automatic when instrument is turned on.

TELESCOPING PROBE: Stainless steel; 20 in. (51 cm) long retracted; 160 in. (4 m) long fully extended; O. D. of detector head $7/8$ in. (2.2 cm).

OVERALL DIMENSIONS: Length 36 in. (91 cm) (probe retracted) 15 ft. 1 in. (4.6 m) (probe extended), Width $5\text{-}1/4$ in. (13.3 cm), Height $3\text{-}1/4$ in. (8.3 cm), Weight 7 lbs. (3.18 Kg). Shipping weight 17 lbs. (7.7 Kg) including carrying case and accessories.

APPLICATIONS

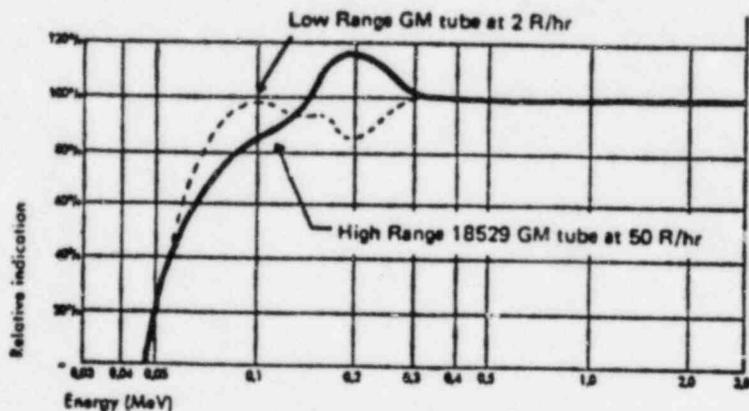
Monitoring irradiated fuel storage and transport — even under water.

Monitoring the removal of irradiated samples from reactors.

Reducing the exposure to personnel when locating and evaluating radioactive sources of unknown strength.

Assessing fire or other physical damage to sources and source storage areas.

A generally useful and versatile tool to have on hand for routine and emergency radiation incidents.



TELETECTOR Energy Dependence

Teletector is a product of Automation und Messtechnik GmbH, sold, serviced and warranted exclusively in the U. S. by Eberline Instrument Corporation.

eberline

P.O. Box 2108, Santa Fe, New Mexico 87501 (505) 471-3232 TWX: 910-985-0678

LILCO, August 24, 1982

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))

Stipulation Regarding SC 27/SOC 3
-- Regulatory Guide 1.97

In the course of discussions aimed at resolving portions of SC 27/SOC 3, the parties could not reach agreement on the effect of SECY-82-111 on the provisions in Regulatory Guide 1.97, Revision 2, regarding fixed radiation monitors and BWR thermocouples. These issues are the subject of SC 27/SOC 3 (a) and (k) respectively.

LILCO Position

LILCO believes that it would serve no purpose to litigate the provisions in Regulatory Guide 1.97 regarding fixed off-site radiation monitors and BWR thermocouples at this time. Part (a) of the contention deals, in part, with fixed radiation monitors. As originally issued, Revision 2 of Regulatory Guide 1.97 contained a provision on page 1.97-14 (Item E-11) for

radiation exposure meters. A July 1981 Errata to Revision 2 deferred the implementation of this provision until additional guidelines have been developed. This change to the regulatory guide is also reflected in SECY-82-111. See Enclosure to SECY 82-111 at 13. Moreover, the issue of off-site radiation monitoring will be covered in the litigation of Suffolk County's emergency planning contentions. Consequently, LILCO's compliance with Item E-11, page 1.97-14 should not be pursued here.

Part (k) of this contention deals with BWR thermocouples. While the County and SOC want to litigate the issue of incore thermocouples, LILCO believes two factors mitigate against hearing this issue in the context of Regulatory Guide 1.97. First, there is a close relationship between this issue and the issues raised in SC 3/SOC 8 -- Inadequate Core Cooling. In fact, LILCO's direct testimony on SC 3/SOC 8 specifically addresses incore thermocouples. Second, SECY-82-111, "Requirements for Emergency Response Capability," indicates in LILCO's view that BWR thermocouples are not required by Regulatory Guide 1.97 "pending their further development and consideration as requirements." Enclosure to SEC-82-111 at 13. The Commission has approved SECY 82-111. See Memorandum from Samuel L. Chilk to William J. Dircks, dated July 20, 1982. Thus, although the issue of incore thermocouples will be litigated in SC 3/SOC 8, there is no longer a Regulatory Guide 1.97 issue to be pursued. Consequently SC 27(k)/SOC 3(k) should be withdrawn from the litigation.

Staff Counsel has indicated agreement with LILCO's position.

Suffolk County/SOC Position

Suffolk County and SOC do not believe that SECY-82-111 has removed the requirements for fixed radiation monitors and BWR thermocouples from Regulatory Guide 1.97, Revision 2. Consequently, it is the position of Suffolk County and SOC that it is entirely appropriate to litigate, in the context of SC 27/SOC 3, LILCO's compliance with these provisions of the regulatory guide. SC and SOC do, however, recognize that these issues are closely related to the issues raised in other contentions. In particular, off-site radiation monitoring will be covered in the emergency planning contentions and BWR thermocouples are at issue in SC 3/SOC 8 -- Inadequate Core Cooling. Consequently, Item E-11 of Regulatory Guide 1.97, Revision 2, will not be pursued until the emergency planning contentions are litigated. Also, SC 27(k)/SOC 3(k) will not be pursued until litigation of SC 3/SOC 8.

Stipulation

The parties agree that Item E-11 of Regulatory Guide 1.97, Revision 2 and SC 27(k)/SOC 3(k) will not be pursued during the litigation of SC 27/SOC 3, but rather will be pursued during the litigation of emergency planning contentions and SC 3/SOC 8, respectively. This agreement is without prejudice to LILCO's or the NRC Staff's right to argue during that litigation that the regulatory guide no longer requires fixed radiation monitors or BWR thermocouples.

Respectfully submitted,

Karla Letsche
Counsel for Suffolk County

Anthony J. Bailey Jr.
Counsel for LILCO

John J. Shea III
Counsel for Shoreham Opponents
Coalition

Richard A. Beck
Counsel for NRC Staff

DATED: August 24, 1982

1 JUDGE BRENNER: Regarding Suffolk County 31,
2 on electrical separation, as we discussed on August 27th
3 at transcript pages 9930 to 35, we had some questions
4 and we were not prepared to approve them in the form
5 submitted for the reasons we discussed. And it is our
6 understanding that the parties would discuss our
7 comments and propose solutions, and we would like to
8 check on the status of that endeavor.

9 MR. REVELEY: My understanding, Judge, is that
10 the solutions are still being sought, and we will report
11 back to you as soon as they have been reached, if they
12 are reached. I think, as to Staff involvement in the
13 inspections, sufficient Staff involvement so the Staff
14 would have a position if a dispute later arose between
15 the parties, that aspect has been resolved. I'm not
16 certain that the other two aspects have been resolved as
17 yet. Mr. Lanpher may know more than I do.

18 MR. LANPHER: I think Mr. Reveley's statements
19 are accurate. The one thing I would add was that we
20 provided -- the County raised some concerns concerning
21 the procedures that were being followed in the
22 electrical inspection effort which LILCO is
23 undertaking. We have had some discussions regarding
24 those, and we delivered a letter, I think it was earlier
25 this week, to LILCO to inform Mr. Irwin about detailing

1 the questions we had regarding those procedures, and I
2 assume we will be hearing back from LILCO on that. They
3 only got it this week, so possibly next week we will
4 talk about that.

5 MR. REVELEY: That's right, Judge. I think we
6 can work it out, but it has not yet been worked out.

7 JUDGE BRENNER: All right. And remember our
8 point at the time we made our comments back on August
9 27th, that matters which had to proceed under the
10 agreement should proceed, bearing in mind our comments,
11 so that things would not have to be undone, but on the
12 other hand so that things wouldn't wait.

13 MR. REVELEY: I think progress has been made
14 along the lines that you suggested. It just has not
15 been completed as yet.

16 JUDGE BRENNER: We will await further word
17 from the parties, then. On the ones for which we have
18 not yet received settlement agreements or agreements
19 finally narrowing the contentions, we would also like to
20 hear about the status of them. Let's take Suffolk
21 County 18 first, human factors equipment.

22 MR. REVELEY: Why doesn't Ms. Letsche do it.
23 I think she has a firmer handle on it than I.

24 MS. LETSCHE: Yes, Judge Brenner, we have been
25 working on the agreement relating to the resolution of

1 that contention and are down to two items that we are
2 trying to resolve. I expect -- well, we are working on
3 it and I expect that that will be done shortly.

4 JUDGE BRENNER: That was the one in which the
5 Board perceived that there were no remaining problems
6 and it was just a matter of getting the writing done,
7 right?

8 MS. LETSCHE: That is correct. We are
9 negotiating language on two points. The rest of the
10 agreement is resolved.

11 JUDGE BRENNER: Okay. We will wait to hear
12 back from you in that area.

13 MS. LETSCHE: I think I can probably address
14 the other open issue, which is Suffolk County contention
15 24, materials cracking. That is in a similar state,
16 probably, I think, a little closer to being finished.
17 There is one item left, which basically involves the
18 language in the agreement reserving everyone's rights
19 with respect to the differing professional opinion
20 issue.

21 We had initially hoped that we would be able
22 to resolve that along with the issues that were already
23 in contention 24. It was determined a couple of weeks
24 ago that we would not be able to resolve it, and so we
25 are attempting to include a provision in the agreement

1 to preserve everyone's rights with respect to that
2 issue. I think we are very close to resolving the
3 differences on the language, and so that agreement is
4 close to being signable.

5 JUDGE BRENNER: What would be the item
6 triggering those rights and what would the time frame
7 be, if you know?

8 MS. LETSCHE: We haven't decided on a
9 particular date. The idea behind the present language
10 that we're discussing is that we will attempt to
11 continue to resolve it without having to have any
12 litigation about it. I understand that there has been
13 some discussion going on, although the County has yet to
14 be informed of the contents of that and we hope to be
15 shortly.

16 The idea was, and what we hoped we could do
17 before we signed the agreement, was that all the parties
18 could get together and review the pertinent
19 documentation dealing with the issue, and then if
20 everyone saw the documentation we might be able to get
21 everything straightened out. The difficulty is, the
22 documentation has not been made available to the County
23 yet and so we have not been able to discuss the
24 settlement.

25 The idea in the present agreement is that we

1 will continue to try to resolve it. If we determine --
2 and we haven't set a time period -- that we are unable
3 to do so, then at that point we will come back to the
4 Board and inform you of that and request that we be able
5 to litigate it, and you all would give us your guidance
6 at that point as to how to go about doing it.

7 JUDGE BRENNER: Did you mean by your language
8 that there is existing documentation that you've not
9 been given, or just that it doesn't exist?

10 MS. LETSCHE: It's my understanding that there
11 is documentation which the Staff member who has the
12 differing professional opinion had wanted to look at. I
13 understand he has now been given access to that
14 documentation and is presently reviewing it. It is GE
15 information or information that he received from GE, and
16 that has not yet been made available to us.

17 JUDGE BRENNER: Do you want it?

18 MS. LETSCHE: Yes.

19 JUDGE BRENNER: Staff?

20 MR. REPKA: We don't oppose the County seeing
21 it. It is GE's information. if it would help
22 settlement, we would like to see GE show the information
23 to the County.

24 MS. LETSCHE: It was GE, Judge Brenner, who
25 refused to turn the documentation over.

1 JUDGE BRENNER: Mr. Reveley?

2 MR. REVELEY: I'm not sure that I would agree
3 with that characterization of the situation, but I am
4 also certain I don't have enough information to
5 effectively rebut it. I think at the threshold the
6 question was whether the Halapatz concern fell within
7 the scope of the contention.

8 The issue was the terms and conditions upon
9 which GE was to make the information available to first
10 Mr. Halapatz and then the County. And as I recall, the
11 County had some fairly sweeping desires on that score
12 that were unacceptable. It is also my understanding
13 that Mr. Halapatz has been to San Jose and has looked at
14 the data.

15 I do not know where we stand beyond that, but
16 I will certainly find out. I do not think, however, it
17 is quite as simple a situation as has been suggested.
18 It is also our view on both SC 18 and SC 24 that either
19 we need to get a settlement very soon, agree on this
20 language, wrap it up, or we need to decide we are not
21 going to get a settlement and come back to the Board and
22 say, we have been able to agree on some parts but not on
23 all and these are the remaining issues. So I think up
24 or down, you're going to hear from us very soon. It has
25 dragged on far too long already.

1 JUDGE BRENNER: All right. But what I have in
2 mind is that if there is a settlement on everything that
3 was squaely within SC 24, or at least perceived to be
4 prior to the Halapatz differing professional opinion,
5 and we get a settlement on that, if there is still a
6 potential dispute remaining on the other item and
7 without stating for the purposes of this conversation
8 whether it's in the contention or not, the object that
9 we stressed some time ago, at least a month ago, perhaps
10 longer, was that the parties were to discuss these
11 items. We weren't going to wait formally for the
12 scheduling of contentions to be litigated or the filing
13 of testimony.

14 And as part of that, the object was there
15 would be full disclosure of everything pertinent, unless
16 there was some problem. So unless the County wants
17 something that is admittedly pertinent to the matter --
18 and I don't know if that is the case --

19 MR. REVELEY: I'm not sure that's the case
20 either, Judge. As I recall the language, the County
21 wanted unrestricted access to certain information. GE
22 was not interested in unrestricted access for the
23 County, or indeed for Mr. Halapatz, to the information.

24 Ms. Letsche and I will discuss it, and if in
25 fact there is either the potential for quick agreement

1 or for quick disagreement that we can put in front of
2 you, one or the other will be accomplished. My
3 impression upon listening to the discussion from my
4 people of this issue is that it should have been
5 resolved a long time ago and has not been. It resembles
6 a tar baby at best.

7 But I will personally take a run at it with
8 Ms. Letsche as soon as we finish with the Board and see
9 where she and I can get.

10 JUDGE BRENNER: I don't want to have to
11 resolve a discovery dispute on the eve of the due date
12 for the filing of testimony. It is that simple.

13 MR. REVELEY: The testimony has already been
14 filed on 24.

15 JUDGE BRENNER: I'm obviously focusing on the
16 new item, if we do agree to hear it.

17 MR. REVELEY: Well, I would think before you
18 agree to hear it, if it comes to that -- and I trust it
19 will not -- first someone will have to file a piece of
20 paper suggesting that there should be a contention, and
21 until that has been resolved there won't be any filing
22 of testimony.

23 JUDGE BRENNER: That is true, or else arguing
24 that it falls within the other contention. But needless
25 to say, we are not going to move the time period between

1 the time the matter was first raised by the County, and
2 we would pursue the path of further discussion on it
3 against them as the time prior to the filing of paper.

4 MR. REVELEY: I think one thing that has been
5 clear throughout this discussion with the County is that
6 timeliness is not in issue.

7 JUDGE BRENNER: Okay.

8 MS. LETSCHE: Judge Brenner, let me just make
9 one comment. When we were hopeful that we would be able
10 to resolve this issue along with the rest of the issues
11 in contention 24, the idea was that the County would
12 have access to the materials to which Mr. Halapatz had
13 access. We were not asking for any additional
14 information.

15 We also agreed to sign whatever protective
16 orders that GE wanted or would want us to sign. And it
17 was that language that the County would have access to
18 what was turned over to the Staff that GE had a problem
19 with. At that point we were very close to reaching
20 resolution on the remaining items of contention 24 and
21 so LILCO suggested that we were not going to be able to
22 resolve the document problem because of GE's
23 difficulties quickly enough, so we should go ahead and
24 resolve the remaining issues in 24 and leave the
25 Halapatz concerns open, with the understanding that they

1 would attempt to deal with the documentation problem and
2 continue to try to resolve that issue outside of the
3 remaining issues in contention 24.

4 Where we are right now with respect to the
5 settlement agreement is trying to reach agreement on the
6 language in there that deals with how we're going to
7 deal with the Halapatz concern. And in the interim, the
8 Staff has reviewed the documentation, but nothing has
9 been provided at this point to the County.

10 So that is I think an overview of where we
11 are, and we certainly are more than willing to do
12 whatever is possible at this point to see the
13 documentation in an attempt to resolve the Halapatz
14 concerns on a substantive level.

15 JUDGE BRENNER: We will stay out of it for a
16 while, in this sense. We look forward to seeing the
17 proposal on SC 24, including the language as to how to
18 deal with this other matter soon.

19 MR. REVELEY: Judge, you're going to get it
20 soon, because we're either going to settle it or I'm
21 going to bring it back to you. I'm tired of discussions
22 on these issues. They are either going to end or we're
23 going to litigate it, whenever litigation is feasible.

24 JUDGE BRENNER: Okay. What I was leading up
25 to, however, is at the time of that filing, if there are

1 still documents you need -- and at the time of that
2 filing we expect to see a specification of the issue on
3 what you are reserving rights, so that we understand
4 what the issue is as it relates to Shoreham. In other
5 words, the reservation of rights should not be just a
6 broad subject area; it should be the reservation of
7 rights as to a matter worded specifically enough to form
8 an admissible contention, so we have a good handle on
9 what it is you are litigating as it relates to
10 Shoreham.

11 And if there are documents you feel you need
12 at that time, you may or may not need it, and you may
13 prefer that Mr. Halapatz look at it in the first
14 instance. I don't know. I will leave that up to you.
15 But at the time of that filing, if you want documents
16 then come back and let us know and we will see what the
17 problem is.

18 We will also judge the reasonableness of the
19 document request and the resistance by one party or
20 another and the effect of that resistance on the timing
21 of the proceeding.

22 I don't have to suggest in any more detail how
23 you might pursue this in the interim, but one example
24 would be, if GE has a problem with the scope of the
25 request, rather than the principle of your seeing, of

1 the County seeing some things, you might, now that some
2 documents have been turned over to the Staff, be able to
3 identify the more important key document or documents
4 and seek that, and then see where you need to go from
5 there. That is one possibility.

6 MS. LETSCHE: Let me just say, Judge Brenner,
7 that it has been very difficult to do any of that since
8 the County has not been given access to anything, which
9 is why our request was based on what Mr. Halapatz felt
10 was relevant.

11 JUDGE BRENNER: Now that he has it, why don't
12 you talk to him through Staff counsel or with Staff
13 counsel present, and he can help you out. That is the
14 basis for your issue.

15 MS. LETSCHE: Yes, Judge Brenner, we will
16 pursue that. We have had trouble because we only found
17 out inadvertently last week that in fact the discussions
18 had been going on and that Mr. Halapatz had received
19 documentation. But we will certainly pursue it with
20 him.

21 JUDGE BRENNER: All right. I don't have to
22 add, they are not required to tell you about each and
23 every discussion they have.

24 Okay, loose parts monitoring system. I'm
25 surprised that is still wandering around loose out

1 there.

2 MR. REVELEY: Well, like a little ray of
3 sunshine on settlements, let me beam again. I think
4 loose parts will be settled. I think it may well be
5 that Mr. Irwin and Mr. Lanpher, once each of them has an
6 opportunity to talk to the other, can resolve it fairly
7 briskly.

8 My understanding of the impasse at the moment,
9 the only remaining impasse cuts to when the extra
10 equipment will be installed. I believe that movement in
11 the fuel load date may well have obviated the problem.
12 But until Mr. Irwin and Mr. Lanpher have an opportunity
13 to pursue it together, which will occur shortly, we
14 still don't have a resolution for you.

15 JUDGE BRENNER: Okay. Does that sound right,
16 Mr. Lanpher?

17 MR. LANPHER: I sent a letter to Mr. Irwin
18 several weeks ago, and Mr. Irwin has been tied up, I
19 know, on security matters very much, in which I proposed
20 resolution language on the one problem, and it is sort
21 of a force majeure clause that we had some disagreement
22 on. And I haven't heard back yet, and I think maybe we
23 are pretty close. But I will just have to wait to
24 hear.

25 JUDGE BRENNER: All right. We have not

1 imposed a date on many of these, including that one, and
2 we won't now because we don't want to skew your
3 priorities on the things you're working on. But I'm
4 worried about the fact that because we have resisted
5 doing that over the last several months now it will
6 remain adrift until later in the proceeding, and we
7 would want to return our attention to it in the event
8 there is a problem.

9 So I hope it doesn't get delayed, as to all of
10 these.

11 MR. REVELEY: It is not, Judge. As you know,
12 I had expected and wanted that all of these issues would
13 be wrapped up during the break that we took for
14 settlement purposes. They are going to be wrapped up,
15 either up or down, very soon.

16 JUDGE BRENNER: All right. That is all we
17 have on settlement of the ones we had expected to
18 receive, other than emergency planning.

19 I do want to note the fact that we have
20 received the stipulations regarding supplemental
21 testimony on two subjects, safety relief valve
22 maintenance and polymerization and water hammer
23 procedures and training.

24 As we discussed previously with the parties, I
25 believe on the record but it might have been in an off

1 the record meeting, so just to be sure I will state it
2 now: The Board independently has determined that it has
3 no questions of the witnesses on the testimony we have
4 received.

5 We understand the stipulation, which in effect
6 is simply a statement by the County that they do not
7 seek to cross-examine in each instance, and that is why
8 the witnesses need not be present. And whenever it is
9 convenient the testimony should be put in a form so that
10 we can admit it into evidence without the presence of
11 the witnesses and at that time perhaps bind in the two
12 stipulations with each piece also. So whenever the
13 parties are ready on that in the future, we will do it.

14 All right, what about the status of inadequate
15 core cooling, which will be the next contention some
16 day? We're going to have to buy Mr. Lanpher a t-shirt
17 for this issue too.

18 (Laughter.)

19 MR. REVELEY: We certainly hope not.

20 Judge, on Friday we trust, if not, early next
21 week, the company will provide the parties and the Board
22 with the study that Dr. Levy has made on water level
23 measurement systems specific to Shoreham. Based on that
24 document, we then anticipate having discussions with the
25 County that we trust will at a minimum narrow the

1 issues, if not lead to a settlement of the contention.

2 Our impression has been that, like ATWS and
3 Mark II, it probably would be very difficult to totally
4 settle ICC. We do hope, however, that the document that
5 we are going to provide everyone late this week or early
6 next week, once everyone has had an opportunity to
7 review it, will enable all concerned to narrow the focus
8 of the litigation if not avoid it altogether.

9 JUDGE BRENNER: All right. That issue should
10 be given a high priority because it's going to be next
11 up for litigation.

12 MR. REVELEY: I think it's getting the
13 appropriate priority, though, given the pace of QA, that
14 is not a problem of incredible imminence in any event.

15 JUDGE BRENNER: That is true and it has been
16 true in the past. But somehow, time has a way of
17 continuing on, and I would think if you don't have a
18 very good handle on it by the middle of November that
19 then we will be in a problem time frame.

20 MR. REVELEY: May I suggest that in the real
21 world the best way to ensure we have a handle on it is
22 for the Board to set a date, as you have been doing in
23 the past, on which all concerned must report on whether
24 in fact they do have a handle.

25 JUDGE BRENNER: One reason I mentioned the

1 middle of November, we will still be in the midst of the
2 QA litigation at that time, but depending on the
3 direction of the possible narrowing it could give rise
4 to a need to modify the prefiled testimony, and also
5 possibly motions and also cross plans. And
6 modifications might be other than a simple deletion, and
7 you might want to recast the testimony to focus on what
8 is left, which we would be inclined to permit and I
9 think will be to the benefit of the witnesses and
10 counsel for all parties.

11 So I am worried about the fact that, even
12 after you've reached some agreement, you would need time
13 beyond that to implement it prior to the litigation. I
14 don't know who is working on it. Mr. Lanpher, do you
15 have to be two places at once on that?

16 MR. LANPHER: Unfortunately, yes. But for the
17 Board's information, we are having an analysis done by
18 Mr. Goldsmith's office of, so to speak, what is left,
19 given what we've covered in the 7(b) context, what we
20 would intend to pursue. And as you have pointed out,
21 there may be some different focus in view of that, and
22 we are going to have that done in the next couple of
23 weeks.

24 And so I think by early November we will be in
25 a position to focus on that, and I think some time along

1 the way I will have some time. If not, I'm just going
2 to have to get someone else involved. I had hoped to
3 handle that myself, but we will just see.

4 JUDGE BRENNER: I think you are going to need
5 some help. We will still be on QA at that time.

6 Well, let's set it down here again on November
7 16th, which is a Tuesday. And what we would look for by
8 then is a written outline of where the dispute now lies,
9 to the fullest extent possible in the final language,
10 but short of that at least a very detailed outline and
11 an indication of what language is still being talked
12 about.

13 And if we receive the written outline on
14 November 16th, we will then be in a position to discuss
15 it either that day or a day or two thereafter. It might
16 be helpful to just set that date down to hear back on
17 all of this. That is, we would look toward the written
18 agreements or the indication that there will be no
19 written agreements on Suffolk County 24 and Suffolk
20 County 18 and Suffolk County 5, and also the response to
21 our comments on Suffolk County 31.

22 All right, we are prepared to turn to the
23 other subject of the status of issues, which we
24 deferred. We received your letter,, Mr. Repka, which
25 once again was very helpful in explaining the situation,

1 and we appreciate it.

2 As we understand it, the only issue ready to
3 be scheduled for testimony of the ones that have been
4 deferred is Suffolk County 1, the remote shutdown
5 panel. Before talking about a schedule for testimony on
6 it, I would like to know if there have been discussions
7 on it so that there is a feeling as to whether the full
8 contention remains or part of it or none of it.

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1 MS. LETSCHE: There was a meeting last week
2 among the technical people, so that the staff could
3 basically report on what they had done to close out the
4 item. We are in the process of trying to get some
5 additional information from the LILCO representatives
6 relative to that, and are reviewing the information we
7 have received last week. After we have had an
8 opportunity to complete that review, the parties have
9 agreed that we would get together at that point to
10 discuss possibly narrowing or even settling all or
11 portions of the contention.

12 JUDGE BRENNER: If that contention had to be
13 litigated, it was our thinking that we should litigate
14 it after inadequate core cooling and before emergency
15 planning, so that we can keep the safety issues
16 together. I don't know if the parties have any strong
17 objection to that.

18 MS. LETSCHE: We would have no objection to
19 that.

20 MR. REVELEY: I think that makes a great deal
21 of sense, Judge. What we would like to see, if it is
22 feasible, is for all of these contentions that have been
23 deferred pending completion of the staff review, for all
24 of those, to the extent feasible, that they either be
25 settled or litigated before we turn to Phase 1 emergency

1 planning. That may not be feasible in all cases.

2 JUDGE BRENNER: It doesn't look like it is
3 going to be likely to be feasible in any of the other
4 cases.

5 MR. REVELEY: Well, I am not certain that is
6 the case, if the parties would turn to and make a real
7 effort to engage in efforts to resolve it.

8 JUDGE BRENNER: Well, I am talking about the
9 scheduling status in the staff's letter more than
10 anything else.

11 MR. REVELEY: I was including the staff among
12 the parties.

13 JUDGE BRENNER: Good point. Well, on the
14 first issue, Suffolk County 1, we would like to schedule
15 testimony for Tuesday, November 30th.

16 MS. LETSCHE: Judge Brenner, that is the
17 Tuesday which immediately follows the Thanksgiving
18 weekend. Would it be possible maybe to just put it off
19 until Thursday of that week, the 2nd of December?

20 JUDGE BRENNER: Yes. I hate to give up my
21 Tuesday rut, the idea being that if we have to have
22 testimony on litigation, you have to have time for
23 motions and cross examination plans and so on, and we
24 scheduled it with that in mind, but also late enough so
25 that you have a chance to discuss matters before then.

1 There is no need to require it earlier than that
2 approximate date, but there is no certainty that we
3 could set it much later than that.

4 On the others, I don't know that any useful
5 purpose can be served by discussing it now. We had neve
6 precluded the possibility of severing one of those
7 contentions as we discussed at the time we talked about
8 which matters had to be deferred, and with a difference
9 in the wording of contentions from whether or not the
10 verification had to be made as distinguished from the
11 approach to what would be done.

12 I don't want to give the numbers because I
13 will reverse them, but it involved the pair of
14 contentions related to environmental qualifications and
15 also the electrical penetration one, I believe. No, I
16 am sorry, the seismic qualifications. So, we haven't
17 precluded that, but so far we see no need to bring that
18 matter back again until we know more about the schedule.
19 If 1 is going to be the pacing item, it might be more
20 efficient to leave them together, since the agreement
21 then was joint testimony would be filed by all parties,
22 and I would just remind the parties of that.

23 On SOC 19-I, which is the seismic
24 qualification one, the staff is going to let us know.
25 When I said two weeks from the letter, I guess about

1 October 20th. Is that right, Mr. Repka?

2 MR. REPKA: We are still expecting that trip
3 report later this month. That is correct.

4 JUDGE BRENNER: Is the county involved in that
5 one, too, as an interested party, 19-I? Were you
6 planning to actively participate in one form or another,
7 either write testimony or cross examination?

8 MS. LETSCHE: Yes.

9 JUDGE BRENNER: Are you going to file
10 testimony on it?

11 MS. LETSCHE: We haven't made that decision
12 yet, Judge Brenner. I think we have to wait and see
13 what the status of the staff's review is, and what their
14 conclusions are.

15 JUDGE BRENNER: The others appear to be even
16 further down the line, that is, on the -- there is an
17 item that affects potentially both the environmental
18 qualifications pair of contentions and the electrical
19 penetration pair of contentions, as I understand it, and
20 staff is reviewing the submittal received in September
21 from LILCO, and in addition, the staff requested further
22 information on September 20th from LILCO. There is
23 nothing further on the status of that included in the
24 letter. Do you have any idea of the time frame now of
25 the staff's review of LILCO's submittal?

1 MR. REPKA: On environmental qualification,
2 the staff is expecting additional information from
3 LILCO.

4 JUDGE BRENNER: Mr. Repka, I can't hear you.

5 MR. REPKA: We are expecting the additional
6 information from LILCO on environmental qualification in
7 "late October." That is what LILCO is telling us.

8 JUDGE BRENNER: Have you completed review of
9 your early September submittal?

10 MR. REPKA: That review has generated the
11 informal request for the additional information that
12 will be coming in from LILCO.

13 JUDGE BRENNER: The other one, Suffolk County
14 23, containment isolation, has one of the items closed,
15 but two or three others, depending upon how you look at
16 them, open. These are very uncertain schedules, as we
17 read the letter.

18 MR. REPKA: On the second open issue, 2-E.2, I
19 would first like to note a correction in the letter. It
20 should be that LILCO's proposed justification submitted
21 in SNRC 762 -- not 767. That is a separate submittal.
22 The latest status on that item is, and I will be sending
23 this out today or tomorrow, the staff has sent a request
24 for additional information to LILCO dated October 13th,
25 1982, on the proposed justification for late

1 installation. We have no schedule for LILCO's response.
2 The status on Item 3 under containment isolation remains
3 the same. We are still expecting to send a request for
4 information this month, and the rest of the status for
5 Item 4 remains the same. We are still waiting for
6 information.

7 JUDGE BRENNER: All right. We obviously can't
8 change the deferred status at this point. Let's get an
9 updated status at the time we go back to the same day
10 that we have asked for on the settlement reports, and
11 that is November 16th, so if we could get another
12 written status from the staff, we will then be prepared
13 to discuss it and see whether we should schedule any
14 others for litigation, and if the nature of the open
15 review is that the staff and LILCO just disagree, one or
16 the other, we might just want to litigate it as opposed
17 to letting this thing float forever.

18 So, I want a distinction in the staff's
19 report, and also in LILCO's comments on it, that we
20 could take orally after the written report as to whether
21 items under review mean that there are things that just
22 haven't been looked at yet, or whether you have looked
23 at things sufficiently to know you have a disagreement,
24 and what is being looked at further is whether or not
25 that disagreement will be resolved. So, distinguish

1 between those situations.

2 MR. REPKA: I think it is safe to say at this
3 point that for every one of these open items, there is
4 some level of disagreement. It is just a question of
5 whether it will be resolved. We have looked at initial
6 submittals on everything, at least initial submittals.
7 Some have gone through maybe two, three, four
8 iterations.

9 JUDGE BRENNER: Well, let us know on the 16th,
10 because it is going to get to the point where continued
11 discussions on these items are just going to be out of
12 the time frame for this hearing, and then it is going to
13 be up to any one of the parties, unless it is a
14 situation where there is information simply not yet
15 available, and maybe one way for us to get a handle on
16 it is if the staff can indicate, given what it now
17 knows, what it would require further in order to be
18 satisfied. We can then get a handle on where the
19 disagreement lies, recognizing that further information
20 was not available at the time of the November 16th
21 report might lead the staff to modify that position
22 later.

23 So, we understand what the issue is.

24 That is all we have on matters unrelated to
25 quality assurance and quality control. I don't know if

1 the parties had anything. Give me a second to shift my
2 papers, and then I will bring up a quality assurance
3 matter. Somebody might want to get the witnesses, since
4 I think this matter will only take a few minutes.

5 (Pause.)

6 JUDGE BRENNER: Okay. The quality assurance
7 related matter is the request of the county in its
8 response to portions of LILCO's motion for further board
9 direction of the conduct of QA cross examination. The
10 request is contained in footnote 7 on Page 11 of the
11 county response, asking LILCO to provide a statement or
12 description concerning what LILCO contends each
13 attachment to its prefiled testimony demonstrates in
14 terms of responding to the QA contentions.

15 In the spirit of what we have required the
16 county to do, we do not believe many of the attachments
17 of LILCO's testimony would lend itself to that type of
18 request, and I believe Mr. Lanpher agreed with that.
19 Many of them are just illustrative examples of forms and
20 that type of thing, but we did mention one attachment
21 that we thought would lend itself to that approach.

22 In any event, I would like to ask if LILCO or
23 the other parties have had a chance to consider yet
24 which ones might lend itself to that.

25 MR. ELLIS: We have started that process,

1 Judge Brenner. We have not completed that process. We
2 have, as you noted, eliminated a number which we think
3 are just examples of forms. I think the example that
4 you mentioned was the Number 10. Is that the one that
5 you had mentioned?

6 JUDGE BRENNER: Yes, and to fill it out for
7 the record, that attachment is referenced at Page 35 of
8 your testimony as containing the response to the items
9 in what I guess has been called Appendix 1 to Contention
10 12, and as we saw it, the attachments were a rather raw
11 compilation of correspondence as distinguished from the
12 facts with an explanation as to which portions of those,
13 of that appendix is directed to, in effect, the spirit,
14 not necessarily word for word, but the spirit of what
15 the county suggests would assist the litigation, and we
16 believe in that one instance, at least, it would.

17 MR. ELLIS: That was the instance that, as I
18 say, our process is still ongoing. That one, we will
19 furnish a description, as you stated, Judge Brenner, of
20 our views on how this relates to the contention. As you
21 know, though, it may be difficult for us, because this
22 -- the full shape of the contention doesn't always take
23 form, as we see vividly, until some cross examination
24 occurs, so we don't want to be bound necessarily by
25 having said something and then that is all we get to say

1 about it.

2 However, that is the one that I have
3 identified. There may well be others, and I will get to
4 it just as soon as we can. We have started the
5 process.

6 JUDGE BRENNER: Well, I think on that one, at
7 least, we are willing to hear reasons as to why it
8 shouldn't be done as to that one. What we had in mind
9 was certainly not argument in the nature of proposed
10 findings from LILCO. Rather, it would be a description
11 of what findings you would draw as to just what each
12 item stands for in the context of the numbered listing
13 and the appendix to the contentions, and then
14 identification of which portions of the correspondence
15 reply to it. Perhaps some very quick paraphrase in that
16 identification listing would be helpful.

17 We would leave the precise form up to you, but
18 what we had to do is read through each letter which was
19 included in that Attachment 10 and then identify for
20 ourselves which portion of the letter, and it was not
21 all portions in all cases matched up with the appendix,
22 and then apply some other inferences, and I think this
23 will make the cross examination more efficient. I am
24 not seeking additional testimony on it. I think I have
25 explained what we are looking for.

1 MR. ELLIS: We will make an effort to provide
2 that to the parties and the board, but beyond that, I am
3 not prepared to address the point.

4 JUDGE BRENNER: All right. Maybe it is fair
5 to do it this way. We didn't see any evidence on our
6 own that really lends itself to that footnote, and so if
7 the county has another example, or examples, in mind, we
8 will let the county raise it, and maybe that is a fairer
9 way to do it.

10 MR. LANPHER: Judge Brenner, let me have that
11 reviewed today and we will try to get back to you
12 tomorrow.

13 JUDGE BRENNER: All right, and it would be
14 best, of course, if you could discuss it among
15 yourselves first, but it would be good to get back
16 tomorrow. On the one that the board agrees that it
17 should be done, Attachment 10, I would think that it
18 would have to be received by early Monday before we
19 resume the hearing. I guess that would be the 24th.

20 MR. ELLIS: I believe that is the 25th, Judge,
21 and we will do that.

22 JUDGE BRENNER: It would be best if the
23 parties could receive it by that Friday, October 22nd,
24 but we won't require it.

25 MR. ELLIS: We will definitely shoot for the

1 22nd.

2 JUDGE BRENNER: And if you have difficulty in
3 getting it to the board the 25th is acceptable to us,
4 even if you serve the other parties earlier.

5 Well, let me make clear if I haven't it
6 doesn't have to be extensive explanation which would
7 arguably be crossing over into new testimony. It would
8 have to be a handy guide as to what you have already
9 provided stands for by a particular identification in
10 the context of a listing of the contention, and perhaps
11 a few words of summary as to each item.

12 (Whereupon, the board conferred.)

13 JUDGE BRENNER: That is all we have prior to
14 resuming the examination. Why don't we take the break
15 now, already, since we have belabored it this long? Is
16 there any other matter related to matters we have
17 discussed or any other miscellaneous matters we need to
18 consider?

19 (No response.)

20 JUDGE BRENNER: Let's take a break until 10:20.

21 (Whereupon, the board was briefly recessed.)

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1 JUDGE BRENNER: Okay, we are ready to
2 proceed.

3 MR. LANPHER: Judge Brenner, I previously
4 passed out some handwritten documents which we will be
5 referring to. First, the document related -- it is
6 entitled Storage Group 3.

7 JUDGE BRENNER: Is your mike on?

8 MR. LANPHER: Yes, it is. You can't hear?

9 JUDGE BRENNER: I can hear you, but not very
10 well.

11 MR. LANPHER: Is that better?

12 JUDGE BRENNER: Yes. As long as I interrupted
13 you, could we close the door in the back? I don't want
14 to disturb the deliberations.

15 Whereupon,

16 T. TRACY ARRINGTON,
17 FREDERICK B. BALDWIN,
18 ROBERT G. BURNS,
19 WILLIAM M. EIFERT,
20 T. FRANK GERECKE,
21 JOSEPH M. KELLY,
22 DONALD G. LONG,
23 ARTHUR R. MULLER, and
24 WILLIAM J. MUSELER,

25 the witnesses on the stand at the time of recess, having

1 been previously duly sworn, resumed the stand, and were
2 examined and testified further as follows:

3 CONTINUED CROSS EXAMINATION ON BEHALF OF SUFFOLK COUNTY

4 BY MR. LANPHER:

5 Q Gentlemen, can you define the difference
6 between an end cap and a cover?

7 A (WITNESS MUSELER) The typical definition of
8 an end cap is something that is on a piece of pipe or a
9 piece of conduit or a piece of tubing. Caps are also
10 found on the female entrances into instruments and
11 motors, things of that nature. Covers in some cases
12 used interchangeably with end caps, for example, on
13 something like an expansion joint. It wouldn't really
14 -- or a flange wouldn't lend itself to the type of end
15 cap that is used on a pipe, and a piece of wood, a piece
16 of plywood might be secured to the equipment, to the
17 equipment opening, to the valve flange opening, or to
18 the opening in an air conditioning unit, for instance.
19 I differentiate those items from the types of covers we
20 have spoken about for the last few days, sheets of
21 either tarpaulins or poly placed over an entire piece of
22 equipment.

23 Q Would it be fair then to state that an end cap
24 is normally to close a specific opening of some kind
25 while a cover would be for the entire piece of equipment

1 or material or panel or whatever is being covered?

2 (Whereupon, the witnesses conferred.)

3 A (WITNESS MUSELER) Either to close it off or
4 to protect the end. That would designate the caps, and
5 I agree with your definition of the cover.

6 (Whereupon, the witnesses conferred.)

7 Q Mr. Museler, would you agree also that caps
8 and covers and -- caps and covers serve the same basic
9 function in terms of protecting equipment in storage
10 from potential damage or deterioration? I don't mean
11 just equipment, but also materials and other items as
12 well?

13 (Whereupon, the witnesses conferred.)

14 A (WITNESS MUSELER) Some functions of end caps
15 depend upon the piece of equipment we are talking
16 about. For instance, we mentioned previously that in
17 the case of large bore pipe, it comes with machining
18 operations already performed on it, and the major
19 function of an end cap in that situation is to protect
20 the end prep. Similarly, threaded pipe or conduit,
21 threaded conduit would have end caps on it, the primary
22 function of which would be to protect the threads of the
23 pipe or the conduit. Other caps, for instance, on open
24 instrumentation tubing are there primarily to just keep
25 some dirt from entering the tubing on an instrument

1 cap. It is primarily to prevent dirt from getting in.
2 Depending on the instrument, it might also be to prevent
3 water from getting in, in the case of electrical
4 components, have served multipurposes. Some, depending
5 on equipment and the storage location, would be to
6 prevent water. Others would be to prevent damage to the
7 threads, as we discussed in the same manner as conduit
8 or pipe.

9 Q Mr. Museler, I understand there can be
10 different kinds of damage, depending on the piece of
11 equipment or material and the kind of threat, but my
12 question was, generally speaking, end caps and covers
13 serve the same function of protecting whatever is being
14 covered or being capped from some sort of damage or
15 potential deterioration.

16 A (WITNESS KELLY) I think part of the problem
17 is that I think it is too broad a categorization. The
18 whole storage program and every part of it is to meet
19 that same goal you just said.

20 Q I understand that, Mr. Kelly. I am just
21 talking about covers and end caps right now. So would
22 you agree with that generalization that that applies to
23 covers and end caps?

24 A (WITNESS MUSELER) Covers and end caps are
25 part of the program to protect equipment.

1 Q And when you talk about part of the program to
2 protect equipment, is it part of LILCO's program to
3 implement compliance with Criterion 13 of Appendix B to
4 Part 50? Correct?

5 A (WITNESS MUSELER) Mr. Lanpher, we have -- I
6 believe we stated before that the storage and
7 maintenance programs we have been discussing is a
8 program that is applied to all equipment on the Shoreham
9 site, safety related and non-safety related. To the
10 extent that any of these specific items we are talking
11 about are safety related items, the program is in place
12 to meet our commitments to the Appendix B requirements.
13 As I said, the program covers all of the components, and
14 to that extent, it is not required to meet Appendix B
15 requirements on non-safety related equipment. The
16 program is applied universally the same way as for all
17 of the equipment, but when you ask that question, I
18 believe I would have to point out that -- what our
19 commitments to Appendix B apply to and what they don't
20 apply to.

21 Q Your Appendix B storage commitments only apply
22 to safety related, then?

23 A (WITNESS MUSELER) In terms of what we are
24 required to do to meet Appendix B, the program only
25 applies to safety related equipment. The program is

1 applied universally as good construction and engineering
2 practice to all of the equipment on the Shoreham job
3 site, but the regulations do not require that it be
4 applied to non-safety related equipment.

5 (Whereupon, counsel for Suffolk County
6 conferred.)

7 Q Gentlemen, during the recess overnight you
8 were provided with a listing of FQC and field audits
9 under a broad heading of end caps and covers. If I
10 understand your position, it is that you believe that a
11 more appropriate grouping is to group end cap kinds of
12 situations together and to view covering situations as a
13 separate group. Is that correct?

14 MR. ELLIS: May I inquire what the groupings
15 -- the groupings are for his purpose, and I don't know
16 what the purposes are for.

17 JUDGE BRENNER: All right. Maybe it would be
18 helpful for you to explain that, Mr. Lanpher, if you
19 can. You don't have to if you think it will affect
20 telegraphing your cross examination.

21 MR. LANPHER: I have no problem, Judge
22 Brenner. Maybe I can do it best through questions to
23 the witnesses, and I will withdraw that question and
24 proceed.

25 JUDGE BRENNER: Okay. Whatever you want to

1 do.

2 BY MR. LANPHER: (Resuming)

3 Q Gentlemen, do you have that Storage Group 3,
4 the first page that was provided to your counsel last
5 night?

6 A (WITNESS MUSELER) Yes, we do.

7 Q Looking at the center bottom part of the page,
8 there are five audit findings I would like to focus your
9 attention on initially, and those are FQC 13, finding
10 D.8, FQC 27, finding D.7 --

11 (Whereupon, a discussion was held off the
12 record.)

13 BY MR. LANPHER: (Resuming)

14 Q Gentlemen, I want to concentrate your
15 attention on five findings. Those are field quality
16 control audit 13 (finding D.8), FQC Audit 27 (finding
17 D.7), field audit 934 (finding 4.1), field audit 1301
18 (finding 4.1), and field audit 1313 (finding 4.1).

19 Before we look at all of them in a group,
20 turning your attention first to FQC Audit 13 (finding
21 D.8). This is an instance where check valves were not
22 covered.

23 A (WITNESS ARRINGTON) Mr. Lanpher, on
24 Observation D.8, this is the polyethylene covering over
25 the component. It is not an end protector or a cap.

1 Q So this is an example where a cover was
2 required to be in place and was not in place, correct?

3 A (WITNESS ARRINGTON) That is correct.

4 Q And is it not an observation also that
5 identifies that three monthly checks in a row had
6 identified the same problem with these valves? Is that
7 correct?

8 A (WITNESS ARRINGTON) It does indicate that on
9 Page 5. These were construction checks that were made
10 by the construction individuals that they are referring
11 to here. There is no damage noted as a result of the
12 covers not being there, just the fact that the covers
13 were not on the valves.

14 Q Gentlemen, if I could turn your attention to
15 field audit 1301 (finding 4.1), am I correct that this
16 is another instance where protective covering or poly
17 covering was required but that it was not in place?

18 (Whereupon, the witnesses conferred.)

19 A (WITNESS KELLY) This is a case where a
20 specific piece of equipment did not have the poly
21 covering.

22 Q Mr. Kelly, this was safety related electrical
23 equipment. Is that correct? And I am looking at the
24 top of field audit 1301, where I think that is made
25 clear.

1 A (WITNESS KELLY) Yes, that is a piece of
2 safety related equipment that wasn't stored in the
3 building. I would just like to note also that there is
4 no indication in the audit that there was any damage to
5 the equipment because of that poly cover being missing.

6 Q But the storage history card required that it
7 be covered, right?

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

9 Q And this is also an incidence where the
10 requirements of the storage history card had not been
11 implemented?

12 A (WITNESS KELLY) I can't say that the
13 requirements of the storage history card had not been
14 implemented in this particular case. At this particular
15 time, that poly cover was not there. That doesn't mean
16 that was the case two days before.

17 Q At the time the auditor was there, sir, the
18 requirements of the storage history card were not being
19 complied with?

20 A (WITNESS KELLY) As far as the piece of poly
21 being missing, yes.

22

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1 Q Gentlemen, turning your attention to the other
2 three audits in that group of five which I initially
3 called your attention to; that is, FQC 27, Finding
4 (D.7); Field Audit 934, Finding (4.1); and Field Audit
5 1313, Finding (4.1). Do you agree that in each of these
6 cases a problem is identified by the auditor involving
7 the failure to provide covers which were required?

8 A (WITNESS MUSELER) No, sir.

9 Q In what respect do you disagree, Mr. Museler?

10 A (WITNESS MUSELER) In one of the audits, sir,
11 the auditor's visual observations were correct.

12 Q Mr. Museler, let me interrupt you. Can you
13 tell me which one you're referring to?

14 A (WITNESS MUSELER) FQC 27, Finding (D.7). The
15 auditor's observation was visually correct. However,
16 this was an instance where the pumps were in the process
17 of being installed and having piping fitted up to them,
18 similar to, I believe, one or two we discussed in the
19 past in terms of the work of having to take the covers
20 off equipment in order to perform the work.

21 In this case, our discussions with people who
22 were involved in this at the time indicated that all of
23 those pumps were in the process of being installed.

24 Q First, do you agree that the other two audits
25 that I have mentioned, Field Audit 934, Finding (4.1),

1 and Field Audit 1313, Finding (4.1) do constitute
2 instances where covers were required and were not in
3 place when the auditor performed his inspection?

4 A (WITNESS MUSELER) Yes, sir.

5 Q Thank you. Going back to FQC Audit 27, so I
6 understand -- strike that.

7 Do you have information as to what the auditor
8 observed at the time of his audit that would have led
9 him to make this audit finding?

10 A (WITNESS MUSELER) Sir, we don't know what time
11 of the day or on what shift the auditor conducted his
12 inspection. I don't dispute the fact that the auditor
13 saw that the pumps were not covered. They probably were
14 not covered when he viewed them. However, when we are
15 installing pumps in an area and working two and three
16 shifts, we don't have the equipment covered while we are
17 moving it around and working on it.

18 Q Well, if you were moving it around and working
19 on it, wouldn't the auditor have readily recognized that
20 this equipment was in the process of installation, and
21 thus, he wouldn't have written up a violation?

22 A (WITNESS MUSELER) Yes, he would have. He
23 would have done that if he was there, and the men were
24 physically working at that moment on those pumps. They
25 apparently were not at that moment when he made his

1 observation.

2 Q And when persons are not working on pumps that
3 are being installed, you don't require the openings to
4 be covered?

5 A (WITNESS MUSELER) No, we don't if the period
6 is going to be short between the time the pump is worked
7 on and the time the pump will next be worked on. It is
8 a matter of a judgment that is not covered in the
9 procedures; it is a matter of human beings using common
10 sense when it comes to protecting equipment.

11 When we go through a shift change or we go
12 through a lunch break, it is not necessary nor is it
13 required by any regulation, in my judgment, that we
14 cover it every five minutes. I think the regulations do
15 allow for common sense to be employed in the process of
16 trying to construct a power plant.

17 Q Was an exit interview held in this instance
18 between the auditor and the persons that had been
19 audited? Is that a normal function?

20 A (WITNESS ARRINGTON) There would be an exit
21 critique; whetehr or not the appropriate area supervisor
22 was involved with this I really couldn't tell you. In
23 most cases, the exit critique would be with the
24 department head and the quality assurance organizations
25 that are responsible for the areas that were audited

1 during that process.

2 Normally, we do not bring the supervisors who
3 have backup information to these meetings because there
4 are just too many people involved in the course of an
5 audit to bring everyone into the area to discuss these
6 findings. These valves in question here were in a
7 temporary storage area to be installed. Their normal
8 storage location would not be in the control room.
9 These would have been taken from a main storage area to
10 a temporary storage location where they would eventually
11 be installed.

12 Q Mr. Arrington, your last answer confused me
13 somewhat. Are you saying that these valves were in a
14 temporary storage area at this time? I understood from
15 Mr. Museler that they were in the process of being
16 installed.

17 A (WITNESS ARRINGTON) The temporary storage area
18 is at their final resting location. These things have
19 to be piped in, so you can't hang them, suspend them in
20 the air. We have temporary storage areas that are very
21 close to their final resting location at various
22 places. This is in the control room building at
23 elevation 63. These valves are going to be installed
24 around elevation 63.

25 Q How about the pump motors?

1 A (WITNESS ARRINGTON) The pump motors? I'm
2 sorry.

3 A (WITNESS MUSELER) Those pumps are located on
4 elevation 63 in the control room.

5 Q Mr. Museler, do you know in this instance how
6 long the interval was between people working on these
7 pump motors when they were unattended, which apparently
8 was the time that the auditor came by?

9 (Panel of witnesses conferring.)

10 A (WITNESS MUSELER) No, sir, we do not know the
11 interval. We only know that the installation was in
12 progress at that point in time, so it probably was not
13 long. But we don't know the exact interval involved.

14 Q Gentlemen, yesterday we talked about the
15 problems relating to coverings, and it was mostly
16 outside storage. These are all -- these four audits as
17 to which you agree involve covering problems we have
18 been talking about this morning. Do you agree that the
19 problems which are identified are similar to those that
20 we discussed yesterday in that proper coverings were not
21 being provided?

22 (Panel of witnesses conferring.)

23 MR. ELLIS: Mr. Lanpher, can you just key me
24 in, too, so I can find it in my notes -- to the ones
25 that you are referring to that we discussed yesterday?

1 MR. LANPHER: Yes. Yesterday we discussed
2 inadequate or defective coverings in Field Audits 371,
3 Finding (4.1), and FQC 23, Finding --

4 MR. ELLIS: Excuse me. 371 -- go ahead. I'm
5 sorry.

6 MR. LANPHER: Judge Brenner, I don't know if I
7 should be responding or not. I will if you want me to.

8 MR. ELLIS: Just give me a few so I can find
9 it on my notes.

10 JUDGE BRENNER: Well, we remember that there
11 were items that involved covers not being provided, or
12 being defective, detected yesterday. I don't know if
13 the witnesses need particular numbers in order to answer
14 the questions. You could mention them later in the
15 findings. But if you feel you need it for an immediate
16 purpose I think he can probably give it to you.

17 MR. LANPHER: Judge Brenner, my point was
18 somewhat different.

19 JUDGE BRENNER: It's going to take a long time
20 if we keep doing it this way.

21 MR. LANPHER: I just want your direction,
22 reflecting on yesterday. I found myself responding to
23 Mr. Ellis instead of responding to the Board, and I'm
24 going to try from here on to respond to whatever you ask
25 me to provide.

1 MR. ELLIS: I don't think I have done that
2 very much at all, Judge.

3 JUDGE BRENNER: All right. I don't want to
4 belabor that collateral point. It was suffice it to say
5 unless I told you otherwise, it was within the bounds of
6 reason. At the beginning of the proceeding I had some
7 problems at times, and I think everybody has adjusted.
8 And to the extent you are able to resolve each other's
9 problems, either by withdrawing the question or
10 responding right away, it was okay. So don't worry
11 about that aspect.

12 Okay. Why don't you give him the numbers this
13 time, but let's try to tie it up so that every time we
14 have that tie-up we don't have to be repeating the
15 numbers each time.

16 MR. LANPHER: Starting again at the beginning,
17 Field Audit 371, Finding (4.1); FQC Audit 23, Finding
18 (D.5.1); Field Audit 648, Finding (4.3); Field Audit
19 1275, Finding (4.2).

20 JUDGE BRENNER: Let me interrupt you a
21 minute. This is for your purpose rather than the
22 witness' purpose, Mr. Ellis.

23 MR. ELLIS: I found it now, thank you.

24 JUDGE BRENNER: All right. Do you have
25 yesterday's transcript?

1 MR. ELLIS: I'm using my notes.

2 JUDGE BRENNER: Do you have yesterday's
3 transcript?

4 MR. ELLIS: We have it here.

5 JUDGE BRENNER: The reporter did a very nice
6 job. Turn to page 11487A and the grouping that is a
7 listing of exhibits admitted into evidence. And the
8 grouping listed for page 11654, which is the fourth
9 grouping on that page, is the grouping that Mr. Lanpher
10 is now referring to.

11 MR. ELLIS: Thank you, Judge Brenner.

12 While we're at it, I would even say this for
13 the record. The reporter did this yesterday without any
14 instruction, and to the extent it is accurate -- and I
15 have no reason to believe otherwise based upon that one
16 example -- it is excellent and let's continue to use
17 it. We recognize that the reference to Suffolk County
18 65 is a handy cross-reference to an exhibit that is an
19 exhibit for identification, which is the entire listing
20 of these items. And we also recognize that you may,
21 although I hope very rarely, come up with one that is
22 not on that exhibit.

23 But for the future, let's see if we can
24 continue to get this type of index in the transcript
25 with the reference back to SC-65. We know that all of

1 these items in turn have other exhibit numbers and there
2 is no need to repeat those unless they are varied and
3 sundried.

4 BY MR. LANPHER (Resuming):

5 Q Gentlemen, my question is whether the findings
6 related to coverings that we discussed this morning are,
7 in your opinion, similar to the findings related to
8 inadequate or defective coverings which we discussed
9 yesterday.

10 A (WITNESS MUSELER) Are we excluding FQ 27(D.7)?

11 Q Yes, for this question.

12 A (WITNESS MUSELER) FQ 27, (D.8). Let me say
13 this. All four of those audits relate to covering. FQC
14 13, (D.8), we believe is similar to the items we
15 discussed yesterday. Mr. Kelly would like to comment on
16 the three remaining field audits, 934, 1301 and 1313.

17 A (WITNESS KELLY) Yes. Those three audits
18 relate to equipment that is stored in place. The audits
19 that we discussed the other day I believe were primarily
20 items that were in outdoor storage, which would be a
21 condition where you're talking about protecting from
22 weather. These were items that were installed in
23 heated, enclosed buildings, so it is a condition where
24 you're talking about preventing damage from construction
25 that is going on. And in all cases, there was no

1 indication that any water damage had occurred without
2 the covering being used.

3 (Counsel for Suffolk County conferring.)

4 MR. LANPHER: Judge Brenner, at this time I
5 would like to move into evidence the following audit
6 findings which all come from Suffolk County Exhibit 65
7 for identification, and the findings are: FQC-13,
8 Finding (D.8); Field Audit 934, Finding (4.1); Field
9 Audit 1301, Finding (4.1); Field Audit 1313, Finding
10 (4.1). And this is under the general category of
11 Coverings that we have been discussing.

12 I would also like to move into evidence FQC
13 Audit 27, Finding (D.7) as supplemented by -- all of
14 these are as supplemented by the witness' answer but
15 with some clarifications that the witnesses have
16 provided.

17 JUDGE BRENNER: All right, if there is no
18 particular objection to that group, and hearing none, we
19 will admit them into evidence.

20 (The documents previously
21 marked FQC-13, Finding
22 (D.8); Field Audit 934,
23 Finding (4.1); Field
24 Audit 1301, Finding
25 (4.1); Field Audit 1313,

1 Finding (4.1); and FQC
2 Audit 28, Finding (D.7)
3 for identification were
4 received in evidence.)

5 BY MR. LANPHER (Resuming):

6 Q Gentlemen, turning your attention to Field
7 Audit 740, Finding (4.3), this is an instance, is it
8 not, where the openings on two tanks were left uncovered
9 in violation of CSI 4.6?

10 A (WITNESS MUSELER) No, sir, we don't believe so.

11 Q Well, Mr. Museler, is that what the audit
12 finding indicates?

13 A (WITNESS MUSELER) That was the auditor's
14 interpretation at the time he made the observation, sir.

15 Q Mr. Kelly, you reviewed that interpretation and
16 approved it as manager of the field QA Division?

17 (Panel of witnesses conferring.)

18 A (WITNESS KELLY) Could you repeat the question,
19 please?

20 Q Mr. Kelly, you approved that audit finding as
21 manager of the field QA division for LILCO, correct?

22 A (WITNESS KELLY) Yes, that is correct.

23 Q Mr. Museler, why is it you disagree with his
24 finding?

25 A (WITNESS MUSELER) The reconstruction of this

1 particular event was done by the personnel involved back
2 at the plant and indicated that those two -- I believe
3 it was two tanks involved -- these tanks are in the
4 control building, I believe, the diesel generator room,
5 and the openings that were left uncovered -- I believe
6 one opening on each of the particular tanks -- were
7 uncovered because those tanks had been installed, and
8 the covers had been removed in order to allow the piping
9 connections to be made.

10 The auditor might not have known that if he
11 was not there at the instant that the piping crews were
12 working. The timing -- the audit was conducted in late
13 March, and that piping installation, from what we have
14 been able to ascertain, extended over approximately a
15 four to six-week period, which is what would have been
16 normal for that kind of a piping installation. We don't
17 know exactly when during that period those openings were
18 piped up, but that process is an ongoing process in that
19 area.

20 The auditor's observation, again, was a
21 correct observation in terms of what he saw. Whether
22 that violated a procedure or a requirement, it is my
23 judgment that it did not because of the fact that the
24 work was in process. If those tanks had been in
25 temporary storage or permanent storage and no work was

1 ongoing on them, then I believe I would agree with the
2 auditor's characterization of his observation. I don't
3 agree with his characterization of his observation, even
4 though his observation was correct, because the
5 equipment was being worked on.

6 Q Mr. Kelly, did Field QA later rescind this
7 violating finding?

8 A (WITNESS KELLY) We don't rescind findings.
9 That is not a mechanism. We would just agree with
10 whatever response. That would be, as far as rescinding
11 we would agree with the response that we would have
12 received by the person involved. We don't have any
13 mechanism in our program to "rescind" items. Based upon
14 discussions with the auditor involved who did this
15 audit, Mr. Museler's characterization is correct, based
16 upon additional information that was gathered later.

17 A (WITNESS MUSELER) Mr. Lanpher, there was -- I
18 believe it would be helpful to note that no corrective
19 action was required in this case. In other words, we
20 did not go put the end caps back on. And again, from
21 the people at the site who were involved in this, there
22 was no disagreement with that. They simply went out and
23 verified that near the end of that particular
24 construction period, the openings were all closed off by
25 virtue of the fact that the pipe had been attached to

1 them. So there was no corrective action required
2 because there was no violation, if you will, of the
3 requirements.

4 Q Is this documented in some manner in further
5 response, in response to this audit finding? Or is this
6 something that you learned about verbally subsequent to
7 that time?

8 A (WITNESS MUSELER) I personally learned about
9 it verbally, sir.

10 Q Is there or are there documents -- and this is
11 really in the nature -- is there a more complete audit
12 package related to Field Audit 740 that would provide
13 these details which, in effect, would state that while
14 what you saw is correct, it is not a violation because
15 we were in the process of installation.

16 A (WITNESS MUSELER) I don't believe there would
17 be any document that would say that it was not a
18 violation. There are numerous pieces of paper that get
19 involved in this process ranging from IOCs, interoffice
20 correspondence memos, to the various non-conforming
21 documents that have been mentioned at various times
22 during this proceeding.

23 Q But in this instance you don't whether there
24 are documents which state that this, in the view of
25 Unico Construction, was not a problem?

1 (Panel of witnesses conferring.)

2 A (WITNESS MUSELER) Mr. Lanpher, I believe there
3 is or there would be a response to the audit finding
4 which would be the Unico response to that finding,
5 meaning the construction response to that finding, which
6 would have stated or which did state that the tanks were
7 in the process of being installed.

8 Q How do you know it stated that? Did you
9 review that, sir?

10 A (WITNESS MUSELER) Yes, sir.

11 Q Do you have that available?

12 A (WITNESS MUSELER) Yes, we do.

13 MR. LANPHER: Judge Brenner, prior to the
14 break back in September we talked about complete audit
15 packages, and I am afraid I may be wasting some time on
16 some of these things that perhaps is needless if
17 violations are cited but in fact they are not
18 violations. And I would like to request to be able to
19 get these complete audit packages. I don't need them
20 today, obviously, but maybe prospectively.

21 You had noted that maybe that was a way to
22 expedite some of this examination.

23 JUDGE BRENNER: Mr. Ellis, do you want to
24 respond now or do you want to consider the situation and
25 come back after lunch?

1 MR. ELLIS: I think I would like to come back
2 after lunch. I do happen to know there are many
3 instances in which research is done. What is done is
4 calls are made up to Long Island --

5 JUDGE BRENNER: Just restrict it to Mr.
6 Lanpher's request. He didn't seek tapes from telephone
7 calls.

8 MR. ELLIS: No, but what I'm saying, though,
9 is that the point is that documents oftentimes -- while
10 document may be here, there may be thousands or hundreds
11 or tens of documents that are not here that are still in
12 place and we're talking about something that is
13 burdensome. And the witnesses are prepared to answer
14 it, and I think they are answering forthrightly on
15 these. And I think it comes too late.

16 JUDGE BRENNER: I guess you don't want to wait
17 until after lunch to consider your response.

18 MR. ELLIS: There may be other factors of
19 which I am not aware is the only reason that I make that
20 point. So I would like to wait.

21 JUDGE BRENNER: All right. You think about it
22 and we will think about it and if you want to talk to
23 each other about it, fine. If you don't want to that's
24 fine, also. But after lunch, let us know your position.

25 (Counsel for Suffolk County conferring.)

1 BY MR. LANPHER (Resuming):

2 Q Gentlemen, I would like to turn your attention
3 to some of the audit findings noted at the top of the
4 handwritten page that I have provided you, that says the
5 end caps are not properly implemented. In looking at
6 FQC Audit 15, Finding (D.7), do you agree that this was
7 an instance where gate valves lacked the protective end
8 caps which were required by procedure?

9 (Panel of witnesses conferring.)

10 A (WITNESS ARRINGTON) Mr. Lanpher, the gate
11 valves that is referenced in Observation D.7 were in
12 storage in the main warehouse. The reason why these end
13 caps were not on there was that this was during the
14 strike of 1975 where we had no craft personnel on site
15 to put these caps back on the equipment. There was no
16 damage done as a result of the caps not being on there.
17 As soon as the crafts people returned to the job site,
18 those caps were replaced.

19 Q Mr. Arrington, you say there was no damage.
20 Does that mean there was no physical damage?

21 A (WITNESS ARRINGTON) We checked to make sure
22 that when the protective covering is not on the
23 equipment that there is or is not damage, to note that.

24 Q How do you determine that there is no
25 invisible damage? I mean invisible in the sense of the

1 naked eye in the sense that there may be some
2 deterioration in the quality of the steel or something
3 like that?

4 A (WITNESS ARRINGTON) Well, you perform a visual
5 inspection of the piece of material that you are talking
6 about, and I think it is quite easily determined at that
7 time that there is no damage. These things are stored
8 inside, so you don't have to worry about rust or
9 anything like that.

10 There is an inspection that is performed to
11 make sure there is nothing inside of the pipe; any sort
12 of debris, and there is no damage on the end preps. It
13 is very easily detected.

14 Q My question went beyond just this specific
15 audit finding. Maybe let me restate it.

16 Is it your testimony that damage always can be
17 detected visually?

18 A (WITNESS ARRINGTON) In most cases, it could be
19 or would be. But the material that we are talking about
20 that we are seeing in storage also receives testing
21 during the construction phase and during the
22 pre-operational phase that would indicate if there was
23 any damage. These things were put through their routine
24 operating conditions, and in some cases above the normal
25 operating conditions.

1 Q Is it your testimony that the testing, the
2 pre-op testing or whatever kind of testing is done,
3 necessarily will document any kind of damage, even some
4 sort of latent defects?

5 (Panel of witnesses conferring.)

6 A (WITNESS MUSELER) Let me just ask if we're
7 talking about the gate valves or the pipe, or are you
8 talking about anything --

9 Q I'm talking in general about damage. And you
10 certainly may comment, Mr. Museler, but I want Mr.
11 Arrington to answer.

12 A (WITNESS ARRINGTON) Not being personally
13 involved with all the pre-operational tests I couldn't
14 say for sure. But it is my belief that any damage that
15 would be picked up during this testing phase of the job
16 would be noted and correction would be made at that
17 point in time.

18 Q My question was a little different, Mr.
19 Arrington. I am sure that any damage that is noted in
20 testing will be picked up, or someone will try to pick
21 that up. But the question was more: is it your
22 testimony that the testing phase, together with the
23 visual observations that you've referenced before, will
24 necessarily pick up all damage that might result to
25 equipment from improper storage?

1 A (WITNESS ARRINGTON) I believe that that would
2 be picked up, yes.

3 Q Mr. Museler, did you want to add to that?

4 A (WITNESS MUSELER) Yes, Mr. Lanpher. When
5 observations are made by quality assurance personnel or
6 construction personnel or the engineering personell with
7 respect to the equipment that is in storage, either in
8 permanent storage or stored in place in the buildings,
9 there isn't any question but that the condition observed
10 might have an effect that was not immediately visually
11 apparent.

12 That question is referred to the engineering
13 department for evaluation, and while that does not occur
14 a large number of times, it does occur and has occurred,
15 and some pieces of equipment have been returned to the
16 manufacturers for either check-out or, in some cases,
17 refurbishing in order to insure that any potential
18 effect that could not be seen by an auditor or by a
19 field construction inspector would be reviewed by
20 engineering and by the manufacturer to ensure that the
21 equipment will perform as required.

22 And that has happened. We have sent equipment
23 back, electrical equipment, mechanical equipment, to
24 have it refurbished, to have it modified and in some
25 cases, replaced; in some cases, new equipment was

1 provided.

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1 A (WITNESS ARRINGTON) Mr. Lanpher, let me
2 clarify one point that I made. It is not clearcut in
3 every instance that there is or is not damage. If there
4 is doubt in the inspector's mind that there is a
5 possible damage as a result of whatever the condition
6 is, that information would be turned over to the
7 engineering department for evaluation. As Mr. Museler
8 indicated, we have had cases documented as such and the
9 piece of equipment would either be repaired on site or
10 sent back to the manufacturer to be replaced or
11 repaired.

12 I didn't mean to infer that it is clearcut
13 just based upon the visual inspection that there is
14 damage or is not damage at that point in time, but if
15 there is doubt, if the inspector, depending upon the
16 complexity of the piece of equipment, if there is doubt
17 in the inspector's mind that there is damage, then at
18 that point in time it would not be considered to be a
19 deficiency. It would be in his mind a deviation of the
20 specifications and it would be referred to the
21 engineer. He would make the determination based on his
22 knowledge of that piece of equipment as to whether or
23 not we have the expertise to do it on site or warranty
24 or whatever and send it back or fix that component.

25 [Counsel for Suffolk County conferring.]

1 Q Mr. Arrington, returning just briefly to FQC
2 Audit 15, finding D.7, you explained that the reason the
3 end caps weren't there was because of a strike on site.
4 This was an instance, however, or an instance that end
5 caps were supposed to have been required; is that
6 correct?

7 A (WITNESS ARRINGTON) They were required and
8 as I indicated and there is a note in the audit that
9 there was a work stoppage during the time of the audit.
10 That is the reason, in my opinion, why the end caps were
11 not on there. There weren't craft personnel on site.

12 Q And the auditor indicated that since the end
13 caps hadn't been provided, temporary covering should
14 have been provided; is that correct?

15 A (WITNESS ARRINGTON) Does he say that?

16 Q Look after the note, Mr. Arrington. I think
17 it is in the recommendation.

18 A (WITNESS ARRINGTON) Yes, he does note that.

19 Q Looking back on the previous page, I think my
20 initial question asked whether this violated LILCO's
21 procedures. There is also reference to ANSI N45.2.2.
22 Why is this reference included in this audit finding?

23 A (WITNESS ARRINGTON) It is the procedure that
24 is implemented at the -- QC Procedure 17.1 does meet the
25 requirements of ANSI Standard N45.2.2. The auditor

1 chose to reference both of those procedures there.

2 Q Then 17.1, the LILCO on-site procedure, is
3 LILCO's means of implementing or meeting the
4 requirements of the ANSI standard, is that correct?

5 A (WITNESS ARRINGTON) QC Procedure 17.1 is the
6 implementing procedure in this case for the storage of
7 material and equipment. That meets the requirements of
8 ANSI Standard N45.2.2. It is a site implementing
9 procedure.

10 Q Gentlemen, I would like to turn your attention
11 now to Field Audit 601 and Findings 4.1, 4.2 and 4.3. I
12 would like to ask whether each of these are instances
13 where valves in various warehouses, the main warehouse
14 and the far west warehouse, had no end caps applied in
15 violation of QC 17.1

16 [Panel of witnesses conferring.]

17 A (WITNESS KELLY) These are cases where end
18 caps were missing from items looked at during this
19 particular audit. I would like to point out, though,
20 that the main warehouse and the far west warehouse -- as
21 we said, the intent to have these covers on would be the
22 intent to protect the ends. For the most part in these
23 warehouses there is very little likelihood of that
24 occurring, and there was no indication of damage to any
25 of these ends.

1 JUDGE CARPENTER: Mr. Lanpher, I can't help
2 but break in.

3 Aren't these end caps normally furnished on
4 the items by the manufacturer? Do you field install
5 these end caps or are they normally supplied by the
6 manufacturer?

7 WITNESS MUSELER: In most instances, sir, they
8 are supplied by the manufacturer.

9 JUDGE CARPENTER: I don't understand why the
10 auditors weren't curious as to how the end caps were
11 getting removed in the warehouse.

12 [Panel of witnesses conferring.]

13 JUDGE CARPENTER: Specifically, Mr. Kelly,
14 back to your point about the fact that they were in the
15 main warehouse, the auditor found the end caps missing.
16 Does the programmer look at all as to what is happening,
17 what is happening to the end caps?

18 WITNESS KELLY: I would like to point out the
19 main warehouse, as the name would imply, is the main
20 warehouse. It is very, very large. The indication here
21 is that two valves didn't have end caps and another two
22 valves didn't have end caps, so we are talking about a
23 total of four valves. When the auditor would go through
24 that area, there would have been hundreds and hundreds
25 of valves and he would have identified all of those that

1 were missing, so we are talking about something that is
2 very limited in scope, extremely limited in scope.

3 A (WITNESS ARRINGTON) Judge Carpenter, these
4 end caps are taken off quite frequently sometimes by the
5 crafts personnel to perform measurements for the end
6 preps on the valves that are going to be installed. It
7 is not uncommon that these caps are not put back on
8 right away because there is some additional information
9 they might need and they might have to go back to
10 different work areas, but they do have to measure the
11 dimensions of the pipe for fit-up tolerances on the
12 spool pieces that they are going to be installed to.
13 And just so you get some idea of the end caps we are
14 talking about, we are talking about roughly 50,000 end
15 caps on the job site, so it does happen, unfortunately.

16 JUDGE CARPENTER: So I take it you think
17 probably they were moved deliberately and simply not
18 replaced?

19 A (WITNESS ARRINGTON) In this particular case I
20 couldn't say that, but based upon my experience with the
21 end cap problems, usually the crafts people -- these are
22 caps that are quite heavy, and when they take them off,
23 they do have tape on them. They fit quite snugly to the
24 piece of equipment. When they take them off, they don't
25 often like to put them back on right away if they know

1 they are going to go back to it.

2 And usually when they are in a protected
3 environment such as the warehouse or in the reactor
4 building where it is not exposed to the outside
5 elements, they don't, as I indicated, they don't often
6 put them back on right away if they know they are going
7 to take them back off maybe within several hours of that
8 day's shift. But with that number of caps on site, I
9 think that one would expect that you are going to have
10 this problem, and when the auditor goes out to perform
11 his inspection, he would not often have enough time to
12 go and find out whether or not they took it off and
13 forgot to put it back on or whether it had been off for
14 a week. He normally would note what he sees there, and
15 the corrective action would indicate that this
16 particular piece was in the process of being installed,
17 therefore that is the reason why it was off.

18 We don't deny that it was not on there, but
19 there is most often a reason for it, and usually it is
20 that, that it is being worked on to some extent.

21 JUDGE CARPENTER: But you don't take the time
22 to document that?

23 A (WITNESS ARRINGTON) No, sir. As I indicated,
24 the auditor in some cases he might, but in most cases,
25 when you are talking about the number of equipment that

1 is in the area, he would not be able to go back and find
2 out why that particular tap was off. But usually the
3 investigation as a result of the audit indicates that
4 there was work, there is evidence that there was work
5 that was taking place on that particular piece of
6 equipment. I am not saying in this case that was. I am
7 not trying to talk in general terms. But I am just
8 trying to give you a feel for the number of caps that we
9 are talking about, and they do get written up on
10 deficiency reports, aside from audits, and we have found
11 out at the site that most of the time the reason for
12 those things being taken off is because of measurements
13 or end prep operations that are going on with the
14 particular piece of equipment.

15 JUDGE CARPENTER: Thank you for giving me that
16 perspective.

17 WITNESS MUSELER: Judge Carpenter, Mr.
18 Arrington's comment also goes to a question you asked us
19 yesterday that we could not provide an answer for in the
20 specific instance you asked, and that is: What was the
21 population of the inspection that these findings applied
22 to?

23 In the case of the items that we are
24 discussing here, caps on pieces of pipe and caps on
25 valves, the population of the inspection is the entire

1 area being inspected. In the case of pipes, for
2 example, the inspection of the pipe storage yards
3 contain, depending upon the yard in question, hundreds
4 or thousands of pieces of pipe, all of which is looked
5 at because whether or not end caps are on is an easy
6 thing to observe. So that the number of inspection
7 findings in any given audit can be compared against the
8 total population of the piping in that area or the
9 valves in that area.

10 In the warehouse, such as we just discussed,
11 very large numbers of the valves were all stored in the
12 same areas of the warehouse or were all stored there, so
13 that the number of valves without end caps, whatever
14 that number is, five, ten, can be compared against
15 numbers in the hundreds. In the case of piping, pipe
16 spool is stored outside. The job had over 14,000 pipe
17 spools. They are stored in rather large areas, where
18 the numbers are typically or were typically certainly
19 not any more but were typically three and four thousand
20 pipe spools in the west storage yard alone, and in the
21 satellite yards closer to the building, hundreds of
22 pipes.

23 So that at least in the case of the end caps
24 with regard to valves and with regard to piping, the
25 population that you inquired about is the entire

1 population in that area. They didn't just inspect five
2 pipes. They went out and looked at all of the pipes in
3 that area.

4 JUDGE CARPENTER: Thank you for that
5 information.

6 BY MR. LANPHER (Resuming):

7 Q Mr. Museler, in terms of Field Audit 601 that
8 we have been talking about, do you have a basis for
9 determining the actual number of valves that were looked
10 at by the auditor in this audit? Or for Mr. Kelly.

11 [Panel of witnesses conferring.]

12 A (WITNESS KELLY) The indoor storage, as I said
13 before, for this type of audit, similar to our outdoor
14 program storage audits, would have been the total
15 population of what was in the main warehouse. That
16 number -- at this time I can't give you a definitive
17 number, obviously. I know it was in the hundreds at
18 this period of time.

19 A (WITNESS MUSELER) This time period, Mr.
20 Lanpher, mid-1977, the peak piping and valve
21 installation effort extended from 1976 through 1978.
22 There were upwards of 2500 large bore and upwards of
23 5000 -- that is probably a very conservative number --
24 of small bore valves at this time. At least half have
25 been installed, and not all were on the job site at the

1 time, but a large percentage were already delivered to
2 the job site. So the number is in the high hundreds, if
3 not the thousand range.

4 JUDGE BRENNER: That is for the main warehouse?

5 WITNESS MUSELER: Yes, sir. Most of the
6 valves would have been there.

7 JUDGE BRENNER: One of them is in the far west
8 warehouse. Do you have a feel for the number that would
9 be in that warehouse?

10 WITNESS MUSELER: That would be a considerably
11 smaller number, Judge Brenner. It might only be 50 or
12 100.

13 JUDGE BRENNER: Would they have all been
14 looked at as a part of this audit, Mr. Kelly?

15 WITNESS KELLY: Yes, sir.

16 BY MR. LANPHER (Resuming):

17 Q Gentlemen, turning your attention to Field
18 Audit 1180, Finding 4.3, am I correct that in this audit
19 the auditor identified uncapped openings in a panel
20 which had been previously identified as uncapped and
21 they continued to be in that state?

22 [Panel of witnesses conferring.]

23 A (WITNESS KELLY) Could you repeat the question
24 again, please?

25 Q Yes. Mr. Kelly, am I correct that the

1 auditors determined that there were uncapped openings on
2 the panel which was reviewed; that the state or
3 condition -- that is, being uncapped -- had existed from
4 a previous notice written approximately, well, written
5 in August 1980?

6 A (WITNESS KELLY) Yes, that is correct. The
7 item was fixed and there was no apparent damage.

8 Q So this is an example of opening without the
9 required end caps or the required capping, is that
10 correct?

11 A (WITNESS KELLY) This is a case where the
12 specific item was not capped at the time of the audit.

13 Q Now, looking at the first page of that audit,
14 this concerned safety-related instrumentation, correct?
15 This audit?

16 MR. ELLIS: Which number, again?

17 MR. LANPHER: Up at the top of the page, the
18 purpose.

19 WITNESS KELLY: Yes, that is correct.

20 BY MR. LANPHER (Resuming):

21 Q And in this audit the auditor looked at two
22 instrument panels, is that correct? Am I am referring
23 you to the front page, the scope section, the front page
24 of Field Audit 1180.

25 A (WITNESS KELLY) Yes, that is correct.

1 Q Gentlemen, returning to Field Audit 1234,
2 Finding 4.1, do you agree that one instrument that was
3 looked at during this audit lacked a cap for a conduit
4 opening?

5 A (WITNESS MUSELER) Mr. Lanpher, did you say
6 that only one instrument was looked at?

7 Q No, I said one instrument that was looked at.
8 [Panel of witnesses conferring.]

9 A (WITNESS MUSELER) Sir, this audit does
10 indicate that the instrument referred to in Finding 4.1
11 had an uncapped conduit opening -- that is the
12 electrical entry point -- as opposed to the piping and
13 tubing connections.

14 Q But you consider end caps or caps over
15 electrical conduit to be the same kind of requirement as
16 we have been talking about, that is, caps for piping or
17 tubing; correct?

18 A (WITNESS MUSELER) The requirement covers the
19 electrical openings as well as the process openings.

20 Q And the auditor in this instance found that
21 this situation violated ANSI and 45.2.2, Section 6.2(1),
22 which the auditor quoted as requiring items and storage
23 shall have all covers, caps, plugs or other closures
24 intact; correct?

25 A (WITNESS MUSELER) That was the auditor's

1 opinion, sir.

2 Q Mr. Kelly, you approved this audit also, is
3 that correct?

4 A (WITNESS KELLY) That is correct.

5 Q Now gentlemen, looking back at the handwritten
6 sheet that I provided to you we have talked about poor
7 findings in the end cap area. Those are FQC.15, Finding
8 D.7, and skip down to Field Audit 601, and we talked
9 about three findings there, 4.1, 4.2 and 4.3, and we
10 talked about Field Audit 1180, Finding 4.3, and Field
11 Audit 1234, Finding 4.1.

12 I would like to turn your attention to the
13 following audit findings, and I will read them off first
14 and then I will ask the questions so you know what my
15 universe is. Starting at the top, Field Audit 470,
16 Finding 4.9; FQC Audit 23, Finding D.5[3]; Field Audit
17 656, Finding 4.2; Field Audit 721, Finding 4.1 and 4.2.
18 Then skip one. Field Audit 803, Findings 4.3 and 4.4;
19 Field Audit 934, Findings 4.2 and 4.3; Field Audit 980,
20 Findings 4.2 and 4.3; Field Audit 1086, Findings 4.1 and
21 4.2.

22 JUDGE BRENNER: 1026?

23 BY MR. LANPHER: (Resuming)

24 Q That is what I meant to say, Field Audit 1026,
25 Findings 4.1 and 4.2; FQC Audit 33, page 2 of 3 and

1 Finding D.4; Field Audit 1086, Finding 4.2; FQC 34,
2 Finding N.2; and that's all.

3 Now gentlemen, with respect to these audits,
4 do you agree that each audit involved an instance where
5 required end caps or capping was not provided? And thus
6 to follow up on something Judge Brenner said, if we went
7 through each one of them, we would have a basically
8 repetitive kind of examination that maybe we can avoid.
9 You don't have to answer the second part of that.

10 [Panel of witnesses conferring.]

11 [Discussion off the record.]

12 WITNESS BALDWIN: Mr. Lanpher, FQC 34(N.2) has
13 three parts to it, A B and C. You are probably
14 addressing either "A" or "B."

15 MR. LANPHER: Mr. Baldwin, both "A" and "B" on
16 that audit.

17 WITNESS ARRINGTON: Mr. Lanpher, Item A is one
18 we discussed yesterday for the end cap.

19 BY MR. LANPHER (Resuming):

20 Q So you agree that is an example of --

21 A (WITNESS ARRINGTON) It is the same
22 observation we discussed yesterday. It is an end cap or
23 plastic covering over the end.

24 Q Thank you. And do you agree that Item B also
25 is an end cap situation in 2B?

1 [Panel of witnesses conferring.]

2 A (WITNESS MUSELER) Mr. Lanpher, we do agree
3 that all of the field audits and FQC audits that you
4 just listed relate to the lack of end caps for some
5 number of pipes and instruments and valves, by rough
6 count something in the neighborhood of perhaps 150,
7 although they are not all defined out of the population
8 of over 50,000 end caps on the job site. They do relate
9 to missing end caps at the time of the audit. Would you
10 like to discuss the significance of that?

11 Q No.

12 MR. LANPHER: I would like to move them into
13 evidence first of all, Judge Brenner. Judge Brenner, do
14 you want me to repeat the list?

15 JUDGE BRENNER: No.

16 MR. LANPHER: I also want to move into
17 evidence those that I asked specific questions on.

18 JUDGE BRENNER: I understood that, yes. It is
19 the entire list in that first break-off, except for
20 Field Audit 740, Finding 4.3, and except for FQC Audit
21 35. Is that it?

22 MR. LANPHER: No. You missed two others. And
23 except for Field Audit 980, Finding 4.1.

24 JUDGE BRENNER: And FQC 34, Finding K.3.

25 MR. LANPHER: Right.

1 MR. ELLIS: Judge Brenner, you said it is all
2 on which page? I have a list here.

3 JUDGE BRENNER: Maybe my attempt to shorten it
4 was not a good attempt. It is the list that is entitled
5 "Storage Group III," page 1 of 2, and only the first
6 grouping on that list. There are a total of three
7 groupings, and the first is by far the largest, and with
8 the exception of the ones just discussed.

9 MR. ELLIS: No objection except for the usual.

10 JUDGE BRENNER: Okay. They will be accepted
11 and moved into evidence.

12 [The documents referred to, being
13 FQC 15 (D.7); FA 470 (4.9);
14 FA 601 (4.1, 4.2, 4.3);
15 FQC 23(D.5[3]); FA 656 (4.2);
16 FA 721 (4.1, 4.2);
17 FA 803 (4.3, 4.4);
18 FA 934 (4.2, 4.3);
19 FA 980 (4.2, 4.3);
20 FA 1026 (4.1, 4.2);
21 FQC 33 (pg. 2 of 3 & D.4);
22 FA 1086 (4.2); FQC 34 (N.2);
23 FA 1180 (4.1, 4.3); and
24 FA 1234 (4.1),
25 were received into evidence.]

1 [Discussion off the record.]

2 BY MR. LANPHER (Resuming):

3 Q Gentlemen, turning to the bottom of the page,
4 FQC Audit 17, Finding D.4, and FQC 21, Finding D.7, do
5 these also fall into the same category, lacking end
6 caps, that we have just been discussing?

7 A (WITNESS ARRINGTON) Just a second.

8 [Panel of witnesses conferring.]

9 A (WITNESS ARRINGTON) The components that are
10 listed in Observation D.4, as is stated there, that
11 while equipment is in storage, it is required to have
12 end caps or covers or plugs, whatever is appropriate for
13 the equipment. In this particular case I think it is
14 important to note that these items were stored in a
15 Level A storage area, which is a controlled
16 environment. You could almost perform an operation in
17 there where we have humidity, dehumidifiers, air
18 conditioners.

19 This equipment is not required to be stored in
20 a Level A storage area. It was stored in there for a
21 matter of convenience. The auditor did note that the
22 end caps were not on there or the covers were not on
23 there. But I think it is important that you understand
24 that a Level A storing area is a place where you have no
25 construction equipment around it, there is no dirt, no

1 rainfall or whatever. It is the highest level of
2 storage area you can have. These items were stored in
3 the Level A storage area.

4 Q Mr. Arrington, my initial question -- I thank
5 you for the clarification -- also went to two audits,
6 and I take it you would agree, then, that FQC 17,
7 Finding D.4, is an example of end caps not being
8 provided; correct?

9 A (WITNESS ARRINGTON) In the strictest sense of
10 the word, that is true.

11 Q And do you agree also that FQC 21, Finding
12 D.7, is also such an instance?

13 JUDGE CARPENTER: Mr. Lanpher, you keep saying
14 end caps were not provided. Is that precisely what you
15 want to ask, or was it more that the end caps were
16 missing?

17 MR. LANPHER: That would be more precise,
18 Judge Carpenter. I think my bottom line is when the
19 auditor went and looked at the end caps, they were not
20 there. That is correct.

21 JUDGE CARPENTER: Well, I am not being overly
22 picky, I hope, but my point is where do the end caps
23 go? It is not a question of whether they are provided.
24 The program doesn't call for LILCO to provide the caps
25 as part of the quality assurance program. The auditors

1 are discovering that the caps undoubtedly came with the
2 equipment, have been removed and have disappeared. And
3 I don't see any attention to that, looking at the
4 underlying causes for that disappearance, which should
5 be a central element of this quality assurance program.

6 I am not being picky except for that purpose.
7 I don't understand a failure to focus on this. I
8 earlier heard that caps were removed because dimensions
9 might be needed to be looked at. In this case there are
10 seven diaphragm valves. I can't help but wonder why all
11 seven were uncovered for some reason. Do you see my
12 point on the different distinction between providing the
13 caps and finding the caps missing but not asking why?

14 WITNESS KELLY: Could I answer your questions?

15 JUDGE CARPENTER: Please.

16 WITNESS KELLY: I think, as we pointed out,
17 especially in the area where we were talking about
18 storage areas, we are identifying maybe four caps being
19 missing out of a population of hundreds. It is just a
20 matter of put another cap on. I mean you are talking
21 about something that is really, in reality, considering
22 the storage of the item in an area where the access is
23 controlled, you are talking about it is enclosed, the
24 material is properly stacked, it wouldn't be subject to
25 damage, really, in the first place, you are talking

1 about something that is extremely insignificant.

2 WITNESS ARRINGTON: Judge Carpenter, I would
3 like to add that it doesn't mean that the end caps are
4 not available in the area. They were missing from the
5 end of the component itself. They could be on the floor,
6 they could be in the area. Some of these end caps are
7 plastic covers, and in order to take them off, sometimes
8 they have to be enlarged in order to break them up, just
9 like a cap on the end of a conduit. It is a plastic cap
10 that is screwed on the end of the conduit. In order to
11 take it off, sometimes you split the cap, so therefore
12 you throw the cap away, you go to the bin and you bring
13 out a new plastic cap and you put it back on.

14 I think what is important to note is that the
15 auditor is saying the cap is not installed on the end of
16 the equipment. It doesn't mean that they are not on
17 site. We have spare caps and these components were
18 received with the caps on them. As I indicated earlier,
19 sometimes there are inspections or construction
20 activities on the equipment and these caps are not taken
21 off. They are not thrown away. As is indicated in the
22 audit, they are not on the end of the equipment itself.

23 JUDGE CARPENTER: Mr. Arrington, it is very
24 easy for me to understand what you just said. However,
25 in this case there were seven diaphragm valves in Bin

1 42, which all have missing caps. That isn't compatible,
2 I think, with -- I am very frustrated here that the
3 program doesn't provide documentation of how the
4 occurrence of each audit finding was resolved. I have
5 heard this morning that in some way it is that people
6 talk to each other and all of that is not documented in
7 any way for anyone to look at, and I think that is why I
8 have so much trouble taking a simple explanation for why
9 caps were removed. I can't imagine that these valves
10 were delivered without caps, and on the occasion of
11 their in some way getting off the valve, the individual
12 involved didn't bother to go and get a spare and put it
13 on. Isn't that a correct interpretation?

14 WITNESS ARRIN TON: In some cases with small
15 components sometimes they are received in boxes
16 themselves. They may not necessarily have caps on them
17 because they are packed in a unique package and in order
18 to perform an inspection on that component to check to
19 make sure that the condition as it arrives on site is
20 acceptable, you have to open that package up, the
21 container that it is received in, and take this
22 component outside of the package itself, and then the
23 caps would be put on it.

24 The thing that I pointed out to Mr. Lanpher
25 was the fact that these were stored in a Level A storage

1 area. These are unique in the fact that they are put
2 in a controlled environment that is the highest grade of
3 storage level that would be required. These are not
4 required to be in that storage level necessarily. They
5 have a lower storage level requirement. They were put
6 into this Storage Level A area for a matter of
7 convenience. You are not going to have debris, you are
8 not going to have water, you are not going to have
9 moisture in there because there are humidifiers and air
10 conditioners. So I think that there was a judgment that
11 was made.

12 Specifications and procedures indicate that at
13 all times when a piece of equipment is in storage that
14 it has a cap on it, that doesn't say that if you are
15 getting ready to install it, that you are allowed to
16 take the cap off. As Mr. Museler indicated earlier,
17 there is a certain amount of judgment where we know we
18 have to take these caps off in order to get it
19 installed. So that is one of the reasons why we have
20 caps that are not on at the time the auditor is out
21 there.

22 This is a unique situation here where they
23 were in a controlled environment where, in my judgment,
24 the cap would not be necessary, although the procedure
25 does call for it, and we indicated that we agree that in

1 the strictest sense of the word, the cap was required
2 and it was not on there. But we are just trying to
3 indicate to everyone that there is no damage as a result
4 of that because of the environment that it is in. If it
5 was outside in the Level D storage area, I would not
6 agree with that.

7 WITNESS MUSELER: Judge Carpenter, I believe
8 your question also went to why is there not a more
9 definitive documentation trail for what happened in each
10 case of this nature, why were the end caps not on, and
11 perhaps why were they not put back on after some
12 operation and measurement was performed.

13 And I think the answer to that 's that the
14 amount of documentation required by the quality
15 assurance program is roughly proportional to the
16 importance of the particular quality requirement that we
17 are dealing with in the hierarchy of quality assurance
18 requirements in terms of potential impact on equipment.
19 This is not very high up in that hierarchy.

20 And the way through, I guess, the development
21 of any human enterprise, those things that are most
22 important, I believe properly, get the maximum
23 documentation trail. The documentation trail of things
24 involving material transfers for welding, for instance,
25 is a huge documentation trail that documents, I believe,

1 almost every single step somebody could conceive of
2 documenting. In the case of end caps, it does not do
3 that. The documentation trail is just not part of the
4 program. It can probably be debated whether it ought to
5 be, but it is not because it is in the low level of the
6 hierarchy in terms of the quality assurance requirements.

7 JUDGE CARPENTER: Mr. Lanpher, I didn't really
8 mean to interrupt you for so long, but I still feel the
9 fact that the program is not supposed to provide the end
10 caps -- what the audit reports are demonstrating is that
11 the caps were missing, and I think it is very important
12 in terms of the programs under Roman numeral XVIII of
13 Part P should have addressed the question of what is
14 causing these observations and some sort of remedial
15 action which apparently was taken, but they are
16 testifying now that there is no documentation that you
17 can ask for, coming back to your complete package
18 question earlier, that we can ask for and show it to the
19 Board.

20 And we have just heard in the testimony that
21 for this level it is doubtful that we can find the
22 complete documentation of what conversation and what
23 exit interviews were held. So that is why I did think
24 it was important to focus on the fact that accounts are
25 missing and the program failed to provide them.

1 WITNESS ARRINGTON: Judge Carpenter, could I
2 respond to that, please? There is documentation, is
3 what I am referring to, that corrective action was
4 taken. And as I indicated earlier, when you consider
5 the total population you have to, and being involved
6 with the process, you have to realize that when you have
7 got that many components out there and with an end cap
8 not being installed on the end of a spool piece, if
9 there is no damage as a result of that cap not being
10 there, then you could take it one step further that the
11 cap was not required up until that point. There was no
12 damage. One of the reasons for the end cap is to
13 protect it from deterioration or damage. If you can
14 determine that, then you know that the end cap not being
15 on there, whether it was off for one day or one week,
16 would not have had any effect on it and that inspection
17 is performed and it is documented by the construction
18 and the inspection department.

19 We do have documentation indicating that these
20 items were corrected, and we do try to find out and we
21 would find out what the cause of the problem is, but we
22 have to consider the population of the pieces of
23 equipment we are talking about, and we are talking about
24 in excess of 50,000 caps out there, and if we went into
25 an area and we found that there were 500 spool pieces

1 and there was a large number of spool pieces that did
2 not have caps on them, we would be concerned with it and
3 we would take action to find out what caused it: was
4 there a difference in supervisory personnel that were not
5 aware of it, or what caused that?

6 And I think we do that in every case. We take
7 these things, even though they are not considered as
8 important as some of the other items that we do, but we
9 go back to find out what caused it and then take
10 appropriate action. We do have documentation to
11 indicate that corrective action was taken, that an
12 inspection was performed to make sure that there was no
13 damage in every case.

14 JUDGE MORRIS: I was going to get into this
15 subject but I was postponing it in order not to
16 interrupt Mr. Lanpher, but since he is interrupted, I
17 think it is appropriate to pursue it a little at this
18 point.

19 Am I correct that the quality assurance
20 inspectors, whether they are doing the FQCs or the FAs,
21 have no responsibility for correcting the situations
22 they find?

23 WITNESS ARRINGTON: That is correct. They
24 identify on a report and then it is turned over to the
25 appropriate organization for corrective action.

1 JUDGE MORRIS: And is it also correct that
2 that organization, whatever it is, has to respond?

3 WITNESS ARRINGTON: Yes, it is. And in each
4 case they do respond.

5 JUDGE MORRIS: On each finding?

6 WITNESS ARRINGTON: On each finding. Or if
7 there are groups, they would collectively respond on one
8 letterhead, possibly, indicating what their total
9 corrective action was for a series of items that was
10 identified to them.

11 JUDGE MORRIS: And what is the distribution of
12 that response?

13 WITNESS ARRINGTON: It varies. It will go
14 back to the quality assurance organization. There would
15 be some distribution to management, but it would depend
16 upon whom the individual is as to who his manager was,
17 but there is distribution to the quality organizations,
18 to the individuals that were responsible for the
19 corrective action, and to at least their department
20 heads.

21 JUDGE MORRIS: So is there some single system
22 of follow-up to see that items are closed out, or is
23 that up to the individual organizations that have been
24 assigned the action, so to speak?

25 WITNESS ARRINGTON: Each organization has a

1 documented requirement for follow-up. It may vary a
2 little bit from one organization, be it LILCO or Stone &
3 Webster. That would be the only difference. But there
4 is a requirement that follow-up action be taken to
5 indicate that the corrective action was taken, or in the
6 case that they disagree with it, they would have to
7 indicate why they disagree with that finding, and the
8 auditing organization would have to agree that at that
9 point in time it was an oversight on the auditor's part
10 and therefore it was not a violation; but in every case
11 it would be required to respond.

12 WITNESS MUSELER: Judge Morris, I believe your
13 question was is there a follow-up mechanism to assure
14 that all of those items are closed out; and the answer
15 to that is yes. The construction organization is
16 generally responsible for correcting, and we have our
17 own internal procedures to ensure that those are closed
18 out.

19 However, I can state from first-hand knowledge
20 that although I don't know what systems they use, the
21 quality assurance organizations have a follow-up
22 procedure to ensure that every one of the findings that
23 they write is properly responded to. If they are
24 overdue, I hear about it or my superintendents hear
25 about it, and so there are at least two independent

1 follow-up mechanisms: the one we use to ensure that the
2 corrective action is performed because we are
3 responsible for performing it, and the follow-up systems
4 on the quality assurance organization, both Stone &
5 Webster's and LILCO's, to assure that we do perform the
6 corrective action that they have called for in these
7 audits.

8 WITNESS BALDWIN: Judge Morris, if I may add
9 to that, the FQC audits that we have been talking about
10 frequently in relation to the corrective action, as Mr.
11 Arrington indicated, the auditor would identify the
12 observation in the finding and would give a
13 recommendation to the audited organization. Now, the
14 system requires that he in a timely manner within a
15 certain period of time respond to the observation and to
16 the recommendation as to the exact corrective and
17 preventive actions that organization is going to take.

18 Now, on receipt of that response, that formal
19 response which is distributed to the major parties
20 involved in that audit, be it construction or
21 engineering or quality assurance, the auditor plus the
22 lead auditor plus the supervisor would review those
23 responses. If they felt that the response was adequate
24 and satisfactory, they would indicate that by different
25 logging devices. They would also on the next audit

1 follow up on those actions to see that they were
2 adequately fulfilled.

3 It has happened on some occasions when in
4 receipt of those responses, the auditor, after reviewing
5 them with his leader or supervisor, would then respond
6 back to the audited organization saying that what you
7 have identified as corrective and preventive action does
8 not totally meet the requirement, it is not totally
9 adequate, you need more. And then another response
10 would come back, and again, if that be satisfactory,
11 then it would be checked on the next audit during the
12 corrective action phase. Those are identified in many
13 of these audits by the letters "K" in the audit reports.
14 If you see a "K," that is a follow-up from a previous
15 audit.

16 JUDGE MORRIS: Does your organization, Mr.
17 Baldwin, go back and review history, so to speak, to see
18 if there is any pattern in the kinds of observations or
19 the kinds of equipment that are being reported through
20 these observations?

21 WITNESS BALDWIN: In regard to that, Judge
22 Morris, the mechanisms that are used by the auditing
23 group and auditors, they identify in their audit plans
24 the attributes that are going to be used. For instance,
25 let's talk about storage and housekeeping. As I recall,

1 the typical audit plan that is used on a construction
2 site such as Shoreham has an audit plan that is made up
3 of approximately 200 to 300 attributes, which would come
4 to the procedures that we have been talking about, and
5 in the different requirements that would form the basis
6 for the auditor when he is doing the audit to check into
7 those questions, looking at certain populations such as
8 have been mentioned by Mr. Kelly and Mr. Museler -- for
9 instance, end caps. If they were out in the southwest
10 forty looking at pipe, the auditor would go out in the
11 area and walk the whole perimeter and walk all of the
12 aisles specifically looking for attributes such as caps
13 or covers. In essence he would be looking at that whole
14 population, whatever that may be, hundreds or thousands,
15 and would indicate what is satisfactory or
16 unsatisfactory.

17 That type of audit plan with those types of
18 questions or those types of attributes and numbers,
19 populations, are captured within a whole system, and one
20 will look at not only one project such as Shoreham but
21 at others for similarities. They will look at, for
22 instance, at Shoreham back to see what types of
23 populations they have had in the past and the amounts of
24 checks we have had, and where we have had anomalies, and
25 that may cause adjustment to the areas of attention, of

1 the frequency of auditing within, say, a calendar year,
2 and that this would naturally be discussed with the
3 client and he would add information also, such as what
4 Mr. Kelly has, and we would come to a conclusion of the
5 schedule and the topics that would be used for a given
6 audit at the construction site.

7 So to answer your question: yes, we have
8 looked at what has gone on in the past and then compare
9 it, but I guess you could say we would be looking for a
10 pattern, and if you feel that there is one that exists
11 and we suspect that one exists and should be audited
12 again more frequently than its scheduled time, then that
13 would be discussed with the parties involved.

14 Does that answer your question?

15 JUDGE MORRIS: I think so, yes.

16 Mr. Arrington, I think you started to allude,
17 or maybe I read something into what you said, to taking
18 into account the importance of an object in deciding,
19 let me say, the vigor with which you pursued corrective
20 action based upon some kind of QA observation. Was I
21 correct in that?

22 WITNESS ARRINGTON: Yes, sir. I think that I
23 indicated that the end caps are important as far as
24 damage or deterioration to the component itself. When
25 an end cap is identified to my organization as not being

1 in place, we do check to see whether or not there was
2 any damage. The damage is the most important,
3 deterioration would be the most important factor that we
4 would be looking for, and not the fact that the cap was
5 off and are we going to have the cap put back on. So we
6 do look to make sure that the caps are on, but when a
7 cap is not on, I don't get overly excited because I know
8 the total population. I have to get more information
9 like how many end caps were missing in a particular
10 area.

11 And I think I gave an example that if it was
12 in one area where we had several hundred spool pieces
13 and there were several spool pieces and a high
14 percentage that was missing, that would indicate to me
15 that there is a possible change in personnel in the area
16 that may not be aware that end caps are required to be
17 on there. We would go back to find out what caused the
18 problem, why do we have so many end caps missing in a
19 particular area.

20 I don't recall any such patterns. Maybe in
21 the early stages of the job there were some isolated
22 cases where caps were taken off for the dimensional
23 checks that are required in order to prep that pipe for
24 its installation and the supervisory personnel may not
25 have put them back on at that time, but I don't recall

1 any particular pattern that we have had with end caps.
2 I don't think, and this is my opinion, that
3 the items that we have discussed with end caps in the
4 last couple of days, that there is any sort of pattern
5 there. Because of the total population, I don't
6 consider 15 or 20 different audit findings that indicate
7 that the caps were not on there as being a pattern, so I
8 don't consider the cap being off as important. And it
9 should be there, but we go one step further to make sure
10 that there is no damage as a result of it not being
11 there. That is wht I was referring to.

12 JUDGE MORRIS: Would the inspector look around
13 to see if the end cap had been taken off and put on the
14 floor next to the item?

15 WITNESS ARRINGTON: Yes, sir, my inspectors
16 would do that. These observations we are talking about
17 here are by auditors that are on site for roughly one
18 week at a time. My inspectors do a constant
19 surveillance of all of the areas on a monthly basis, all
20 areas. I have a full-time inspector that covers the
21 entire site for safety-related items, and we look at all
22 areas once a month and all items are looked at once a
23 year as far as storage is concerned, preventative
24 maintenance inspections.

25 JUDGE MORRIS: My point was simply that the

1 observations say that the cap is not in place and they
2 stop right there.

3 WITNESS ARRINGTON: Yes.

4 JUDGE MORRIS: Does the inspector take into
5 account that it might be sitting on the bench right next
6 door to the component?

7 WITNESS ARRINGTON: As I indicated, the
8 auditor would simply state, because he would not have
9 the time to look around -- I don't think that we found
10 any case that he indicates that the caps were on the
11 floor but they were not on the spool piece or the
12 component itself. He just indicates that it is not
13 where it belongs. It has been our experience that in
14 most cases they are within the area. The plastic cap
15 sometimes is damaged when you take it off and you go to
16 the storage bin and you install a new cap, but it has
17 been my experience with my inspectors' observations that
18 the caps are in the vicinity because these things most
19 often are being worked on because they do arrive with
20 the caps on, and the caps don't fall off, they are taken
21 off because of some construction activity around them.

22 WITNESS MUSELER: We would never get credit
23 for the cap being right next to the pipe if the pipe
24 wasn't on the end of the pipe.

25 JUDGE MORRIS: Well, I think we have discussed

1 that enough. Thanks.

2 JUDGE BRENNER: Let me mention one thing and
3 then I will attempt to remind you where you were, Mr.
4 Lanpher, so you can combine the two you were going to
5 move into evidence. This is going to be unfair as a
6 question, so I will just record it as a comment now. It
7 would be fairer question if I remembered the particular
8 audit and therefore I knew better what I was talking
9 about, which always helps in life.

10 You mentioned the lack of any patterns, Mr.
11 Arrington. I recall one finding where the auditor, at
12 least in the finding, discussed, mentioned his view that
13 apparently Courter personnel were not aware of the
14 requirement, and I don't remember this moment if it was
15 and capping or the other form of covering.

16 WITNESS ARRINGTON: I don't recall it with
17 protective coatings. I do recall a statement that was
18 made in the CDR system where they indicated they were
19 not aware of the requirement.

20 JUDGE BRENNER: I don't mean that one.

21 WITNESS ARRINGTON: I don't recall an
22 observation that was discussed that they talked about
23 Courter not being aware of it. You could be right. I
24 just don't remember it.

25 JUDGE BRENNER: I believe it was one that came

1 up yesterday or today in the protective covering area.
2 I don't remember if it was a covering or an end cap, but
3 we will leave it at that since I can't help you any
4 further, as I said, in order to pursue it.

5 WITNESS ARRINGTON: We could check on that if
6 you would like.

7 JUDGE BRENNER: If the County knows which one
8 it is, maybe off the record they can tell LILCO's
9 counsel. Otherwise, I will see if I can find it. I
10 didn't want to pursue it now so much as highlight it as
11 an area that caught my eye juxtaposed against Mr.
12 Arrington's statement, and I will leave it at that.

13 Mr. Lanpher, you were asking questions and, I
14 believe, preparing to move into evidence FQC 17, Finding
15 D.4, and FQC 21, Finding D.7. You had, I think,
16 completed the questions on FQC 17, which is the one
17 which is in a storage area. I don't know if you were
18 going to ask another question or two about FQC 21 or not.

19 MR. LANPHER: My recollection isn't very good.
20 I'm not sure that I ever got an answer to my original
21 question on FQC 21, Finding D.7, whether the witnesses
22 would confirm that this is an end-capping problem. I
23 think we got off on 17.

24 JUDGE BRENNER: Well, that is the question now.

25 [Panel of witnesses conferring.]

1 WITNESS MUSELER: It is not an end-capping
2 type problem, Mr. Lanpher.

3 [Counsel for Suffolk County conferring.]

4 BY MR. LANPHER (Resuming):

5 Q Mr. Museler, is this a covering problem?

6 A (WITNESS MUSELER) It is a protective covering
7 type finding, yes, sir.

8 MR. LANPHER: Judge Brenner, I would like to
9 move FQC 17, Finding D.4, into evidence as an example of
10 an end-capping matter or an incidence, and FQC 21,
11 Finding D.7, as an instance of a covering matter.

12 JUDGE BRENNER: I personally would like to
13 know a little more about FQC 21, D.7. I mean you will
14 get it into evidence, Mr. Lanpher.

15 MR. LANPHER: I was going to pursue it. I am
16 trying to keep track of things.

17 JUDGE BRENNER: All right. You are going to
18 ask more questions about this?

19 MR. LANPHER: Yes, I am. I am going to ask
20 some more on 17 also, for that matter.

21 JUDGE BRENNER: Now at this time?

22 MR. LANPHER: Yes.

23 JUDGE BRENNER: I think it is more comfortable
24 for Mr. Ellis, at least, and preferred from the point of
25 view of the record that you ask the questions you are

1 going to ask about it before you move it into evidence.
2 I am not saying that if these were all of the questions
3 you were going to ask, we would prohibit your moving it
4 into evidence, but as a practical matter, we would then
5 have a full picture.

6 MR. LANPHER: Very well. Just one moment.

7 JUDGE BRENNER: I don't see any harm to
8 anything you need to accomplish if we do that.

9 MR. LANPHER: Neither do I. It is just I was
10 trying to keep track, very frankly, of where I was and
11 what was being moved in.

12 JUDGE BRENNER: We were going to break for
13 lunch around this time. Do you want to break now? You
14 have got everything moved in that you asked about so far
15 on that page other than these two items, which we could
16 come back to right after lunch, or you can ask now
17 whatever you like.

18 MR. LANPHER: Why don't we take the break now?

19 JUDGE BRENNER: I will tell you why I made the
20 comment about the last item. There appears possibly to
21 be a difference between something in storage as
22 distinguished from what was involved with the equipment
23 in some process of installation, and I don't know where
24 in the process it is exactly from that last finding.
25 That was the reason I raised it.

1 Well, let's take the usual hour and 15 minutes
2 and come back at 1:35. But before we adjourn, when we
3 do come back we are going to discuss your request for
4 the audit responses, and we have already had the
5 preliminary response from Mr. Ellis.

6 While you are all thinking about it, consider
7 whether the population might be narrowed to those
8 written responses that the witnesses are going to rely
9 upon for their answers, and in describing the problem
10 usually in the direction of what is really involved
11 here, it is not as bad as one might infer from simply
12 the audit finding, to put it bluntly.

13 MR. LANPHER: Judge Brenner, I will discuss
14 this. It seems to me also, and one of the things I was
15 going to follow up and will follow up on Judge
16 Carpenter's statements before, it would not only be
17 corrective action or the response but the documentation
18 of steps to determine the cause, that it wasn't because
19 someone is working on this end cap and just had later
20 decided during lunch or whatever if there were
21 documentation as to those steps, that might be very
22 helpful too.

23 JUDGE BRENNER: Well, you can discuss it among
24 yourselves, but I can tell you now you are running late
25 with respect to requests for documents, and we will bear

1 in mind the needs of the case and what we think is
2 important to our record when we come back and discuss
3 it. And I want to get a better handle when we do
4 discuss it what kind of paper is involved. It is my
5 impression that there is a response and sometimes that
6 response indicates the type of things you are talking
7 about, Mr. Lanpher, and sometimes it may not.

8 So we will come back at 1:35.

9 [Whereupon, at 12:20 p.m. the hearing was
10 recessed, to reconvene at 1:35 p.m. the same day.]

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1 AFTERNOON SESSION

2 (1:40 p.m.)

3 JUDGE BRENNER: Okay, we are back on the
4 record now.

5 We wanted to come back to the request of the
6 County for the documents. I guess I'm not sure I
7 understand the scope of the request, given some dialogue
8 we had this morning. So why don't you tell me again
9 what the County wants and then we will ask Mr. Ellis to
10 respond.

11 MR. LANPHER: Yes, Judge Brenner. What the
12 County thinks would help to speed up and maybe avoid
13 going through some findings would be to -- or ideally
14 would be to have what I call the complete audit report
15 package, which I believe I'm correct, if you look at
16 attachment 27 to the prefiled testimony -- we will spend
17 some time on that. That would be the complete audit
18 report package.

19 It is a pretty massive document, I would
20 agree. And if you look at attachment 26 to the LILCO
21 testimony, that is a good bit smaller package which
22 consists mainly of the reply to the audit observations
23 and several immediately pertinent letters that would
24 relate to it. It does not include the complete audit
25 checklist and everything else in the audit plan that was

1 pursued.

2 And so, as to those audit findings which the
3 County has designated for use in the cross-examination,
4 not for complete audits but for audit findings, we would
5 like to get to the backup material, which would include
6 the reply information.

7 JUDGE BRENNER: For the findings that you have
8 provided on your handwritten sheets that you are going
9 to ask about?

10 MR. LANPHER: Yes, sir.

11 JUDGE BRENNER: Mr. Ellis?

12 MR. EARLEY: Judge, I will respond to that.
13 Mr. Lanpher's example provides a vivid example of why it
14 is burdensome and unfair at this juncture to have LILCO
15 produce the information that he has requested. If you
16 take a look at the size of the material that is attached
17 in LILCO attachment 27 to the testimony, I would guess
18 there are several hundred pages there.

19 Now, he points to number 26 that is somewhat
20 smaller. I think that that is just coincidental, that
21 one happens to be smaller, and that is going to happen.
22 Some of the audit findings that we are discussing may
23 have a small amount of documentation. There are others
24 that have large amounts of documentation attached to
25 them.

1 He points to these audits as audit packages.
2 I think I should say that this was prepared and pulled
3 together as part of LILCO's written prefiled testimony.
4 And I think to give the Board an idea of what we are
5 talking about, we ought to go through the process that
6 our witnesses have been using to become familiar with
7 the materials that we are discussing.

8 What they have been doing, usually the first
9 step is to talk to the auditor who is involved with a
10 particular finding. That auditor then has the task of
11 going out and looking at the documentation related to a
12 particular finding. The first step may be, as shown
13 here in one of the attachments, the audit with the reply
14 block filled in, but that is only the first, the very
15 first step that he takes.

16 He then has to go out and look at all of the
17 information that relates to the particular audit finding
18 -- that information, some of it may be in Boston, some
19 of it is in Hicksville, some of it is at Shoreham -- and
20 go through that all. Given his knowledge and his
21 background, having been involved in it, he knows exactly
22 where to go to find this information, take a look at it,
23 come back, and report back to the witness, discuss it
24 with the witness.

25 The witnesses do have some general information

1 that is available. Just to give you an example, we
2 shipped 40 boxes of materials down here to Bethesda.
3 That was the logistical problem that Mr. Reveley was
4 referring to. So it is not as simple as producing the
5 package of materials for an audit finding.

6 The fact that this request comes at this
7 point, while the witnesses are trying their best to
8 prepare to testify, is just too burdensome and too
9 late. The request for documents back in March and April
10 the Board thought was too late and ruled on a close call
11 that the County had access to the materials.

12 The County did nothing with those materials
13 until recently. There was nothing mentioned in the
14 direct testimony. As we pointed out in our motion, we
15 don't think enough was done up until the hearing got
16 started. In fact, the Board had insisted that the
17 County designate certain portions of documents that they
18 were going to use.

19 So if the purpose is to speed the hearing up,
20 we don't think that is going to be accomplished by
21 having to go out and produce a large volume of
22 material.

23 JUDGE BRENNER: What about just the reply
24 portion? And of course, we have noted that the format
25 of the forms has changed over time and varies somewhat

1 between engineering assurance audits and FQC audits and
2 so on. But the document that is meant to supply that
3 function sometimes is a reply box on the form and
4 sometimes, depending upon the time frame, was done as a
5 memorandum.

6 Are those immediate replies available as
7 having been pulled together as a part of LILCO's
8 preparation or otherwise readily available?

9 MR. EARLEY: Judge, you recognize, one of the
10 problems is, there are different formats. And when we
11 were doing engineering assurance audits there were
12 various changes in formats, and eventually we got to a
13 format where there was a reply block available.

14 I don't know whether we have all of them
15 available. We have some of the documents available with
16 the reply blocks. I don't know whether we've got them
17 all immediately available, because there are different
18 formats that have been used over the years and by
19 different organizations. The replies may vary. The
20 reply itself may be found in another memorandum. It may
21 be just a cover memorandum that references other
22 documents. So the reply itself may be very large.

23 So I don't think there is one piece of paper
24 that we could say, this is the reply. And I think also,
25 we have seen with the audit findings themselves and the

1 audit observations, when you've got a limited area, for
2 example in those reply blocks, that the auditor has to
3 write down or the person replying writes the response,
4 many times those are summaries of what is being done and
5 reference other materials and reference other procedures
6 and reference engineering documentation.

7 JUDGE BRENNER: I understand that, but I was
8 just restricting it to that first level in my question.
9 And I think you answered the question.

10 What about a further limitation along the
11 lines that I suggested before the break of only those
12 immediate -- not immediate, but only those that are the
13 actual reply, whether it be part of the reply form or a
14 memorandum, but not the backup documentation that was
15 taken into account in the formulation of the reply? And
16 in that group of only the reply, only those with replies
17 that the witnesses as part of their preparation here
18 would rely upon in order to explain what in their view
19 is an important material circumstance about the incident
20 noted in the audit that the record should know about?

21 MR. EARLEY: Judge, we have thought about
22 possibilities and think that an appropriate way to go
23 might be, if we are trying to expedite the proceeding --
24 and Mr. Brenner -- I mean, Mr. Lanpher seemed concerned
25 with having to ask questions and then find out that in

1 fact the auditor was mistaken and that when research was
2 done that the problem that was written down in the
3 finding wasn't really a problem.

4 And what we think we can do is go through his
5 list when he gives them to us and decide which of the
6 findings that he has indicated we believe are incorrect
7 and provide the reply for that particular finding that
8 we are going to say it was not a correct finding. And
9 additionally, we will then go ahead and tell him whether
10 we agree or disagree with his groups, as we have been
11 doing, trying to be as specific as possible. And that
12 will preclude him from having to go through and ask
13 questions to elicit the information about the ones we
14 disagree with.

15 Now, he may want to ask questions anyway, but
16 I think that will avoid the problem that I think Mr.
17 Lanpher was worried about.

18 JUDGE BRENNER: All right. Mr. Lanpher, I
19 want to make a few observations as to the timeliness, to
20 give you this opportunity to note something that I'm
21 leaving out. If you believe that is the case, tell me
22 whether the observation is incorrect.

23 There could have been objections that the
24 audits being provided do not comply with the request
25 because what you've now called the entire package of the

1 replies were not provided. And I have a way of
2 forgetting time, but this would have been back in the
3 April to June period, broadly. And there were no such
4 objections by the County.

5 Beyond that, when we first started the quality
6 assurance litigation -- and again, time has a way of
7 escaping my memory in this proceeding, but it was early
8 in September -- we mentioned the fact that the replies
9 were not here. And no request was made at that time,
10 which would have been approximately six weeks ago.

11 Am I correct about those two observations?

12 MR. LANPHER: Whenever you made that comment,
13 some time the week of the 14th or the week of the 21st
14 --

15 JUDGE BRENNER: Okay. Well, it was apparent
16 even before I made the comment that the replies were not
17 present, and you had already proceeded to cross-examine
18 on the audits as they were in your exhibits. Plus, I
19 made the comment at some point in September.

20 MR. LANPHER: I don't know what I'm supposed
21 to say in response to that.

22 JUDGE BRENNER: Well, your request is late for
23 those reasons, given those time periods. And I see no
24 good cause why the request should not have been made
25 back at the discovery phase, and at the very latest in

1 September.

2 MR. LANPHER: Judge Brenner, it was not
3 apparent to me before your comments in September that
4 the audits would not stand for what they said. I was
5 surprised by the amount of explanation that the
6 witnesses felt necessary to provide regarding the
7 audits.

8 You are right, I think that I could have
9 formally asked for those whenever you made those
10 comments or around that time, in mid-September. I don't
11 recall if I said it on the record, I may have said
12 something to the effect that I think that that would
13 have been helpful.

14 I didn't formally ask for them until, I guess,
15 my October 6th letter to LILCO.

16 JUDGE BRENNER: Does the Staff have a position
17 on this?

18 MR. BORDENICK: No, Judge Brenner, other than
19 to note that the request is somewhat untimely. As to
20 the question of whether or not it would advance the
21 proceeding or the pace of the cross-examination, I will
22 leave that to the parties involved and the Board.

23 MR. EARLEY: Now, may I say something about
24 the timeliness aspect? This is the fourth year that
25 I've been involved in this particular proceeding, and I

1 recall at least two and a half and possibly three years
2 ago sitting in on a number of discussions and informal
3 meetings with the County. Many of them involved
4 discussions about QA. We have spent many hours in the
5 past with the County.

6 I think we went through this argument when we
7 argued back in March about the timeliness of the
8 request, because the company had gone a long way in
9 trying to provide information on quality assurance. We
10 thought the request in March was untimely. I think the
11 Board then indicated that it was a close call.

12 Certainly now a request for the number of
13 documents that would be included in the scope of Mr.
14 Lanpher's request would be too burdensome and much too
15 untimely, given the whole history of the Shoreham
16 proceeding, not just the history since we actually got
17 into hearings.

18 (Board conferring.)

19 JUDGE BRENNER: We are going to deny the
20 request, except to the extent that LILCO indicated --
21 the extent to which LILCO indicated it was willing to
22 supply some of the written materials. In denying it,
23 although perhaps arguably we could have gone back before
24 the last spring period, we are not taking that into
25 account because we don't have to for purposes of the

1 ruling.

2 At the request, discovery was granted on a
3 close call, again, in the spring on this issue. All of
4 this material was turned over then. There was no
5 complaint then that we know of that the material in the
6 sense we are now addressing was not responsive.

7 Had the request been made early in September,
8 when the cross-examination was embarked upon, it still
9 would have been late, but we might have been more kindly
10 disposed to granting it in part, not to the full audit
11 packages probably, but perhaps in part to the
12 immediately replies as to all of the findings, although
13 there was the problem on the other hand of at that time
14 the findings not being identified by the County fully.

15 To require personnel now to go through the
16 task, when there is no good cause for the lateness and
17 while they are involved in testifying, would just be
18 much too much under any system, even a system that bends
19 over backwards to assure that Intervenors
20 cross-examining company witnesses have full access to
21 documents.

22 They are busy enough being involved in this
23 preparation. We don't have to inquire whether it's a
24 lot of paper. It is sufficient and the time involved
25 would be time away from their direct purpose.

1 The witnesses have been able to answer
2 questions about it. We don't think it would assist the
3 efficiency of the hearing in terms of speed to have it.
4 We don't think it would assist the value of the hearing
5 significantly in terms of the additional substance we
6 might get by having all of those documents available.

7 It would certainly be arguably more
8 comfortable for the cross-examiner to have them, so that
9 he could explore his interpretation of those words with
10 the witnesses. But the reason -- well, it's too late
11 for that purpose to make the request. And beyond that,
12 the assistance is not likely to be sufficient of that
13 paper, because, as we've heard, the backup materials
14 have to be resorted to in the answers.

15 We do think, based upon our observations of
16 the answers, that the witnesses close in time to the
17 testimony on the findings now being provided by the
18 County have to go through the process of deciding
19 whether there is something in the immediate written
20 reply which explains why the auditor's finding is simply
21 incorrect or very close to being incorrect or a matter
22 of interpretation.

23 And as to those, if we understand what LILCO
24 is willing to do -- and it's not solely based upon our
25 ruling -- we're inclined to order that much, but that is

1 as a matter of discretion and not a matter of right to
2 the County. So we will require that.

3 We are going to leave the schedule flexible
4 because it would be an unreasonable burden to require
5 these witnesses or their counsel to do it all at once.
6 So it is a matter of, at the time the groups are
7 provided and then at the time that you adjust to what
8 hearing schedule you are likely to use these findings,
9 the discussions should take place as to which of these
10 findings the witnesses believe are incorrect, along with
11 whether or not they believe they don't fit in the
12 category. And the reason might be the same as to both
13 of those.

14 And witnesses -- or rather, counsel can give
15 the County the reasons as to why, and to the extent the
16 reasons are found in documentation that is widely spread
17 throughout the files someplace, that does not have to be
18 provided. But to the extent the reason lies in the more
19 immediate type reply, even though that in itself
20 references other documents, that should be provided
21 where the County wants it.

22 Now, it may be that, given the explanation,
23 the County doesn't want to waste time with it either,
24 and we will leave it at that.

25 Nobody mentioned the Clinton case. We had it

1 in mind and it does not apply to this situation. The
2 witnesses have had no difficulty answering, and if the
3 County felt there was such difficulty, which I don't
4 believe to be the case, that request should have been
5 made weeks ago rather than now.

6 I guess that's it.

7 MR. LANPHER: Judge Brenner, could I ask for a
8 clarification?

9 JUDGE BRENNER: Yes, you can ask.

10 MR. LANPHER: There may be some findings as to
11 which the witnesses disagree in advance that the finding
12 is correct, as to which there is documentation. I
13 understand that that will be readily accessible
14 documentation, however you want to describe it, and that
15 will be provided.

16 Is it part of your ruling also that if the
17 witnesses believe that a finding is incorrect but there
18 is not readily accessible information, that those
19 findings will be identified as ones that the witnesses,
20 if asked about, will state are incorrect?

21 JUDGE BRENNER: I think if I understand what
22 you are saying, it was my impression that that would
23 have occurred normally as part of, before this document
24 question even came up, as part of the interchange, and
25 that it would not fall -- if that were the case, it

1 seems to me it would not in the witnesses' view fall
2 within any grouping unless you phrased the question
3 solely, the auditor found.

4 The questions have been broad enough, and in
5 any event the answers, properly so, have gone so far as
6 to explain where they felt it wasn't in a group because,
7 although the words appeared to say one thing, the
8 situation was another. So yes, we would expect that you
9 should know that, and that should help your efficiency
10 also, or your preparation in wanting to probe them.

11 I guess, since counsel are going to be more
12 directly involved in talking to each other, I guess I
13 should ask counsel for LILCO if my impression is correct
14 in their view.

15 MR. EARLEY: Yes, Judge. I think what we had
16 been doing with the County was informing them, when they
17 gave us their groupings, whether we agreed, and if there
18 were some situations that we thought should be in a
19 different group, trying to give them some indication of
20 where, what group we thought it would fit into. And we
21 will continue to do that.

22 I think yesterday there was an instance where
23 there was some mixup on that because of the quick
24 review, and we will try to give it a detailed review so
25 that we can give a firm indication of what group we

1 think it belongs into. But if it is a case that we just
2 don't think the finding was correct as stated, we will
3 provide the information that we indicated.

4 JUDGE BRENNER: I have had no problem with the
5 good faith of the parties as I have seen it, once we
6 have decided what should be done. There have probably
7 been arguments as to whether it should be done, but I'm
8 very happy to state that once it was embarked upon,
9 whatever it was, there was no problem.

10 I am sure there are going to be ones that are
11 going to be missed as part of this conversation. You
12 missed some in preparing your order the other day, Mr.
13 Lanpher. They were in there, but under another
14 category, and you decided for one reason or another you
15 wanted to change the sequence. In most cases you're
16 able to tell them, but it was somewhat later and in one
17 case I think you didn't get a chance to tell them.

18 Similarly, we're not going to bar LILCO from
19 using it in their answer to questions, because we
20 certainly cannot and do not want to prevent the truth in
21 terms of their proper response to the questions. But
22 they are to use their best efforts in these meetings to
23 tell you what their view of the items within the group
24 is.

25 They may miss some. We hope it will be kept

1 to a minimum, but everybody is under a time frame
2 pressure here, which could have been avoided, we
3 believe. And I don't want to belabor that now.

4 Okay, do you want to ask about FQC 17, finding
5 (D.4) and FQC 21, finding (D.7)? At least you did at
6 one time.

7 MR. LANPHER: Thank you for helping me know
8 where I am.

9 Whereupon,

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

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

22 CONTINUED CROSS EXAMINATION
23 ON BEHALF OF SUFFOLK COUNTY
24 BY MR. LANPHER:

25 Q Gentlemen, turning your attention to FQC 17,
finding (D.4), Mr. Arrington, as Judge Carpenter brought

1 out and the audit indicates, there are seven diaphragm
2 valves and three heat exchangers in two bins that lack
3 the protective covers.

4 Do you know what the cause was in this
5 instance, or causes if there are multiple causes, that
6 these covers were missing?

7 A (WITNESS ARRINGTON) No, sir. I stated
8 earlier specifically I didn't know why these caps were
9 not on there. I did give an example of, in most cases
10 when we do find that the caps are not there why they
11 aren't there. But specifically here, I don't know.

12 Q Is it part of your FQC auditor's function to
13 determine the cause for a violation of a procedure or a
14 specification when they identify problems such as this?
15 You have seven or ten end caps missing. Are they
16 identified as part of their work to also determine why
17 that occurred?

18 (Panel of witnesses conferring.)

19 A (WITNESS ARRINGTON) Mr. Lanpher, the prime
20 responsibility for that would lie with the audited
21 organization, to determine the cause. Also, a factor
22 that is entered into rooting out the cause of the
23 situation is the seriousness of the infraction itself.
24 As we have indicated, caps, end caps in themselves are
25 not serious. If it is damaged, then you have to seek

1 out what caused that damage and take the corrective
2 action.

3 A (WITNESS MUSELER) Mr. Lanpher, the cause in
4 the case of -- well, I can't speak specifically for the
5 audit observation that we are discussing here. The
6 principal cause for leaving end caps off of valves and
7 pieces of pipe is inattention on the part of the craft
8 personnel who are handling those pieces of equipment.
9 That is the cause in 90 percent or more of the cases
10 where the end caps are left off, and that circumstance
11 is addressed by either the contractor or the
12 construction management organization.

13 There are various points in the job when the
14 quality assurance personnel indicated that more
15 attention was needed or our own superintendents, based
16 upon the number of -- based upon their review of audit
17 findings that they had to answer, indicated that more
18 attention was needed. The contractors in a number of
19 cases, the entire site by a sitewide distribution to all
20 personnel, were advised of the specific type of audit
21 finding.

22 In other words, there are memos to all
23 personnel on the job site, as well as internal memos
24 from contractors' organizations, directing that
25 increased attention be paid by the personnel handling

1 these pieces of equipment in the specific context of
2 keeping end caps on pieces of equipment.

3 JUDGE BRENNER: Now, Mr. Lanpher, if you want
4 to say something.

5 MR. LANPHER: Judge Brenner, that answer we
6 have heard before. It wasn't responsive to the question
7 I asked of Mr. Arrington, and -- well, enough said. I
8 think we are getting long answers again, and I'm trying
9 to be as specific as I can.

10 JUDGE BRENNER: Okay. Let me address two
11 things. First, the procedure in terms of courtesy, if
12 nothing else. I would have allowed you to interrupt --
13 I guessed what your complaint might be, and as a matter
14 of fact I guessed correctly. If I thought your
15 complaint was going to be one of testing the knowledge
16 of another witness and you were afraid that witness A
17 was going to give that knowledge to witness B when you
18 were testing that knowledge, I might have allowed an
19 interruption.

20 But I thought that not to be the case, and I'm
21 glad that turned out to be right. Okay, that takes care
22 of the procedure.

23 Because of the time frame problem that Mr.
24 Lanpher is probably going to begin to perceive more and
25 more as we go along, it is going to be better, when you

1 want to supplement an answer now, to indicate at the
2 outset that you want to and why in a few words. And
3 that way Mr. Lanpher can get an appreciation, and the
4 Board also, as to what you want to say.

5 I don't mean in every instance, but where --
6 you're going to have to use your judgment, and that's
7 difficult. But where it appears that an answer is
8 complete and we therefore normally wouldn't be
9 anticipating another witness further answering it, I
10 think it would be good if you could try to give that
11 quick oral summary, and then let him see in the first
12 instance if he wants to let you do it. And if he
13 doesn't, we will see if we want to let you do it
14 anyway.

15 In terms of the specific answer, I disagree
16 with you, Mr. Lanpher, that we heard that before. I
17 thought that was going to be the case for the first few
18 sentences, but sometimes it takes a while to warm up,
19 and by the time he got to the end that was not
20 information that I recall hearing before. That is, as
21 to the problem of end caps being disseminated to
22 personnel who would be involved in that and how the
23 dissemination took place.

24 I must admit that I don't remember the exact
25 wording of your question, as to whether it may be deemed

1 responsive or not. But your question was certainly very
2 close to that area.

3 MR. LANPHER: Judge Brenner, my question went
4 to whether it was part of the auditor's function to
5 determine the cause of the problem. It was a general
6 question. I asked that of Mr. Arrington and he said no,
7 that that is for the responsible organization, I guess
8 Unico or whoever else may be involved. And then Mr.
9 Museler added his comment.

10 Generally, I think the witnesses have been
11 very responsive and I don't mean to be at all critical
12 of them. I am mindful of the time.

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1 JUDGE BRENNER: I know what you mean, and I am
2 not going to check with the other board members because
3 it is not worth taking the time. But giving my own
4 personal opinion on that one answer, I thought it was
5 close enough so that I would not deem it nonresponsive.
6 And the reason I say that is not just your immediate
7 question, but I am sure Mr. Museler had in mind the
8 sequence of questions that Judge Morris had asked
9 earlier. And it was right along that line. He could
10 have said it shorter, and maybe he did not have to say
11 it at all. But it wasn't as terrible as some others.
12 And maybe the best thing to do is to proceed.

13 But, Witnesses, we are sensitive to your
14 problems, and you are going to have to be sensitive to
15 Mr. Lanpher's problems also.

16 BY MR. LANPHER: (Resuming)

17 Q Mr. Arrington, turning to the last portion of
18 observation (D.4) in FQC 17, you have said that these
19 components, the valves, were not required to be in a
20 level A storage. The auditor apparently did not realize
21 that; correct?

22 A (WITNESS ARRINGTON) The auditor indicated
23 that the caps were not on or caps or covers were not on
24 the diaphragm valves. The procedure requires that they
25 be on the components themselves, and I indicated that

1 earlier. I was drawing your attention to the fact that
2 they were in a storage level A, which is a dust-free
3 environment, which would indicate that no harm or damage
4 or deterioration would come to these components as a
5 result of the caps not being there.

6 Q The last sentence says, "Instruct personnel in
7 the use importance of keeping level A-stored components
8 properly sealed and protected." In your opinion, does
9 this indicate that the auditor thought that these were
10 level A components?

11 A (WITNESS ARRINGTON) I think that he is still
12 referring to the fact that they require the caps and
13 covers on them, and he is asking that the areas that
14 people in that area be reinstructed to that fact, that
15 they be properly protected. And they were. They did
16 not have the caps on them, but there was no damage as a
17 result of that because of the location that they were in.

18 Q Mr. Arrington, turning to FQC 21, Finding
19 (D.7), this was aninstant, was it not, that temporary
20 covers were required to protect expansion joint bellows?

21 A (WITNESS ARRINGTON) Yes. The requirement is
22 that they be covered. These were installed, these
23 expansion joints, on the circulating water system had
24 been installed, and the covers were not placed on the
25 ends of the expansion joints at the time of the audit.

1 There was work that was going on in that particular area.

2 Q Is that the cause for having removed the
3 temporary covers?

4 A (WITNESS ARRINGTON) The cause for removing
5 the covers would be for that reason. These are quite
6 large in size.

7 Q Do you know how long; do you know whether the
8 covers were off only the work period?

9 (The witnesses conferred.)

10 A (WITNESS ARRINGTON) I couldn't say. I think
11 this goes back to our earlier statements about work that
12 is taking place on the components. There is a certain
13 amount of judgment that is involved as to how long the
14 covers can be off. The auditor does not attempt,
15 because of the time factor, to find out whether they
16 have been off 1 day or whether they have been off for a
17 week. We would do that as part of the corrective action
18 to make sure that there is no damage as a result of the
19 covers not being on, and find out why the covers were
20 off. And we have indicated that on numerous occasions
21 here today.

22 Q Mr. Arrington, wouldn't that have come out of
23 again -- strike the "again" -- wouldn't that have come
24 out in an exit interview before this was finally written
25 up?

1 marked FQC-17, Finding
2 (D.4); and FQC-21,
3 Finding (D.7) for
4 identification were
5 received in evidence.)

6 BY MR. LANPHER: (Resuming)

7 Q Gentlemen, I would like to turn your attention
8 to Field Audit 980, Finding (4.1).

9 MR. ELLIS: Judge Brenner, the only reason I
10 looked slightly askance there is you have been saying in
11 the absence of specific objection rather than general.

12 JUDGE BRENNER: All right. I may not say it
13 right every time as the days go on, but believe me you
14 have reserved your right to tell everybody after this
15 case is over how badly we messed up on the overall
16 evidentiary ruling.

17 BY MR. LANPHER: (Resuming)

18 Q Gentlemen, would you agree this is an instance
19 where poly cover is required by storage parts that were
20 not in place when the auditor inspected? And this
21 relates to instrumentation panels?

22 (The witnesses conferred.)

23 A (WITNESS KELLY) That was a case where the
24 panel was not properly covered as opposed to the cover
25 being missing. In fact, it was only a portion that was

1 missing.

2 Q Thank you, Mr. Kelly. And the auditor noted
3 that this was a generic problem that had been noted in
4 three previous instrumentation storage audits and had
5 not yet been corrected. Am I right?

6 (The witnesses conferred.)

7 A (WITNESS KELLY) I would agree that we had
8 this problem in the past, and I attribute that to the
9 construction activity that was going on as far as
10 working on the particular panels, because we are talking
11 about instruments that were stored in place as opposed
12 to a warehouse or a storage area.

13 Q The fact that these instrumentation panels are
14 stored in place as opposed to in a separate storage
15 warehouse or whatever, would you agree that that makes
16 it all the more important that proper coverings be in
17 place instead of around construction activity?

18 A (WITNESS KELLY) I would say potentially.

19 Q Why was this not corrected earlier, do you
20 know?

21 A (WITNESS KELLY) I wouldn't say that it wasn't
22 corrected earlier. It was stated the problem had
23 occurred before. You could very simply have, as I said,
24 in this particular instance, it was just a portion of
25 the covering. Each time I am sure that it was fixed,

1 but because of the construction activity going on, that
2 portion was removed. So it was not a condition where we
3 are describing that it was not fixed on the other
4 occasions.

5 Q The auditor says the generic problem had not
6 yet been corrected.

7 A (WITNESS KELLY) It was a sense in that he had
8 found again a problem with the covering partially.

9 Q Would you agree that this was then an instance
10 in which corrective action had not been successfully
11 implemented to prevent recurrence of the problem?

12 A (WITNESS KELLY) No, I would not.

13 Q Why not?

14 A (WITNESS KELLY) You have to understand that
15 at a construction site, that in the case of a covering
16 like this, you can place it over the material and there
17 is work activity going on on the panel itself, as we
18 described before, during a change of shift, you could
19 not have put the cover back down. It could have been
20 potentially torn.

21 When you are in a construction environment,
22 you are not in a hermetically sealed container. There
23 is activity going on, and this type of thing can
24 happen. And that is the reason why we have various
25 inspections and auditing activities going on to correct

1 that problem when it does occur.

2 Q Would you agree with Mr. Kelly that the
3 corrective action or actions that were taken prior to
4 August 1979, the date of Field Audit 980, did not
5 preclude the recurrence of this problem?

6 (The witnesses conferred.)

7 A (WITNESS KELLY) The problem did reoccur.

8 MR. LANPHER: Judge Brenner, I would like to
9 move admission of Field Audit 980, Finding (4.1) as an
10 example of a covering problem.

11 JUDGE BRENNER: All right. In the absence of
12 any further objection, I will admit it into evidence.

13 (The document previously
14 marked Field Audit 980,
15 Finding (4.1) for
16 identification was
17 received in evidence.)

18 JUDGE BRENNER: I would ask you, Mr. Lanpher,
19 why didn't you include this one with the other ones
20 yesterday? Was there any substantive reason?

21 MR. LANPHER: Just a matter of getting things
22 organized, Judge Brenner. As I had indicated before,
23 there is a good bit of overlap, and I am going to try to
24 limit that as much as I can.

25 JUDGE BRENNER: I understand. You answered my

1 question.

2 MR. LANPHER: Plus, these are indoor. Most of
3 those we were trying to do were outdoor yesterday, the
4 prior category. I think the witnesses have linked them
5 up somewhat today. I do not mean to characterize their
6 testimony.

7 BY MR. LANPHER: (Resuming)

8 Q Gentlemen, I would like to turn your attention
9 to FQC Audit 34, Finding (K.3) and part A of that, most
10 of the way through that observation. Gentlemen, is this
11 an instance where instrumentation panels were not
12 provided -- strike the "not provided" -- there were
13 unprotected openings in tubings without end caps on
14 instrumentation panels?

15 (The witnesses conferred.)

16 A (WITNESS ARRINGTON) Yes, sir. The end caps
17 were not provided on the tubing for those panels at the
18 time of the audit.

19 Q So this is an example of an end cap problem
20 similar to the ones we talked about before lunch?

21 A (WITNESS ARRINGTON) End caps, yes. In that
22 sense, yes. There is a note under that item item B that
23 action was taken during the audit to correct the
24 problems that were noted, meaning that the caps were put
25 on.

1 Q And this audit observation K.3 notes that
2 similar findings were made during an earlier site audit;
3 correct?

4 (The witnesses conferred.)

5 A (WITNESS ARRINGTON) Yes, it does indicate
6 that it was picked up in that previous audit.

7 MR. LANPHER: Judge Brenner, I would like to
8 move the admission of FQC-34, Finding (K.3), as we will
9 call it, an "end cap problem."

10 JUDGE BRENNER: All right. It is admitted.

11 (The document previously
12 marked FQC-34, Finding
13 (K.3), for identification
14 was received in evidence.)

15 JUDGE BRENNER: What I am going to do on these
16 is just pause, and if I do not see the reaction, we will
17 just admit it so we can save some words here. And that
18 is not intended to deny you the opportunity, and if my
19 pause was not long enough, feel free to jump right in.

20 MR. LANPHER: By the way, Judge Brenner, I
21 think I should note, you had asked before why certain
22 things weren't grouped. And I would just let you know
23 that LILCO admittedly had only a short time to review
24 some of these and the ones that I am coming back to now
25 are ones that they initially did not include in this

1 group. And I wanted to go through the ones I thought we
2 were in agreement first and then see if we could put
3 others in.

4 BY MR. LANPHER: (Resuming)

5 Q Gentlemen, I would like you to turn to FQC
6 Audit 35, page 2 of 3, and the portion is 3.2.1 on that
7 page. It states that -- and I would also like to turn
8 your attention to observation to point 3 which is
9 referenced there.

10 Now, on page 2 of 3, am I correct that the
11 auditor notes that open instrumentation tubing and
12 valves have been a problem for about 6 months without
13 adequate correction? And if you want to look back at
14 Observation 2.3, I believe the reference then is to
15 Field Audit 34, Finding (K.3), that we were just
16 discussing previously.

17 (The witnesses conferred.)

18 A (WITNESS ARRINGTON) The observation that is
19 listed in that FQC Audit 35 does state that. But in
20 Audit 33 -- or 34, it does indicate that the corrective
21 action was taken during the audit for those end caps for
22 the tubing on the instrument panels.

23 Q Then am I correct, in the subsequent audit, if
24 we are talking about Audit 35 now, they found further
25 problems of these same kind with instrumentation

1 handles? Correct? The failing to have end caps on
2 tubing?

3 (The witnesses conferred.)

4 A (WITNESS ARRINGTON) In order to close the
5 item out on the previous audit, it does require by our
6 program to verify that the corrective action was taken.
7 And in order to do that, the inspectors did go back to
8 the area. And they found other examples where the cap
9 had not been stored on instrument tubes.

10 Q In fact, in the third paragraph of Observation
11 2.3, sir, they found that open ends of tubing and valves
12 were still not being afforded proper protection;
13 correct? And they go and identify specific handles and
14 valves?

15 (The witnesses conferred.)

16 A (WITNESS ARRINGTON) Yes, that does indicate
17 that the proper protection has not been given in the
18 form of an end cap, but that was enough work area.
19 There were daily surveillances that were being performed
20 by the instrumentation, construction department
21 instrumentation group, to make sure that this was
22 limited. But the auditor did find that there were
23 isolated cases where the caps were not placed on the
24 tubing.

25 Q Where does the auditor say that these were

1 isolated cases?

2 A (WITNESS ARRINGTON) He indicates that he did
3 find some, the caps that were not provided on the
4 instrument tubing.

5 Q The statement to the effect that it is an
6 isolated case is not in this audit report, is it, sir?

7 A (WITNESS ARRINGTON) That terminology is not
8 in there, no. But in order for him to get back and
9 assure himself that the corrective action was complete,
10 that he went back to the area, he did find tubes that
11 did not have caps on it.

12 Q So this was a repeat problem of an earlier
13 problem that --

14 A (WITNESS ARRINGTON) In the generic sense, it
15 was. The corrective action had been taken on the
16 instrument tubes, and he found additional wings upon his
17 next audit.

18 MR. LANPHER: Judge Brenner, I would like to
19 move in FQC Audit 34, paragraph 3.2.1 on page 2 of 3,
20 and also Observation 2.3.

21 JUDGE BRENNER: I think you mean 35.

22 MR. LANPHER: I apologize. Thank you for that
23 correction.

24 JUDGE BRENNER: All right. Let me make sure I
25 have got it. FQC-35, 3.2.1 --

1 MR. LANPHER: On page 2 of 3. And also
2 Observation 2.3. And I am moving this in as an end cap
3 kind of problem.

4 JUDGE BRENNER: I am sorry, I cannot find
5 Observation 2.3.

6 MR. LANPHER: It is part of Attachment 2.
7 Attachment 2 is entitled "Corrective Action."

8 JUDGE BRENNER: Okay. I wanted to make sure
9 it was the one you asked about, and I had forgotten the
10 numbers. Okay. Those two portions are identified of
11 FQC-35 and will be admitted into evidence.

12 (The documents previously
13 marked FQC-35, paragraph
14 3.2.1, and Attachment 2
15 for identification were
16 received in evidence.)

17 BY MR. LANPHER: (Resuming)

18 Q Gentlemen, let's go to page 2 of my
19 handwritten sheet. Gentlemen, referring your attention
20 to FQC Audit Finding (D.4), do you agree that this was
21 an instance where electrical cables were not protected
22 and one of the three cables was damaged?

23 A (WITNESS ARRINGTON) Are you referring to item
24 B under (D.4), one of three ground cables?

25 Q I am referring to -- my question was multiple,

1 and I apologize if that confused you -- I am referring
2 to the whole observation and the fact that cables were
3 left unprotected. And one of the three was determined
4 to be damaged. So it is more than just Finding B, sir.

5 (The witnesses conferred.)

6 JUDGE BRENNER: Mr. Lanpher, let me interject,
7 for the witnesses benefit, it is not clear to me that it
8 is the same group of three for both findings, and your
9 question might have implied that. And maybe you you
10 believe that based upon your reasoning, but I will let
11 the witnesses take that into account in their answer.

12 WITNESS ARRINGTON: Mr. Lanpher, they are
13 different cables. They just happen to be the same
14 number. One is for the motor control center, and one is
15 for a demineralizer cabinet. Both of them are located
16 on the same elevation, but they are different cables.
17 One of the three cables that is indicated that is
18 damaged, the end of that cable was cut back and there is
19 a thermite weld.

20 These are brass grounding wires. In the
21 normal process you have additional wire; they are
22 imbedded in concrete when you place them to start with,
23 and then you have additional lengths of wire there. And
24 the normal process is that you cut back what you don't
25 need and you apply a lug on the end of it, and you

1 ground it to the cabinet itself.

2 In this particular case with the one that was
3 damaged, the end of it that was not needed was cut off
4 and the thermite weld was applied. There was no damage
5 beyond what was needed to ground it to the cabinet
6 itself.

7 BY MR. LANPHER: (Resuming)

8 Q Could you determine what the cause of the
9 damage was, sir?

10 (The witnesses conferred.)

11 A (WITNESS ARRINGTON) Not specifically what
12 caused the nick or abrasion that was applied to it.

13 Q Now, the previous finding, Finding (A),
14 indicates that three ground cables were unprotected.
15 What kind of protection is normally provided for ground
16 cables?

17 (The witnesses conferred.)

18 A (WITNESS ARRINGTON) I believe they are only
19 taped, they are coiled up and taped. It is a cable that
20 comes out of the concrete itself, like a battery ground
21 on your automobile. It is just grounded to a cabinet.
22 It doesn't have any safety significance as far as the
23 operation of the cabinet is concerned. I think it is
24 just a grounding to the unit itself, and it is a ground
25 into the building.

1 Q And it is wound up to get it out of the way?

2 A (WITNESS ARRINGTON) Yes, it is poured maybe
3 years before the cabinet is even located into the area.
4 As the concrete pour takes place, these are inserted as
5 embedments; and eventually when the cabinet is located
6 into the area, these cables are uncoiled and connected
7 to the cabinet itself.

8 Q Gentlemen, turning your attention to Field
9 Audit 1313 and Finding (4.2), this is an instance where
10 a poly cover was not provided; correct? Or was not in
11 place?

12 (The witnesses conferred.)

13 A (WITNESS MUSELER) Mr. Lanpher, this indicates
14 that the poly cover was not in place over this
15 particular piece of electrical equipment. The further
16 research into this finding indicates that there was
17 damage to the box. In fact, the electrical termination
18 box was broken off from the blower due to some movement
19 of equipment through the area or whatever. So the
20 equipment was damaged. The box, the electrical
21 termination box, was broken off it. In this particular
22 case, the poly cover would not have protected the
23 equipment from that particular hazard. But the poly
24 cover was not in place as stated by the audit.

25 Q Could you determine what the cause of the

1 damage was? You say it would not have been prevented by
2 the cover. I am wondering how you know that.

3 A (WITNESS MUSELER) The cover was a
4 polyethylene cover, sir. The box was physically broken
5 off from the piece of equipment. No piece of
6 polyethylene could have prevented whatever hit it.
7 Something hit it to knock the box off. And that would
8 have been a rather severe blow to knock a termination
9 box off. So I don't know the cause. I don't know what
10 hit the piece of equipment, sir.

11 (Counsel for Suffolk County conferred.)

12 Q Gentlemen, turning your attention to Field
13 Audit 425, Finding (4.4), am I correct that this was an
14 instance where in a level B storage area cartons were
15 stacked in a manner where they were stacked so high that
16 the bottom ones were crushed?

17 A (WITNESS KELLY) Yes, that is the case. But I
18 don't believe it fits in your category of damage.

19 Q This was an instance where, through improper
20 storage there was damage; correct?

21 A (WITNESS KELLY) No. All it says is that the
22 boxes were crushed. There is no indication of the
23 contents of the boxes being damaged at all.

24 Q The same audit finding was made in Field Audit
25 470, Finding (4.3); correct? The same basic finding?

1 Indeed, they state, this repeats the violation of Field
2 Audit 425.

3 (The witnesses conferred.)

4 A (WITNESS KELLY) This again indicates that
5 there was damage to the cardboard box. There is no
6 determination that there is any damage to the equipment
7 that was in those boxes. If there was, it would have
8 been corrected.

9 Q Do you know whether there was damage to
10 whatever was in the boxes?

11 A (WITNESS KELLY) No, I do not.

12 Q Gentlemen, could you turn your attention to
13 FQC Audit 24, Finding (D.5), please? This is an
14 instance, is it not, where the level control valve and
15 temporary storage had damage to the limit switch
16 assembly?

17 A (WITNESS ARRINGTON) That is correct. That
18 was picked up during an audit of the instrumentation
19 installation itself. This particular component was
20 inspected prior to its being released from the warehouse
21 to its temporary storage location, which indicated that
22 the valves were -- there was no damage done to those
23 components at the time of release.

24 Q Do you know what the cause of the damage which
25 was noted in this audit finding was?

1 (The witnesses conferred.)

2 A (WITNESS ARRINGTON) I don't know what caused
3 the damage itself. It is something that would be
4 routinely picked up at the installation and inspection
5 by the fuel quality control inspector. This particular
6 audit was performed on the instrumentation
7 installation. It happened to be picked up by the
8 auditor that it was in a temporary storage area. But as
9 I indicated, it would be picked up at our inspection for
10 that particular component at installation. It is not
11 something -- what I am trying to point out -- it is not
12 something that would be picked up by the auditor and
13 that would go undetected by FQC. The damage was there.

14 (Counsel for Suffolk County conferred.)

15 Q Gentlemen, in Field Audit 740, Findings (4.1)
16 and (4.2), would you agree that the auditor in his
17 finding identified damage once in the form of peeling of
18 the protective coating and once in the form of corrosion?

19 (The witnesses conferred.)

20 A (WITNESS KELLY) This is a case where -- in
21 one case protective coating was peeling and in the other
22 a case of rust. It does not indicate that this was a
23 problem through the covering, due to covering. Also,
24 both of these items would have been picked up by both
25 construction and our field quality control organization

1 as part of their normal final installation acceptance
2 inspections, irregardless of the finding.

3 Q Both these items were in storage at the time
4 that the peeling and corrosion were identified; correct?

5 A (WITNESS KELLY) They were in their final
6 location.

7 Q They would be maintained in accordance, or
8 there was an attempt to maintain them in accordance,
9 with LILCO storage procedures; correct?

10 A (WITNESS KELLY) That is correct.

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1 Q Gentlemen, turning your attention to field
2 audit 1086, finding 4.1, the auditor determined -- am I
3 correct that the auditor determined that the unit, which
4 was mechanical equipment, was not covered as required by
5 the storage history card?

6 A (WITNESS MUSELER) Yes, sir. The auditor
7 determined that the component was not covered at the
8 time of the audit.

9 Q Mr. Museler, it goes on to state that there
10 was apparent damage to the unit. Was the auditor
11 correct? Was there in fact damage?

12 A (WITNESS MUSELER) No, sir, but the auditor's
13 observation was correct. An air filter and a gauge were
14 in fact missing from that mechanical component. There
15 were not broken off. They were missing, and that is a
16 common occurrence in that certain pieces of equipment
17 that are ancillary or attached to large pieces of
18 equipment are sometimes removed, sometimes for
19 safekeeping and sometimes for reasons that can't be
20 determined.

21 But in this particular case, they were
22 removed. They were not broken off. They were missing
23 from the piece of equipment at the time of the audit.

24 MR. LANPHER: Judge Brenner, the audits that I
25 have just covered I would like to move into evidence --

1 FQC 20, Finding D.4; Field Audit 425, finding 4.4; FA
2 470, Finding 4.3; FQC 24, Finding D.5; FA 740, Findings
3 4.1 and 4.2; FA 1086, Finding 4.1; and FA 1313, Finding
4 4.2.

5 JUDGE BRENNER: You look like you wanted to
6 say something, Mr. Ellis.

7 MR. ELLIS: I think he just recited the ones
8 he asked questions about. He is just moving those into
9 evidence with the explanations that were given.

10 JUDGE BRENNER: Yes.

11 MR. ELLIS: No specific objection.

12 JUDGE BRENNER: For what it's worth, and that
13 is the reason I paused. My own informal list -- which I
14 do not rely on for accuracy -- accords with Mr.
15 Lanpher's description. Those are the ones he asked
16 about.

17 Okay, they are admitted into evidence.

18 (FQC 20, Finding D.4;
19 Field Audit 425, finding
20 4.4; FA 470, Finding 4.3;
21 FQC 24, Finding D.5; FA
22 740, Findings 4.1 and
23 4.2; FA 1086, Finding
24 4.1; and FA 1313, Finding
25 4.2, were received in

1 evidence.)

2 JUDGE BRENNER: I would like to ask a question
3 about one of those, if I might. It is not directly on
4 your line of inquiry, but it might help me in the
5 overall area.

6 The finding in field audit 740, 4.1, indicates
7 that the control room air conditioner does not require a
8 storage history card and I am wondering what category of
9 equipment that falls within such that a storage history
10 card is not required.

11 WITNESS MUSELER: Sir, the nomenclature is a
12 little bit misleading here. The units -- FLT indicates
13 a filter and that indicates to me that this component,
14 the subject of this audit finding, is the filter portion
15 of the air conditioning system, which I believe would
16 not require a storage history card.

17 I am not absolutely sure, but I believe that
18 the main compressors -- items that would normally be
19 characterized as the air conditioner -- would require
20 certain preventative maintenance and, to my knowledge,
21 would require a storage history card. This particular
22 component is the filter portion of that air conditioning
23 unit.

24 JUDGE BRENNER: Thank you.

25 (Counsel for Suffolk County conferring.)

1 BY MR. LANPHER: (Resuming)

2 Q Mr. Arrington, you referred in responding to
3 my questions a number of times to inspections which are
4 carried out as distinguished from audits. When you find
5 a storage problem or a storage-related problem during an
6 inspection, you write, I guess, what is called a DCO --
7 deficiency correction order. Is that correct?

8 A (WITNESS ARRINGTON) It would depend. If it
9 could be corrected within the scope of the existing
10 specifications or procedures, it would be a DCO. It is
11 was a condition that required engineering evaluation, it
12 would be written up on a non-conformance report.

13 Q Turning your attention to finding D.8 of FQC
14 audit 23, this references that there were 112 DCOs
15 written in the material storage and preventive
16 maintenance area during about a 12-month period from
17 August '77 to August '78 -- or August '76 to August
18 '77. Is that correct?

19 A (WITNESS ARRINGTON) Yes, it does.

20 Q It also indicates that it was taking a long
21 period of time to close out these items, doesn't it?

22 A (WITNESS ARRINGTON) It indicates that there
23 were some that were still remaining that were remaining
24 open at the time of the audit.

25 Q Do you know what the auditor means when he

1 others that we know less about, and we know very little
2 about this one.

3 BY MR. LANPHER: (Resuming)

4 Q Mr. Arrington, do you know why this audit
5 observation was written? Was this an audit of DCOs that
6 had been performed for this aspect of the audit or for
7 what? The audit observation itself doesn't refer to any
8 specific item.

9 A (WITNESS ARRINGTON) I think the auditor was
10 auditing the preventive maintenance aspect of the job
11 site. He did not find anything in his audit in that
12 particular observation that was not already known by the
13 site departments. In some cases, the DCO is a
14 multi-condition form where you may have more than one
15 condition that requires correction and the DCO has to
16 remain open until all of those items are corrected, be
17 it identification tag that has to be made up again, that
18 was picked up during that particular inspection by the
19 FQC department.

20 As I indicated, he did not find anything that
21 we didn't already know about in the 31 DCOs that he
22 references there as being open. As I indicated, we
23 tracked those DCOs for the timely closure and those DCOs
24 in some cases could have been written just prior to the
25 audit itself. He is talking about a total lot of DCOs

1 that was written in a 12-month period, and he is saying
2 that 31 remained open.

3 That is -- I can't see where that is a
4 particular problem. When we go back out to close the
5 DCO as part of the corrective action, we determine then
6 as to whether or not there is any damage or
7 deterioration that has been done as a result of this
8 condition in every case.

9 Q Now if an inspector has already identified a
10 problem in a DCO, the auditor will also write that up as
11 an audit finding, correct?

12 A (WITNESS ARRINGTON) He does in some cases.
13 It depends on the auditor. I think we have had in some
14 of our audit observations that we have discussed over
15 the course of the past week or so or the past three
16 weeks that we have been on the stand here that there
17 have been notations that this had been identified by
18 field quality control prior to the audit.

19 Q So would it be fair to state that the auditor
20 in reviewing the preventive maintenance program
21 determined that there were in the year period that he
22 looked at for DCOs, approximately a year, there were
23 approximately 112 DCOs, and many of these violated the
24 ANSI standard N45.2.2 -- not the DCOs violated, but many
25 of the underlying problems violated that ANSI standard?

1 A (WITNESS ARRINGTON) I would like to point out
2 that any deviation from our site procedure would also be
3 a deviation from the ANSI standard. They are together
4 in their requirements. The implementing procedure would
5 be the site program. The auditor chose to reference
6 ANSI N45.2.2 and he could have easily identified QC
7 17.1. That would serve the same purpose.

8 A (WITNESS KELLY) Mr. Lanpher, I would like to
9 point out that this is an example of how the inspection
10 system is working. Appendix B addresses the fact that
11 non-conforming conditions will exist. We track the item
12 for deficiencies. A deficiency will either be fixed in
13 one way of repairing the item. If it cannot be
14 repaired, we will simply buy a new item to replace it.
15 So there is no consequence at all to the safe
16 operation of that plant.

17 Q Mr. Kelly, do you believe it is acceptable to
18 have 112 DCOs in the storage and preventive maintenance
19 area during a one-year period?

20 A (WITNESS KELLY) If you understood the
21 magnitude of the storage program for a nuclear power
22 plant, you could very easily understand how that is
23 probably a very good record because of the amount of
24 detailed inspection activity that goes on. Any
25 deviation from the standard is picked, is identified and

1 is fixed.

2 Q Then your answer is yes, you think that is
3 acceptable?

4 A (WITNESS KELLY) I think, as I said in
5 previous testimony, I would prefer perfection, but our
6 system assures that if the problem does exist it will be
7 identified and will be fixed.

8 MR. LANPHER: Judge Brenner, I am going to
9 move on to another area, unless the Board has
10 questions. I don't know if you want to take a break now
11 or I can keep going.

12 JUDGE BRENNER: It sounds like you want to
13 take a break.

14 MR. LANPHER: No. Either way.

15 JUDGE BRENNER: We don't care either. You are
16 going to go through the entire group C, which consists
17 of about seven more or so.

18 MR. LANPHER: No, I'm not.

19 JUDGE BRENNER: How many more do you want to
20 go through in that group?

21 MR. LANPHER: None.

22 MR. ELLIS: Judge Brenner, could we be the one
23 this time to say that I personally would like one at
24 this time?

25 MR. LANPHER: What I meant, Judge Brenner, by

1 going to another group, that I am going to go to storage
2 group 4.

3 JUDGE BRENNER: Okay. Let's break until 3:30.

4 (A brief recess was taken.)

5 JUDGE BRENNER: Instead of waiting for the end
6 of the day and the possibility that I might forget, I
7 just wanted to check on the schedule for tomorrow. We
8 had stated off the record that we would start at 8:30
9 and I also stated that we would adjourn at whatever time
10 LIICO or the other parties wanted to for the sake of
11 having to get their witnesses where they need to go and
12 we would discuss the logistics. All we need is the time
13 from you and we need it.

14 MR. ELLIS: 2:00, sir, if we may, to make a
15 3:15 plane.

16 JUDGE BRENNER: Okay. What we will probably
17 do is because of certain other matters scheduled for
18 meetings and so on of the Board members, we will recess
19 from 11:45 until 1:00 and then come back for an hour --
20 from 1:00 to 2:00. On future Fridays, in the absence of
21 anything being scheduled, if you want to adjourn at 2:00
22 we might consider running until 1:00, which would give
23 you the same hearing time and then an earlier
24 adjournment and you might want to consider that yourself.
25 But for tomorrow we can't do that.

1 MR. BORDENICK: You did say an 8:30 start?

2 JUDGE BRENNER: Yes, unless there are reasons
3 dealing with preparation of the case by anybody for
4 which we should start at 9:00. We are not going to
5 force it. If there is work being done on the case in
6 the morning, we will start at 9:00. We tried to be very
7 good this week, uncharacteristically, about stopping at
8 5:00 promptly because we know it is a long day for the
9 witnesses and for counsel and that there is a lot of
10 work going on outside the hearing room, and we thought
11 everybody should have five minutes to eat before going
12 to work.

13 MR. LANPHER: I think your comments, Judge
14 Brenner, about the diminishing returns remain
15 applicable.

16 JUDGE BRENNER: So we will continue to try to
17 be good about the stopping time for the benefit of
18 everyone, and I take it there is no objection to
19 starting at 8:30 tomorrow.

20 MR. ELLIS: No, sir.

21 JUDGE BRENNER: All right, Mr. Lanpher, why
22 don't you continue?

23 MR. LANPHER: We are going to take up that
24 motion first tomorrow morning, is that right?

25 JUDGE BRENNER: Right, which is another good

1 reason for starting at 8:30, at a time when people will
2 be too tired to argue long and vigorously.

3 (Laughter.)

4 BY MR. LANPHER: (Resuming)

5 Q Gentlemen, I want to turn your attention to
6 the audits in the County's so-called storage group 5 --
7 Suffolk County Exhibit 65.

8 Gentlemen, we talked earlier about the various
9 levels of storage for different kinds of equipment or
10 material. Levels B and A require heated storage,
11 correct? I'm sorry. I mean to say our storage group 4.

12 (A discussion was held off the record.)

13 BY MR. LANPHER: (Resuming)

14 Q Am I correct that the storage levels A and B
15 require heated storage?

16 A (WITNESS KELLY) Yes, that is correct.

17 Q And as part of LILCO's Appendix B program
18 those items of equipment or material or whatever that
19 fall within the category B and C storage requirements
20 are required by LILCO procedures to have heated
21 storage?

22 A (WITNESS KELLY) You just said B and C.

23 Q B and A, I meant. I am sorry.

24 A (WITNESS KELLY) B and A are required to have
25 heat.

1 A (WITNESS ARRINGTON) Mr. Lanpher, could I
2 clarify that, please?

3 Q Sure.

4 A (WITNESS ARRINGTON) B level storage area in
5 the summer months, I think the minimum temperature in
6 the B level storage area is forty degrees, so at some
7 cases you would not have heat after approximately March
8 of the year and you may not cut it back on in that area
9 until October or November or December, depending on the
10 temperature of the environment. But it does not always
11 require heat. It is temperature control as opposed to
12 heat itself.

13 Q Thank you. So there are minimum and maximum
14 temperatures which are specified. Is that correct?

15 A (WITNESS ARRINGTON) Yes.

16 Q Turning your attention to field audit 340,
17 finding 4.1, this was an instance, was it not, where two
18 motor generator sets were in a non-heated instead of
19 heated storage area?

20 I'm sorry. I do want you to turn to 340.
21 This is where control rod drive pump motors do not have
22 their space heaters energized for eight days while they
23 were in storage; correct?

24 A (WITNESS KELLY) That is correct. But it
25 should be noted that they were in a heated storage

1 area.

2 Q But they were required to have their space
3 heaters energized, is that correct?

4 A (WITNESS KELLY) It would seem to indicate
5 that that was the requirement.

6 JUDGE BRENNER: Maybe I'm the only one in the
7 room, but I don't know what that means. Does that mean
8 that they should have been on and weren't, or does that
9 mean that they should have been connected so that they
10 could be turned on if and when they are needed to be
11 turned on? I am talking about the space heaters.

12 WITNESS KELLY: Without looking at the
13 specific storage history card, my assumption would be
14 that the storage history card indicated that the heaters
15 should have been energized, but that is an assumption
16 without looking at the actual storage history card.

17 JUDGE BRENNER: I don't know what "energized"
18 means. I don't know if it means that they have to be
19 turned on.

20 WITNESS KELLY: Yes.

21 WITNESS MUSELER: Yes.

22 BY MR. LANPHER: (Resuming)

23 Q Is it true that the need for energizing the
24 space heaters would have been set forth in the
25 manufacturer's instruction manual? Is that where the

1 source of this need would have come from?

2 A (WITNESS MUSELER) In a large majority of the
3 cases, that is correct, Mr. Lanpher. That is where
4 generally the guiding information comes from.

5 (Counsel for Suffolk County conferring.)

6 Q Gentlemen, turning to field audit 376, this
7 was an example where some heaters in the level B storage
8 area were not fully operational, correct?

9 JUDGE BRENNER: Finding 4.3? Right.

10 BY MR. LANPHER: (Resuming)

11 Q Yes, finding 4.3.

12 A (WITNESS MUSELER) Mr. Lanpher, it is correct
13 that the heaters were not operating at the times that
14 they should have been operating. The heaters -- as it
15 turns out, the heaters were operational but could not be
16 turned on because of a problem with construction power
17 availability during this particular period -- lack of
18 transformer capacity. The heaters were operational,
19 they were not turned on. Therefore, the observation
20 regarding the temperature condition was a correct
21 observation.

22 Q This situation remained uncorrected throughout
23 the winter of 1976, correct -- or 1975-1976?

24 (Witnesses conferring.)

25 A (WITNESS KELLY) That finding indicates that

1 that condition was present from August '75 through
2 November '75. Obviously August and September, there was
3 obviously no need for the heat to be present because of
4 the ambient temperature.

5 Also, it says in the audit that it was not fully
6 operational, so that there was some heat. Also, in
7 addition to that, a random sample of the items that were
8 stored in that area were inspected by both the
9 construction and the FQC personnel to verify if any
10 damage had occurred to those items because of this
11 condition, and no damage to those items did occur.

12 Q When was that inspection conducted, sir?

13 (Witnesses conferring.)

14 A (WITNESS KELLY) That was between February and
15 April of 1976.

16 A (WITNESS MUSELER) Mr. Lanpher, the components
17 that were stored in that area, 4.3 indicates that the
18 storage area in question was the lean-to area of the
19 main warehouse. The lean-to area of the main warehouse
20 during that period was used to store a certain number of
21 motor-operated valves. We're not certain of the
22 numbers, so that the components that Mr. Kelly refers to
23 are a random sample of motor-operated valves that were
24 stored in that storage area.

25 There were no other components in that area

1 that required level B storage.

2 Q How many motor-operated valves were stored in
3 that area during the time period that this violation was
4 occurring sometime in the fall of 1975 through the
5 winter '75-'76?

6 A (WITNESS MUSELER) Mr. Lanpher, I believe I
7 indicated that we don't know the answer to that
8 question.

9 Q How many valves were involved in your random
10 sample?

11 A (WITNESS MUSELER) Apparently three, sir.

12 Q Would you agree with me, Mr. Museler, that to
13 know whether that was a statistically significant sample
14 you would have to also know the number of total
15 population?

16 (Witnesses conferring.)

17 A (WITNESS MUSELER) I agree with your
18 statement, Mr. Lanpher, that for purposes of statistics
19 one needs to know the population to know if the sample
20 selected is a statistically significant or important
21 number. I'm not sure that that statistical approach
22 applies to this kind of a situation where all of the
23 objects were stored in the same environment.

24 A (WITNESS KELLY) In addition to that, the
25 inspection that was performed as part of our normal

1 program, we call a pre-installation verification
2 inspection, would be performed by the quality
3 organization prior to the removal of any of the items at
4 warehouse.

5 Q Mr. Kelly, do you know why this -- well, first
6 off, you earlier state that or I think you stated, Mr.
7 Kelly, that this was a problem during the period August
8 to November 1975 and that it would not have been a
9 serious problem during August and September because of
10 the ambient temperature. Now in fact this was a problem
11 from whenever you needed the heaters on during 1975
12 through that winter, correct?

13 I mean, it didn't stop in November 1975.

14 A (WITNESS KELLY) It stopped sometime between
15 February and April of '76, but, as I said, that random
16 inspection was performed at the end of that period of
17 time and those inspections that would have been done of
18 each and every valve coming out of the warehouse as part
19 of our normal program would occur.

20 Q What was involved in the random inspection
21 that you conducted -- and again this was for
22 motor-operated valves, correct?

23 A (WITNESS KELLY) Yes, that is correct.

24 Q What was involved in the inspection?

25 A (WITNESS KELLY) To check for moisture,

1 corrosion or rusting.

2 Q So it was a visual inspection?

3 A (WITNESS KELLY) That is correct.

4 Q Why was this condition allowed to remain
5 uncorrected throughout the winter, even though it had
6 been identified in, I guess, three audits?

7 A (WITNESS MUSELER) I believe I stated, Mr.
8 Lanpher, that this particular condition was due to the
9 fact that construction power transformers in the
10 particular power loop that was feeding the warehouse
11 were overloaded and in fact, if I recall correctly, one
12 of them was damaged due to overloading. During this
13 period, we were attempting to get equipment needed to
14 put sufficient construction power back not only for this
15 purpose in this particular power loop in the
16 construction site, not only for the main warehouse,
17 heater circuits in this ancillary area -- this is not
18 the main area. The main area of heaters were on.

19 We think they maybe fired a different way
20 anyway. And other parts of the job site were also
21 subject to power restrictions at this time that affected
22 our ability to add welding machines and other power --
23 large power-consuming loads to this particular loop.

24 We tried to get the components and get the
25 construction substation load rating increased as rapidly

1 as possible. It did take that amount of time to get the
2 equipment and to place it into service.

3 Q Why did you not move the level B storage items
4 to another location where the proper heat could be
5 provided?

6 (Witnesses conferring.)

7 A (WITNESS KELLY) The reason the lean-to area
8 was built was the fact that we needed additional space
9 and the warehouse was very tight on space.

10 Q In fact, this was a level C lean-to, was it
11 not?

12 A (WITNESS KELLY) I wouldn't characterize it as
13 that. The item says heaters were not fully operational,
14 giving heat. Without having actual temperature
15 readings, I couldn't make, really, that determination.
16 And, as I said, as far as the equipment is concerned, we
17 have no reason to believe, based upon the inspections
18 that are performed, that there was any deleterious
19 effects to that equipment.

20 Q Mr. Kelly, the notes to field audit 376, note
21 3, I believe, indicates that it was a level C lean-to.
22 Is that not correct?

23 (Witnesses conferring.)

24 A (WITNESS KELLY) The only difference between
25 those storage areas is the temperature.

1 Q In fact, the only difference between level C
2 and level B is -- well, the primary difference between
3 level C and level B is the heat and temperature control
4 that is required, is it not?

5 A (WITNESS KELLY) Yes, that is correct.

6 JUDGE BRENNER: Mr. Lanpher, where is that
7 note you are referring to?

8 MR. LANPHER: Judge Lanpher, it was not
9 provided to the Board. In the audit we got from LILCO
10 we have some checklists which were not included in the
11 exhibits. I can make them available to the Board.

12 JUDGE BRENNER: No. We don't need that one,
13 given the use of it. I just thought if I had it it
14 would help.

15 MR. LANPHER: I'm not intending to use it for
16 any other purpose.

17 BY MR. LANPHER: (Resuming)

18 Q Gentlemen, I would like to turn your attention
19 to field quality control audit 21, finding D.15.

20 JUDGE BRENNER: Mr. Lanpher, give us one
21 moment, please.

22 (Board conferring.)

23 JUDGE BRENNER: All right. Proceed.

24 BY MR. LANPHER: (Resuming)

25 Q In this audit finding, gentlemen, is it not a

1 fact that an item of equipment required level B storage
2 and it was found that its strip heater was not
3 energized?

4 A (WITNESS ARRINGTON) That is correct. The
5 problem here, I think, is stated that the strip heaters
6 were not energized. The requirements of level B storage
7 at that particular time in the reactor building, this
8 would be a temporary storage area that the equipment is
9 being located in in order to install it.

10 The temperature requirements of the reactor
11 building would have met level B requirements at that
12 time, and that is an enclosed structure.

13 Q Well, aren't the strip heaters required for a
14 some hat different reason or a further reason -- namely
15 humidity control?

16 A (WITNESS ARRINGTON) I indicated that the
17 problem was that the strip heaters were not energized or
18 plugged in, whatever the case is, but that the component
19 itself was stored in an environment that would meet
20 level B requirements. The strip heaters is above and
21 beyond level B in this particular case.

22 Q So probably, again, a manufacturer's
23 requirement to keep humidity off?

24 A (WITNESS ARRINGTON) Yes.

25 Q And the auditor noted that there was in fact

1 condensation; correct?

2 A (WITNESS ARRINGTON) He indicates that there
3 was condensation. That condition was corrected and
4 closed out on a subsequent audit. There was no damage
5 to the equipment itself.

6 Q What is that piece of equipment, if you know,
7 Mr. Arrington?

8 A (WITNESS ARRINGTON) This was a panel.

9 Q A control panel?

10 A (WITNESS ARRINGTON) I beg your pardon?

11 Q A control panel?

12 A (WITNESS ARRINGTON) No.

13 Q What kind of a panel?

14 A (WITNESS MUSELER) Mr. Lanpher, I believe
15 these are what we refer to as rack panels, which are
16 open structural panels used primarily to mount
17 instrumentation on.

18 Q Gentlemen, we talked about three audit
19 findings -- field audit 340, finding 4.1; field audit
20 376, finding 4.3; and FQC audit 21, finding D.15.

21 Would you agree that all of those involve --
22 well, two of those involve failure to energize heaters
23 and one involved the lack of providing indoor heat in a
24 level B area; correct?

25 A (WITNESS MUSELER) Yes, sir.

1 Q And if you would take a moment, gentlemen, and
2 look at field audit 648, finding 4.3, field audit 699,
3 finding 4.1, field audit 721, finding 4.3 and find out
4 if these are other instances where either heaters are
5 not energized or the proper heat level is not
6 maintained.

7 (Witnesses conferring.)

8 JUDGE BRENNER: While the witnesses are doing
9 that, just a housekeeping matter. I didn't notice Mr.
10 Burns' absence after his appearance today until after
11 the afternoon break. Was he here after lunch at all?

12 MR. ELLIS: No, sir, I don't think so, and I
13 apologize for not telling you -- the Board and the
14 reporter -- that --

15 JUDGE BRENNER: More important than the Board,
16 because we would eventually pick up on that, but with
17 the flexibility that we are fully permitting having
18 witnesses here some of the time, so long as the parties
19 have previously checked, or as much as possible checked,
20 make sure the reporter knows because when we come back,
21 the reporting service has been excellent about listing
22 the composition of the panel, and I want to know who was
23 here, when, when we go back through the transcript.

24 So immediately after lunch the panel -- and
25 the transcript should indicate just those witnesses that

1 are there now.

2 MR. ELLIS: Yes, sir.

3 JUDGE BRENNER: Don't tell him I didn't miss
4 him for that first hour and a half, or he may never come
5 back.

6 (Laughter.)

7 MR. ELLIS: I think he will probably say he
8 didn't miss us either.

9 (Laughter.)

10 WITNESS MUSELER: Mr. Lanpher, 721, finding
11 4.3, was an example similar to the ones we discussed,
12 where the motor for the heaters associated with an
13 electric motor were turned off at the time they should
14 have been turned on, and they were subsequently turned
15 on.

16 Field audit 648, item 4.3, did not have the
17 appropriate heat applied to it at the time of the
18 audit. In this case, a light bulb was burned out and
19 was replaced.

20 BY MR. LANPHER: (Resuming)

21 Q So this would fall in that same grouping?

22 A (WITNESS MUSELER) Yes, sir.

23 Q Go ahead.

24 A (WITNESS MUSELER) And field audit 499 --

25 Q 699?

1 evidence.)

2 BY MR. LANPHER: (Resuming)

3 Q Gentlemen, in Field Audit 226, the auditor
4 cited LILCO for a violation of the project procedure 10,
5 in that motor generator sets were placed in level C
6 storage instead of level B storage, correct?

7 A (WITNESS KELLY) Yes, that is correct.

8 Q Do you agree with that finding?

9 A (WITNESS KELLY) Yes, I do.

10 Q So this is another example where the proper
11 heat environment was not provided for equipment?

12 A (WITNESS MUSELER) Mr. Lanpher, the reason Mr.
13 Early identified this one to you as one of the ones that
14 did not fall into the category of improper heat applied
15 is because in this particular instance the motor
16 generator sets were covered and placed in level C
17 storage. The project procedure referenced in the audit
18 finding did require that the motor generator sets be
19 placed in B level storage.

20 This goes back quite a ways and the trail is
21 not as clear as some of the more recent findings.
22 However, we were able to establish that the placing of
23 the motor generator sets in level C storage was
24 concurred in by the manufacturer, General Electric,
25 along with some of the requirements that the

1 manufacturer specified.

2 It is not clear to us from the research we
3 have been able to do on this particular finding whether
4 or not the appropriate approvals from the manufacturer
5 occurred before the motor generator sets were placed in
6 this particular level storage or afterwards. In other
7 words, it was acceptable to store them in level C.
8 Local heat was to be provided in that storage level, and
9 it was provided in that storage level.

10 It is not clear from the research we have been
11 able to do when that heat was provided -- whether it was
12 provided when it was initially placed in level C
13 storage, or subsequent to the audit. If the heat were
14 not applied until after the audit, it would fall into
15 the same category as the other items. If the heat had
16 been applied on the basis of the conversations with the
17 manufacturer as soon as the items were placed in the
18 level C storage, then it would be simply a matter of the
19 documentation of the manufacturer's approval of this
20 particular storage method having not caught up with the
21 auditor.

22 We can't tell what the exact circumstances
23 were from this particular audit finding.

24 (Counsel for Suffolk County conferring.)

25 Q Mr. Museler, let me clarify one thing. You

1 said local heat was provided in level C storage. By
2 "local heat" you don't mean the temperature in the
3 building. You mean heat or humidity control or similar
4 purposes just for that piece of equipment?

5 A (WITNESS MUSELER) Yes, sir, that is exactly
6 what I mean. Many times that is a light bulb under a
7 tarpaulin, but that is exactly the right
8 characterization of it.

9 Q Now is it your understanding from the
10 materials you have been able to review, Mr. Museler,
11 that your procedures at this time -- the storage
12 procedures -- did in fact indicate that the motor
13 generator sets were supposed to be in level B storage,
14 not only the procedures but probably the storage card as
15 well?

16 A (WITNESS MUSELER) I think generally that is a
17 true statement, Mr. Lanpher. We also were not able to
18 tell what the storage history card said at this point in
19 time. Project procedure 10 called for level B storage
20 at this point in time.

21 (Counsel for Suffolk County conferring.)

22 Q Do you know which motor generator set this is,
23 Mr. Museler?

24 (Witnesses conferring.)

25 A (WITNESS MUSELER) These are the reactor

1 recirculation motor generator sets, Mr. Lanpher, which
2 are not safety-related components.

3 Q Mr. Museler, I would like to turn your
4 attention to field audit 679, finding 4.2, and I believe
5 we talked about this before. This finding was that
6 there was no local heat applied to a pump in the reactor
7 building, and I believe you testified yesterday it was
8 your belief that the reactor building at that point in
9 time, in 1977, was in fact heated.

10 A (WITNESS MUSELER) Yes, sir. That is my
11 belief.

12 Q Now, Mr. Museler, just a couple of minutes ago
13 you told me that by "local heat" we mean like a light
14 bulb or something very specific for an item of
15 equipment, and this finding talks about local heat, and
16 the requirement for local heat to be applied to this
17 component.

18 So doesn't the fact that the reactor building
19 may have been heated, isn't that irrelevant to whether
20 local heat had been provided as required?

21 A (WITNESS MUSELER) It is irrelevant if the
22 requirement for local heat is a requirement on that
23 component. This component is a pump. Typically, local
24 heat is required on things of an electrical nature,
25 instrumentation, motors. I am not even sure if it is

1 required on all motors.

2 But typically mechanical pieces of equipment,
3 strictly mechanical pieces of equipment don't require
4 local heat.

5 Q I apologize. I should have read on. The
6 storage card here required local heat if it were stored
7 in an unheated structure. So it is your interpretation,
8 just to sum up from yesterday so we don't have to repeat
9 it, that since this was a heated structure the local
10 heat requirement was obviated.

11 A (WITNESS MUSELER) That is correct, sir.

12 Q Turning your attention to field audit 803 --

13 JUDGE CARPENTER: Mr. Lanpher, before you
14 leave that area, Mr. Museler, I wonder if you could help
15 me a little bit.

16 Looking back at FQC 21, D.15, that refers to
17 April '77, and we were just talking about something in
18 December of '77. I want to be sure I understand exactly
19 what you were testifying to.

20 There is a requirement for heat, but I'm very
21 concerned or very confused -- let me put it that way --
22 about a reference in D.15 to the fact that if the
23 building were heated, that is the same condition that
24 condensation was noted. Certainly depending upon where
25 you happen to be and what the flux of water vapor is

1 into the particular local environment, somebody sitting
2 right next to Long Island Sound is in an environment
3 where there is plenty of water available.

4 I don't understand why you are comfortable
5 with the observation that condensation was noted,
6 rather, why it isn't more important that there was
7 general building heat.

8 WITNESS MUSELER: Judge Carpenter, I believe
9 that Mr. Arrington indicated or pointed out that the
10 building was heated. He also pointed out that this
11 particular panel did require the local heat, and that
12 the auditor noted condensation. So I hope we are not
13 giving the impression that local heat is not required
14 any time an item is stored in level B.

15 The pump we have been discussing a moment ago
16 is a piece of rather massive mechanical steel and it is
17 designed to have water going through it, and typically
18 other than the need to paint it if it happens to call
19 for paint at the end, condensation on the outside of it
20 causes no problems to its storage in the building. It is
21 designed for a water environment anyway.

22 The panels, as I mentioned, electrical-type
23 devices which might have a susceptibility to moisture,
24 typically require the local heat even within the reactor
25 building when the reactor building is heated. But a

1 pump or a valve typically is not bothered by small
2 amounts of condensation that might occur, or even large
3 amounts of condensation that might occur within the
4 building during the construction process.

5 So we are concerned if it is a piece of
6 instrumentation or an electrical-type component that
7 might be susceptible to condensation damage. I'm not
8 concerned if it is a pipe or a valve or a pump.

9 JUDGE CARPENTER: Thank you for clarifying
10 that for me.

11 BY MR. LANPHER: (Resuming)

12 Q Gentlemen, I would like you to turn to field
13 audit 803, finding 4.1. This finding involves
14 motor-operated and air-operated valves, does it not,
15 that were required to be stored in a heated environment
16 except during transit time to final location?

17 A (WITNESS MUSELER) That is correct, sir.

18 Q And the auditor found, did he not, that they
19 had exceeded their limit of non-heated storage during
20 the transit time by approximately a week or a little
21 more than a week?

22 A (WITNESS MUSELER) Yes, sir. They did exceed
23 the allowable transit time and that is the reason we
24 characterized this as a problem in keeping to that time
25 limit. However, this incident occurred in July of 1978,

1 so there certainly was not a heat problem, although they
2 should not be outdoors for that length of time, even in
3 the summertime.

4 (Counsel for Suffolk County conferring.)

5 Q Mr. Museler, if you look at note 7 to this
6 audit, isn't it true that two of the valves were
7 withdrawn from the level B storage in January 1973?

8 (Witnesses conferring.)

9 A (WITNESS MUSELER) Yes, sir, that is what the
10 note 7 indicates.

11 Q So that would have been outside its required
12 level of storage for somewhat over six months, correct?

13 A (WITNESS MUSELER) It certainly indicates they
14 were withdrawn from the warehouse six months prior to
15 the audit observation. I certainly can't tell from what
16 is available that they were not stored outdoors,
17 although I would find that hard to believe.

18 MR. LANPHER: Judge Brenner, I would like to
19 move four audits findings into evidence. One is already
20 in -- field audit 769, Item 4.2 -- and I don't think it
21 needs to be moved in again. I think we have --

22 JUDGE BRENNER: Well, it is okay to include it
23 and we will forgive the redundancy because otherwise I
24 think you will have problems and beyond that we have now
25 looked at it a little differently.

1 JUDGE BRENNER: I'm going to use your listing
2 as to what was moved in when as a handy index, and
3 therefore the redundancy will be helpful.

4 MR. LANPHER: Every time we move something in
5 we will note it.

6 JUDGE BRENNER: I would like to ask a question
7 about the last one, Field Audit 803. Since we don't
8 have the note in front of us, I didn't quite follow the
9 situation, Mr. Museler, and I guess that is my trouble.

10 Is the audit note wrong when it says it was
11 drawn from the warehouse on July 18?

12 WITNESS MUSELER: Not for four of the valves.
13 Four of the valves, the note indicates that they were
14 withdrawn on 7-18. What Mr. Lanpher was referring to
15 was an indication that at least two of the valves were
16 withdrawn in January of 1978 -- excuse me -- in January
17 of 1978.

18 JUDGE BRENNER: Excuse me for interrupting.
19 I'm just comparing numbers of valves.

20 WITNESS MUSELER: The problem is that the
21 auditor refers to three specific valves in Audit Finding
22 (4.1) and then in the note refers to two of those
23 valves, but also refers to a number of other valves
24 stored in the temporary laydown area that were also
25 withdrawn in July.

1 JUDGE BRENNER: But which are not necessarily
2 included either by number or description in the finding?

3 WITNESS MUSELER: That is correct, sir. It is
4 also very confusing to me that the audit finding would
5 not have indicated the condition of two of the valves,
6 at least two of the valves; and I say it that way
7 because the way the note is typed out, it is relatively
8 clear that he means two of the valves were withdrawn in
9 January of '78, and two other valves, it is not clear to
10 me what he means.

11 What is surprising to me is that the auditor
12 didn't indicate the fact that at least the records in
13 the warehouse would have indicated that two of those
14 valves would have been withdrawn six months prior to
15 this audit. That would have been a rather important
16 thing for him to note in the audit finding. That is why
17 I am kind of struggling with this.

18 JUDGE BRENNER: Okay. So far I'm reassured in
19 the sense that you have the same confusion I have on my
20 brief comparison of the finding with Footnote 7.

21 Now that I have got Footnote 7 in front of me,
22 Mr. Kelly, you are off the hook in the sense that you
23 have one A.R. Muller actively working for you on this
24 one. I realize we're talking about August 7th, 1978,
25 and that is a long time ago.

1 Having said all of that, do you know anything
2 about this, Mr. Muller, or Mr. Kelly? Particularly the
3 note with regard to two of the valves being withdrawn
4 from the warehouse back in January '78 and then not
5 picked up in the finding.

6 (Panel of witnesses conferring.)

7 JUDGE BRENNER: If you don't know, that's the
8 answer. That's enough for right now. I indicated why I
9 wouldn't be shocked at that answer at this moment.

10 (Panel of witnesses conferring.)

11 WITNESS KELLY: I'm sorry. We don't know.

12 JUDGE BRENNER: I will give you your copy back
13 when it is convenient.

14 BY MR. LANPHER: (Resuming)

15 Q Gentlemen, turning your attention to Field
16 Audit 1301, Finding (4.2), this was an instance where
17 excessive heat was being maintained for a particular
18 piece of equipment, is that correct?

19 A (WITNESS MUSELER) Mr. Lanpher, the auditor, I
20 believe, correctly believed that excessive heat was
21 being applied. When this condition was reported it was
22 evaluated by Engineering, and it was determined that the
23 requirements of the manufacturer were in fact being
24 adhered to. And the auditor -- with the information the
25 auditor had to go on, he did make the correct

1 observation.

2 As it turns out, the manufacturer's
3 instructions in this regard were sort of like the
4 previous audit note in the interpretations, and when it
5 was all looked at by the engineers, the amount of heat
6 being applied was proper, and the temperatures were
7 acceptable. But the auditors -- the auditor, I believe,
8 correctly noted this situation and brought it to the
9 attention of the Engineering Department.

10 MR. LANPHER: Judge Brenner, I would like to
11 move in Field Audit 1301, Finding (4.2).

12 JUDGE BRENNER: Did you move 803 in?

13 MR. LANPHER: Yes, I did.

14 JUDGE BRENNER: All right. In the absence of
15 objection we will admit Field Audit 1301, Finding (4.2).

16 (The item referred to,
17 Field Audit 1301, Finding
18 (4.2), was received in
19 evidence.)

20 BY MR. LANPHER: (Resuming)

21 Q Gentlemen, turning your attention again to FQC
22 Audit 21, am I correct that in Findings (B.9) and (B.14)
23 of that audit that the same findings were made, that
24 humidity conditions in the storage area were not being
25 maintained at the correct level, that they were being

1 maintained at 70 percent humidity instead of a maximum
2 60 percent?

3 A (WITNESS BALDWIN) Mr. Lanpher?

4 Q Yes, Mr. Baldwin.

5 A (WITNESS BALDWIN) Yes, they are the same
6 findings. If you read the audit report I believe the
7 words are identical to two audited organizations, one
8 FQC and the other the Construction Department. But you
9 referenced a point there of relative humidity of 70
10 percent. There is a story behind this whole
11 observation, and in fact I don't believe it is true that
12 it was 70 degrees or 70 percent, because we had the
13 opportunity last week to review the strip charts on
14 that, and the percentage of between 3-23 and 3-30 was 66
15 percent. Before that, 3-16 through 3-23, it was 61
16 percent. And back in 2-23 through 3-3 it was 56 percent.
17 Now, I personally had conversations with the
18 manager of the warehouse facilities, and he offered
19 additional background to this item, that being that this
20 being a level A storage area, back in January of '77 he
21 noted that he was having anomalies with his humidity
22 controls also. After an investigation by he and his
23 people, he had determined that the root cause of his
24 problem was the filtering system, and shortly thereafter
25 he audited the filters. They were received on the

1 construction site on 3-7-77 and put in sometime in early
2 April.

3 There was also a review if there was any
4 apparent damage because of this increase in humidity
5 percent, and on 4-13 through the 18th there was another
6 check of the strip charts that showed that the level A
7 was well below the 60 percent humidity level.

8 Therefore, the condition that was recognized not only in
9 the audit at this point in time but recognized quite a
10 bit earlier by Mr. Fitzpatrick in January was corrected.

11 (Discussion off the record.)

12 BY MR. LANPHER: (Resuming)

13 Q Your conclusion then, Mr. Baldwin, is that the
14 auditor was wrong?

15 A (WITNESS BALDWIN) No, sir. I think the
16 conclusion here is a couple of things. Number one, the
17 standard practices on the job site by management and in
18 their job responsibilities picked this up in January,
19 apparently unbeknownst to the auditor. He came along in
20 3-28-77 and during the normal course of his audit using
21 an audit attribute checklist went in and checked this
22 thing out and found that evidence. In the meantime,
23 other things had been going on which he apparently was
24 unaware of from what I can tell, and it shows to me two
25 things: that management in this particular are for

1 material control or warehousing, if you will, was
2 cognizant of what was going on and the auditor was doing
3 his job.

4 Q So this was a problem, but it was fixed
5 shortly after the audit observation by putting in the
6 new filter?

7 A (WITNESS BALDWIN) It was fixed, physically
8 fixed after that. I would like to think it was fixed
9 back when Mr. Fitzpatrick made his evaluation and
10 ordered the filters and was in the process of correcting
11 the situation.

12 Q Gentlemen, in Findings (D.16) and (D.17) of
13 the same field quality control audit, am I correct that
14 in each instance the auditor determined that equipment
15 -- in one case heaters and in another case pump motors
16 and pumps -- were being stored under the wrong
17 conditions?

18 JUDGE CARPENTER: Mr. Lanpher, I would like to
19 inquire, do you mean heaters or hangers?

20 MR. LANPHER: Hangers. I have "heaters"
21 written down, but I'm told I'm wrong.

22 WITNESS ARRINGTON: Could you repeat your
23 question, please?

24 BY MR. LANPHER: (Resuming)

25 Q Looking at both of those findings, in each

1 instance you have equipment that was stored under the
2 wrong conditions.

3 A (WITNESS ARRINGTON) In observation (D.16) the
4 spring hangers that are listed here were required to be
5 stored under C level conditions. At one point in time
6 they were stored under those conditions. However, due
7 to wind damage or whatever, the roof which was a
8 polyethylene or polyurethane covering had partially
9 blown away, therefore lowering the conditions to a
10 D-level storage condition. They were required by
11 procedures to be stored in C level conditions. These
12 are structural supports. All of these supports after
13 they come out of the storage area are going in to be
14 installed in the building, are all sandblasted in and
15 protective coatings -- paint in this particular case --
16 would be applied to them, meaning that there is no
17 damage done to them as a result of being stored in the D
18 level conditions.

19 It is in violation of the requirement of the
20 procedure, but that particular area was repaired; a roof
21 was put on there by the mechanical contractor to meet
22 the requirements, and it therefore would have been
23 upgraded back to a C level condition. That is for
24 observation (D.16).

25 Q And (D.17) we have a level C versus level D

1 problem again, correct?

2 A (WITNESS ARRINGTON) The requirement here by
3 the project procedure required that these particular
4 components be stored in a B level storage area -- I'm
5 sorry -- in a C level storage area.

6 JUDGE BRENNER: I think Mr. Lanpher's question
7 confused you. Let's take out the "again."

8 BY MR. LANPHER: (Resuming)

9 Q This is a problem of storing in a C level when
10 the storage history required a B level, correct?

11 A (WITNESS ARRINGTON) The storage history cards
12 for observation (D.17) required that this equipment be
13 stored in a B level area. Upon further investigation we
14 found out that the manufacturer of the pumps indicated
15 that they could be stored in a B or a C level storage
16 area. They were stored in a C level storage area. That
17 is the only difference is the heat that would be applied.

18 The corrective action that was taken here was
19 that the cards, the history cards, were reissued, and
20 the storage area was changed to a storage level C as per
21 the manufacturer's instructions originally. The project
22 procedure required it to be B or C, and it was being
23 stored in C which was acceptable to the manufacturer's
24 requirements, so the card was changed.

25 Q Was this an instance where the storage history

1 card was incorrect?

2 A (WITNESS ARRINGTON) The storage history card
3 had to be updated to the current practice of the storage
4 level for this particular material.

5 A (WITNESS BALDWIN) Mr. Lanpher, may I add
6 something.

7 Q It depends. If it is limited right to this,
8 sure.

9 A (WITNESS BALDWIN) It is. In reviewing the
10 situation and the equipment storage history cards we
11 note that on the circulated water pumps they were
12 identified as on the bearing pumps they required -- it
13 was indicated that they required B, but the vendor
14 indicated that C would be appropriate. So the
15 corrective action to clarify the whole situation as to
16 which area would be was that the storage history cards
17 were corrected for both these sets and reissued as C as
18 should have been from the beginning.

19 MR. LANPHER: Thank you.

20 Judge Brenner, I would like to move into
21 evidence the following findings of FQC 21: (B.9),
22 (D.14), (D.16) and (D.18).

23 JUDGE BRENNER: In the absence of objection
24 they are admitted into evidence.

25 (The items referred to,

1 FQC Findings (B.9),
2 (D.14), (D.16) and
3 (D.17), were received
4 in evidence.)

5 JUDGE BRENNER: At the risk of belaboring the
6 last one, which is --

7 JUDGE MORRIS: Mr. Lanpher, the last one you
8 mentioned was D, David, 18. Did you mean 17?

9 MR. LANPHER: I certainly did. I apologize.
10 D.17.

11 JUDGE BRENNER: I heard it when I was reading
12 it, which is a danger.

13 On (D.17) let me say two things. Forgive me,
14 Mr. Baldwin, if I observe that I thought your answer
15 added nothing to the answer, the previous answer, I
16 guess of Mr. Arrington, not because it wasn't pertinent
17 information but because I think he said exactly that
18 before you added your answer. And maybe I'm wrong and
19 the transcript will show it.

20 WITNESS BALDWIN: I think you are right, Judge.

21 JUDGE BRENNER: When somebody comes to decide
22 where to put that equipment are they supposed to look at
23 the storage history card in order to determine where to
24 put it, and if so, was there a mistake made given what
25 the guidance was on the storage history card,

1 notwithstanding the fact that the later check showed no
2 level C storage is acceptable given the manufacturer's
3 requirements?

4 WITNESS ARRINGTON: Judge Brenner, when an
5 item is received on site, the storage history card is
6 developed at that point in time. The project procedure,
7 which is an engineering procedure, requires pumps to be
8 stored in a B or C level storage area, in different
9 conditions if it is in the C level storage area, meaning
10 dessicant. In this particular case the card did not
11 indicate B and C were dessicant or C were dessicant. It
12 indicated a B level storage area. Upon further
13 investigation we found that the manufacturer's
14 instructions indicated that C was acceptable. The card
15 was written as B. It could have been written as B or C
16 with a dessicant. The card was corrected and updated to
17 mean that it could be stored at the C level storage area.

18 JUDGE BRENNER: I understand that. What I
19 don't understand is since the card indicated B,
20 shouldn't it have been put in B, or is something other
21 than the storage history card used to decide where to
22 put it?

23 Maybe I don't understand what you mean by the
24 dessicant.

25 WITNESS ARRINGTON: It is material that is put

1 inside to absorb moisture.

2 JUDGE BRENNER: Yes, I know that. Did the
3 card indicate -- well, let me back up to my overall
4 question. I understand as it turned out level C was
5 okay under the appropriate conditions, but I understand
6 that the card, the storage history card, did not
7 indicate that; rather, the storage history card
8 instructed that it be stored on level B. So my question
9 is was a mistake made in putting it in level C storage
10 as far as what the person storing it should have done
11 given the storage history card?

12 WITNESS ARRINGTON: There was a mistake on the
13 card. The location of the pumps, yes, the pumps, the
14 pump motors were proper. The storage level that was
15 indicated on the card was in error.

16 What we do at the site in some cases, we take
17 C level storage areas because of the temperature
18 requirements. It is an enclosed structure, and we
19 upgrade them specifically in certain areas to
20 demonstrate that area to be a B level requirement. The
21 card itself was in error in indicating that it should
22 have been stored in a B level storage environment. The
23 location of the pump motors was proper, even though it
24 doesn't say that here.

25 WITNESS MUSELER: Judge Brenner, I believe the

1 answer to your question is that we don't know why it was
2 placed in level C when the storage history card
3 indicated level B, even though level C was the correct
4 storage area.

5 JUDGE BRENNER: I asked the question mostly to
6 try to get a handle on the use of the storage history
7 cards as part of the everyday procedure of your
8 personnel.

9 Am I right that that would have been the
10 action document that would have been looked to once it
11 had been developed by the person placing the equipment,
12 or did you have somebody smart enough to know that the
13 storage history card was wrong?

14 WITNESS MUSELER: I wish I could say that I
15 knew that from personal knowledge. However, what is
16 true is that the receiving personnel and the personnel
17 who stored this equipment on C, hundreds of pumps, all
18 of which go in level C with perhaps one or two
19 exceptions, and thousands of valves that all go in level
20 C with perhaps some exceptions. And I would venture a
21 guess that it is that kind of a situation that might
22 have resulted in it going to C rather than to B.

23 JUDGE BRENNER: Okay. But I am correct that
24 unless and until the storage history card was changed,
25 the storage history card should have been followed at

1 the time the equipment was placed in storage.

2 WITNESS MUSELER: Yes, sir. The storage
3 history card should have been followed.

4 BY MR. LANPHER: (Resuming)

5 Q Mr. Gerecke, I would like to turn your
6 attention now to six quarterly reports to management,
7 the single paragraph in each instance of each relating
8 to storage matters or environmental protection for
9 installed equipment, and those are the quarterly reports
10 for 5-30-80, July 22, 1980, November 13, 1980, February
11 17, 1981, August 31, 1981, and December 3, 1981. And
12 all of these are included as part of Suffolk County
13 Exhibit 63.

14 Mr. Gerecke, do you agree that in each of
15 these reports you noted or reported to management that
16 field audits during that previous time period that you
17 were reporting upon had identified problems of the
18 environmental protection of installed equipment? To be
19 more precise, I think the first five said installed
20 equipment, and the last one is stored equipment.

21 (Panel of witnesses conferring.)

22 A (WITNESS GERECKE) For each of the six reports
23 that you referred to do contain information about field
24 audits which have identified areas where adequate
25 protection has not been provided to equipment either

1 stored in place or otherwise. They almost all also note
2 that all or all but one of those items were instances of
3 failure to provide protection which we have identified
4 in previous reports that have been corrected by the time
5 the subsequent report was issued. And if you look at
6 the specific field audit reports which are referenced in
7 these various quarterly reports, they all contain an
8 overall conclusion that the storage and maintenance of
9 stored in place equipment was found to be generally
10 satisfactory.

11 Q Mr. Gerecke, you thought that these field
12 audit findings, however, were of sufficient importance
13 to bring it to management's attention, correct?

14 A (WITNESS GERECKE) The field audit findings --
15 MR. LANPHER: Judge Brenner, could I get a yes
16 or no and then an explanation?

17 JUDGE BRENNER: I think yes, you can. Unless,
18 Mr. Gerecke, you have a reason why you can't answer it
19 yes or not.

20 WITNESS GERECKE: It is partly yes and partly
21 no.

22 JUDGE BRENNER: That's his answer. Now you
23 can explain.

24 WITNESS GERECKE: The initial time that these
25 items or these field audit findings were referenced, the

1 first quarterly report in which they were referenced, we
2 did consider at that time that this was an item which
3 because of its significance relative to the total
4 population of audit findings for that quarter should be
5 called to management's attention. Subsequent reports
6 were primarily to update management on the status, and
7 the significance or lack of significance of the findings
8 of specific audits mentioned really had little to do
9 with it.

10 They would have been, once an area such as
11 this is mentioned in a quarterly report and each
12 subsequent quarterly report or almost each one would
13 contain a statement relative to that subject just to
14 keep management updated until such time as the total
15 subject can be closed out.

16 BY MR. LANPHER: (Resuming)

17 Q Mr. Gerecke, the initial report you're
18 referring to was May 30, 1980, am I correct?

19 A (WITNESS GERECKE) That is correct.

20 Q Now, the next report was July 22, 1980, and in
21 that report, which is on page 2, the first full
22 paragraph, I'm not sure but -- the second paragraph on
23 that page, that is in the category of followup on
24 previously reported items, correct? I think if you look
25 back at page 1, sir, is the heading I was referring to.

1 A (WITNESS GERECKE) That is correct.

2 Q And in this quarterly report it identifies
3 that there have been additional audit findings in Field
4 Audit 1098 subsequent to the previous audits that were
5 reported in the May 30, is that correct?

6 A (WITNESS GERECKE) That is correct.

7 Q Now, looking at the November 13, 1980
8 quarterly report, this quarterly report, you report to
9 management on this matter; it is not in the followup
10 section, but it is in the, shall I call it the heart of
11 the memo or the heart of the report section, correct?

12 A (WITNESS GERECKE) That is correct, yes, sir.

13 Q And you report there that "Two more field
14 audits have found failures to provide adequate
15 environmental protection for installed equipment,"
16 correct?

17 MR. ELLIS: Which date? And maybe it's just
18 late in the afternoon.

19 MR. LANPHER: November 13, 1980.

20 MR. ELLIS: I beg your pardon.

21 MR. LANPHER: November 13, 1980.

22 MR. ELLIS: Give me a moment to find it.

23 Which paragraph are you referring to?

24 MR. LANPHER: The bottom of the first page.

25 MR. ELLIS: The reference to the first

1 sentence, is that what you're referring to?

2 MR. LANPHER: I've directed the witness'
3 attention to the bottom paragraph.

4 BY MR. LANPHER: (Resuming)

5 Q In this report, Mr. Gerecke, you are advising
6 management of two additional audits where two failures
7 to provide adequate environmental protection for
8 installed equipment were noted, correct?

9 (Panel of witnesses conferring.)

10 A (WITNESS GERECKE) That is correct.

11 Q And in the February 17, 1981 quarterly report
12 -- that is the first paragraph of the followup section
13 -- you advised management that "While the items reported
14 in previous audits have been corrected, subsequent field
15 audits, two of them, have identified further failures to
16 provide environmental protection for installed
17 equipment," correct?

18 (Panel of witnesses conferring.)

19 A (WITNESS GERECKE) Mr. Lanpher, could you
20 repeat that question, please?

21 Q Yes. We were looking at the February audit,
22 February 1981 audit, and in this audit you again advised
23 management that -- well, you advised management that in
24 your opinion the deficiencies or problems from previous
25 audits had been corrected, but two additional field

1 audits had been conducted which identified further
2 failures to provide environmental protection for
3 installed equipment.

4 A (WITNESS KELLY) I believe you said the
5 February audit. Did you mean to say the February report?

6 Q The February report to management, February
7 '81.

8 A (WITNESS GERECKE) Yes, that is correct. I
9 think in each of these there was also a statement near
10 the bottom or the entries in the quarterly reports that
11 Quality Assurance will continue to monitor this area.
12 We realize that this is an area where one can expect to
13 have continuing problems, which is why we have an audit
14 program which performs probably six audits a quarter in
15 each of these areas.

16 We have told management that we would continue
17 to monitor it, and in each subsequent report we do try
18 to keep management advised as to what we are finding.
19 It is something we expect. We have frequent audits so
20 that we can find it and identify it and obtain the
21 necessary corrective action.

22 Q If I asked you about the August 31, 1981 and
23 the December 3, 1981 audits, am I correct that you would
24 agree that in each of those you identified further field
25 audits wherein failure to provide the adequate

1 environmental protection was identified?

2 (Pause.)

3 While you are considering that, the portions
4 in the August 31 report, and it's on page 2, the
5 paragraph that has the paren 8 in the lefthand margin,
6 and then in the December 1981, page 1, the last
7 paragraph.

8 Am I correct, Mr. Gerecke, that each of those
9 final two reports to management have the same kind of
10 report?

11 A (WITNESS GERECKE) Yes, Mr. Lanpher. Each of
12 those quarterly reports reference field audit reports
13 which identify problems in the environmental protection
14 equipment, which I believe that I indicated were the
15 thing we would normally expect. We would expect them to
16 occur almost audit after audit. We do group them
17 quarterly, and each quarter there have been instances
18 where there have been one or two, in one case three
19 audit reports, which we did identify to management.

20 Each of these also indicates that each or most
21 of the findings had been corrected at the time the
22 quarterly report was issued.

23 Q Mr. Gerecke, would it be fair to state that
24 during the time period embraced by these quarterly
25 reports to management, roughly May 1980 through December

1 or into December 1981, you advised management in each
2 quarterly report that there were problems related to
3 environmental protection for installed or stored
4 equipment, stored in place equipment?

5 A (WITNESS GERECKE) Yes, that is correct.

6 MR. LANPHER: Judge Brenner, I would like to
7 move into evidence the portions of the quarterly reports
8 to management that I have been referencing, starting
9 with the May 30, 1980 report -- and, again, these are
10 all part of Suffolk County Exhibit 63 for
11 identification. It is the first full paragraph on the
12 first page, and in the lefthand margin there is a 1 in
13 parentheses. In the July 22, 1980 report you go to page
14 2, and it is the second paragraph or the middle
15 paragraph on that page, and there is a 5 in parentheses
16 in the lefthand margin. The November 13, 1980 report,
17 it is the bottom paragraph on page 1. February 17,
18 1981, it is the first -- well, it is the first paragraph
19 on page 1 following the title "Followup on previously
20 reported items," and there is a 2 in parentheses in the
21 lefthand margin. The August 31, 1981 report, page 2, a
22 little over halfway down the page, the paragraph
23 starting, "Failures to provide," and there is an 8 in
24 parentheses in the lefthand margin. And the December
25 31, 1981 report, it is the last paragraph on the first

1 page.

2 And I would like to move those into evidence.

3 JUDGE BRENNER: Okay.

4 Mr. Ellis, I didn't go back to my original
5 documents. Did you have a chance to ascertain or did
6 you agree that those were portions that were asked
7 about, just as a quality assurance check?

8 MR. ELLIS: Yes, but I think that it was late
9 in the afternoon, and I think I followed most of what he
10 said. And I think they were the ones that were asked.
11 I'm going to look at it again this evening.

12 JUDGE BRENNER: Okay. Let's do it this way.
13 They are admitted to the extent they were asked about.
14 They are admitted with respect to the portions that were
15 asked about. And we believe the listing you just gave
16 are the portions.

17 For the sake of the Reporter in terms of
18 indexing them just list the documents and note in part
19 as indicated, and when you do your final list you
20 doublecheck them, but by that time everybody will have
21 had a chance to do that.

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1 (The documents referred
2 to, portions of the
3 quarterly reports of
4 5-30-80, 7-22-80,
5 11-13-80, 2-17-81,
6 8-31-81 and 12-31-81,
7 were received in
8 evidence.)

9 MR. LANPHER: Judge Brenner, I meant to ask
10 about every one of those portions. I meant to combine
11 several to expedite, and if anyone decides I didn't ask
12 about them all and thus objects other than a standing
13 objection, I would like to be advised, and I will go
14 back and ask.

15 But I understand your ruling that those
16 portions I just identified are as of now admitted in
17 evidence.

18 JUDGE BRENNER: Yes. It's just a simple
19 matter that I had trouble keeping up on this one
20 instance.

21 MR. LANPHER: Fine.

22 JUDGE BRENNER: All right. Judge Carpenter
23 had to leave. He left after the questioning was
24 completed and was smart enough to leave while we sorted
25 out this list, so he didn't miss any substance. And I

1 would like to adjourn for the day unless there's
2 something that needs to be done.

3 MR. LANPHER: Nothing on the record. I have
4 something off the record.

5 MR. ELLIS: Can we let the witnesses go?

6 JUDGE BRENNER: Let me close the record first.

7 We will be back at 8:30 tomorrow morning, and
8 we are adjourned for the day.

9 (Whereupon, at 5:10 p.m., the hearing was
10 recessed, to be reconvened at 8:30 a.m., the following
11 day, Friday, October 15, 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: October 14, 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)