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LILCO, July 2, 1984

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION 84 JUL -5 P12:17

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
LONG ISLAND LIGHTING COMPANY	)	Docket No. 50-322-OL-4
	)	(Low Power)
(Shoreham Nuclear Power Station,	)	
Unit 1)	)	

SUPPLEMENTATION OF  
JUNE 22, 1984 ORAL ARGUMENT

At the oral argument on June 22, 1984, concerning various discovery matters, the Licensing Board granted leave to the parties to supplement the record by supplying direct quotations from pertinent portions of the transcripts of depositions. Accordingly, LILCO hereby supplements the record as follows. Copies of the referenced transcript pages are attached.

A. In Support of LILCO's Motion For Protective Order

The following transcript references from the deposition testimony of Michael Dirmeier and Jamshed K. Madan on June 14, 1984, indicate that the matters in Suffolk County's Second Discovery Request pertain to the issues of LILCO's financial qualifications to operate Shoreham, the impact of LILCO's financial condition on its ability to conduct low power testing and a comparison of the costs of decommissioning Shoreham, if a full

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power license is not granted, with any economic benefit from early operation, all of which were described in LILCO's Motion for Protective Order and oral argument in support of that Motion on June 22:

June 14, 1984 Deposition of Michael Dirmeier

<u>Page</u>	<u>Description</u> <sup>1/</sup>
14	Interrogatories are not limited to economic or financial claims made by LILCO in its application for exemption. Rather, they were designed to obtain information concerning financial, economic and public benefit aspects (as defined in his deposition) of LILCO's application.

June 14, 1984 Deposition of Jamshed K. Madan

<u>Page</u>	<u>Description</u>
28	Will investigate economic consequences if Shoreham does go on line, if Shoreham does not go on line and, the cause for greatest concern, possible need to decontaminate the plant if Shoreham doesn't go on line.
29-30	Will also investigate possible incremental expenses attached to fuel loading, need for additional personnel and the need for additional security. Will also analyze LILCO's ability to respond to some kind of major financial disaster, such as a hurricane, in light of its limited cash resources. The uncertainty surrounding Nine Mile 2 is also a concern.

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<sup>1/</sup> All descriptions herein are paraphrased for brevity. The pertinent transcript pages are attached.

- 99-100 Does not know why LILCO's periodic financial reports since 1983 are needed for his analysis, but reviewing LILCO's general cash situation and events over 1983-84 could be critical to a cost-benefit analysis and to the potential issue of how LILCO's cash position may change. This is pertinent to LILCO's financial ability to operate the plant. Second Discovery Request seeking financial runs, reports, analyses showing actual and projected cash flow revenue expenses, capitalize cost and capitalize expenses is crucial to his analysis because it reveals what the capital structure looks like and how the cash flows. This is relevant to the Company's financial ability to operate the plant and go into low power testing.
- 109 Through interrogatories and depositions, hopes to find out what LILCO's response will be to various scenarios (based on its financial situation, whether finances prompt certain cutbacks, etc.).
- 110 Purpose is to discover whether or not any safety problems will arise from the Company's financial condition.
- 123-24 Second Discovery Request to LILCO is responsive to all the issues Madan intends to investigate.

B. In Support of LILCO's Request for Supplementation of Discovery Responses

The following references to deposition transcripts support LILCO's assertion at the June 22, 1984 hearing that proposed witnesses on behalf of Suffolk County had expressed no final opinions during their depositions with respect to the substance of their testimony:

June 7, 1984 Deposition of Aneesh Bakshi

<u>Page</u>	<u>Description</u>
43	Has formed no conclusion as to whether or not the particular model EMD diesel generators at Shoreham are suitable as an emergency power source.
63	Has reached no conclusion concerning the EMD diesels at Shoreham or the method in which LILCO intends to use them.
173	Does not know if there are any codes or standards applicable to the Shoreham EMD diesels with which they do not comply.
174	Has no opinion as to whether EMD diesels are able to reach their required speed.
176-77	Has no opinion as to whether Shoreham EMD diesels have the ability to take load and has not even formulated a plan for review of the issue.
178	Has reached no conclusion or opinion concerning the reliability of the Shoreham EMD diesel components.
181	Has no opinion as to whether the Shoreham EMD diesels are safe enough for their intended use.
182	Has made no design calculations concerning whether stress levels on the Shoreham EMD diesels pose any problem.
187	Has no opinion yet on how frequent surveillance testing could be made in order to ensure reliability.
193	Has formulated no opinion concerning the reliability of the EMD diesels based on their operating history.
198	Does not know if he will express an opinion concerning whether or not Shoreham EMD's

are capable of powering the emergency load which may be necessary to mitigate an accident.

June 4, 1984 Deposition of G. Dennis Eley

<u>Page</u>	<u>Description</u>
33	Has formed no conclusions concerning the reliability of Shoreham EMD diesels.
42	Has no opinion concerning the running reliability of the EMD diesels at Shoreham.
42-43	Has no opinion right now concerning unavailability of diesels due to mechanical failure.
55-56	Has performed no calculations concerning the ability of the EMD diesels to reach the necessary speed.
58-59	Has no opinion concerning the reliability of any particular components of the EMD diesels at Shoreham.
63	Has no opinion concerning the battery starting units on the EMD diesels at Shoreham.

June 11, 1984 Deposition of Christian Meyer

<u>Page</u>	<u>Description</u>
36	Dr. Meyer and Dr. Roesset have not yet decided what analyses they will be performing and have not yet divided tasks among themselves.
62	Has reached no final opinion as a result of his visit to Shoreham.
77-78	Has reached no opinion concerning onsite power sources which consists of a gas turbine, transformers, switchyard, four mobile

diesel generators and their interconnecting parts.

79 Has no opinion concerning transmission line systems connecting onsite equipment to local substation and no opinions concerning substation components used to switch or control incoming power to the site.

80 Has no opinion concerning fuel oil storage tanks.

80-81 Has no opinion concerning physical electrical connections.

143-44 Has formed no opinion concerning items he will analyze in phase two of his work.

144-45 Has not yet begun his phase two analyses.

June 12, 1984 Deposition of Robert K. Weatherwax

<u>Page</u>	<u>Description</u>
85	Has done nothing to determine what the potential failure mechanisms are in connection with the components connecting the gas turbine and the bus.
182-83	Has reached no final opinions with respect to LILCO's application for a low power license in any aspect of his review.

June 12, 1984 Deposition of Mohammed El Gasseir

<u>Page</u>	<u>Description</u>
48	Has formed no opinions concerning low power license application which he is reviewing. Has not been asked to form any opinions. Does not know if he will be expected to testify and offer any opinions.

June 14, 1984 Deposition of Jamshed K. Maden

<u>Page</u>	<u>Description</u>
52-53	Has not "reached a final analysis" on whether there are any short-term higher costs of securing financing by LILCO as a result of the delay in bringing Shoreham on line.
66	Has reached no opinions yet as a result of his work.
80-81	Has reached no opinion concerning the cost to LILCO of a low power license.

June 14, 1984 Deposition of Michael D. Dirmeier

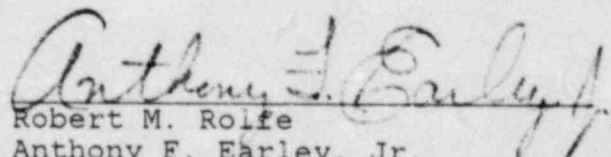
<u>Page</u>	<u>Description</u>
16-17	Has no final conclusion about what a comparison of early testing vs. late testing will reveal.
52	Has not reached any opinion as to whether there would be any delay costs to LILCO as a result of delaying low power testing.
60	Has no conclusions with respect to the savings of oil by bringing Shoreham on line.
84	Intends to finalize his opinions by July 15 or 16 so they can be filed.

In addition to the above depositions, and in order to keep the Board fully advised, LILCO provides the following references to the deposition of Gregory C. Minor taken June 26, 1984, wherein Mr. Minor stated that he, too, had no opinions:

<u>Page</u>	<u>Description</u>
46	Plans for MHB testimony "not finalized" and participation in testimony by Robert Weatherwax "not defined at this time."
51	SERA (Mr. Weatherwax) has not yet reached any conclusions and Minor does not know the extent of his participation in SERA testimony.
55	SERA testimony will be finalized by its due date.
56	Does not know whether Dr. Roesset will testify and does not know when a decision will be made concerning his testimony.
57	Minor "may be involved" in the seismic testimony.
59	Counsel for Suffolk County confirms that there is no certainty as to whether Dr. Roesset will be a witness. Dr. Meyer has reached no opinion.
73	Minor is not aware of any opinions by the seismic witnesses yet.
96-97	Bakshi and Eley have reached no firm conclusions at this time.

Respectfully submitted,

LONG ISLAND LIGHTING COMPANY

  
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DATED: July 2, 1984

LILCO, July 2, 1984

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CERTIFICATE OF SERVICE

'84 JUL -5 P12:17

In the Matter of  
LONG ISLAND LIGHTING COMPANY  
(Shoreham Nuclear Power Station, Unit 1)  
Docket No. 50-322-OL-4 (Low Power)

OFFICE OF SECRETARY  
REGULATING & SERVICE  
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I hereby certify that copies of LILCO's Supplementation of June 22, 1984 Oral Argument were served this date upon the following by first-class mail, postage prepaid:

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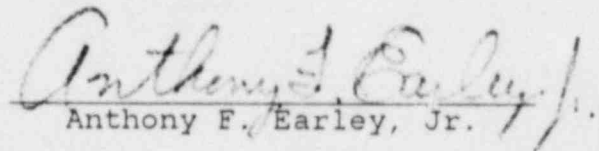
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DATED: July 2, 1984

1 financial aspects of the low power -- the application  
2 for exemption?

3 A Well, I don't know that I would say they were  
4 limited to that. They are designed to provide us with  
5 the information we need so that we can present a  
6 complete case regarding the financial and economic and  
7 public benefit aspects of LILCO's applications.

8 Q Tell me what financial aspects you're looking  
9 at with respect to LILCO's application.

10 A Well, I believe Mr. Madan testified to this  
11 this morning, and we can go back to it all again.

12 MR. SEDKY: Given your understanding.

13 THE WITNESS: There are cost-benefit aspects  
14 of the company's application. There are financial  
15 aspects of initiating the testing when you are faced  
16 with potential reorganization. There is analysis of the  
17 company's financing plan. There is concern as to the  
18 company's situation where costs exceed revenues, and  
19 there needs to be analysis of that. So there are a  
20 number of financial areas we will be exploring.

21 BY MR. ROLFE: (Resuming)

22 Q You mentioned the cost-benefit application.

1 those are the three leading candidates for consideration  
2 at this time.

3 Q How will you be comparing early testing with  
4 late testing, both assuming ultimate operation?

5 A Well, you have financial projections of the  
6 situation over a period of years with early testing and  
7 financial projections over a series of years with later  
8 testing, and you compare those, analyze them.

9 Q Have you done that kind of analysis yet?

10 A At this time?

11 Q Yes.

12 A In this proceeding?

13 Q Yes.

14 A No.

15 Q Have you done it in any other proceeding?

16 A For testing?

17 Q Yes.

18 A No.

19 Q Have you done any -- do you have any  
20 preliminary opinions or conclusions as to what that  
21 comparison will show?

22 A Well, no conclusion other than the fact that

1 we have read LILCO's claim that there's approximately a  
2 \$45 million a month benefit from early operation of the  
3 plant. That \$45 million consists of about \$26 million  
4 of ASC and as yet an undocumented \$19 million  
5 difference. And it's a preliminary conclusion that the  
6 ASC is of no real benefit in terms of present value. It  
7 doesn't change the value today of that plant. And we  
8 need to analyze the rest of it.

9 Q Do you know what the rest of it consists of?

10 A That's the subject of discovery with the  
11 company. It would include such things as continued  
12 maintenance for lubrication of pumps, continued purchase  
13 of material and supplies, ongoing testing of systems  
14 that are already in place, continued employment of  
15 personnel who eventually would operate -- test and then  
16 eventually operate the plant, if it goes to testing and  
17 operation and all the other activities that are going on  
18 at Shoreham at this time.

19 Q Can you explain how those factors will differ  
20 between early testing and later testing?

21 A Well, that is the subject of the discovery.  
22 We are seeking information from LILCO so that, in fact,

1 the potential for changing conclusions.

2 Q Do you have any opinion now as to whether  
3 there would be any delay cost to LILCO as a result of  
4 delaying low power testing?

5 A When you said delay cost to LILCO, you mean to  
6 LILCO's investors and not to LILCO's ratepayers?

7 Q Yes.

8 A I don't have a conclusion as to that, because  
9 one of the factors, as we discussed earlier, is if you  
10 delayed low power testing from July to November, that  
11 may or may not delay full power operation. It may not  
12 have any effect on full power operation, for that  
13 matter. So one does not necessarily proceed to the  
14 other.

15 Certainly, if you said to me assume that the  
16 NRC or whatever authority it is, is going to give us an  
17 order in December that says the diesels are no problem,  
18 the evacuation plan is no problem, and if there were any  
19 other problems, there are no problems, okay? And assume  
20 that low power testing takes three months. Then if I  
21 assume away all the problems, then delaying of a  
22 decision to low power test to December, may delay

1 and I haven't related this computation to LILCO's low  
2 power exemption or application for exemption.

3 Q Why did you perform this calculation?

4 A LILCO somewhere had said it would save 7.5  
5 million barrels and I was interested in -- one of the  
6 questions that was in my mind was what capacity factors  
7 did they assume. So I said, well, that's 48 percent of  
8 the oil. If I assume a 65 percent capacity factor, how  
9 much is that of electricity? Are the two numbers  
10 approximately the same percentage?

11 No, they're not. It is really a meaningless  
12 computation, to be frank with you, because it's not  
13 necessarily clear that a 65 percent capacity factor,  
14 while it would produce 34 percent of the electricity,  
15 would or would not produce 48 percent of the oil  
16 consumption. They don't necessarily have to relate to  
17 each other.

18 It is a computation I made and it was in one  
19 of my notebooks, and rather than not give it in response  
20 to the data request, we gave it in the data request. I  
21 am really not prepared to reach any conclusion based on  
22 that computation.

1 County?

2 A I expect the finalization to be done -- it has  
3 to be done so we can file it July 15th or 16th. I  
4 believe that's when the filing is required.

5 It is in part dependent upon the availability  
6 of information from LILCO in response to the requests.  
7 That will certainly have a significant impact as to when  
8 we can complete our analysis.

9 Q You're familiar with the document request that  
10 has been served on LILCO, identified as Suffolk County's  
11 second document request to LILCO?

12 A Yes.

13 Q Have you attempted to find any of the  
14 information requested in that second document request  
15 elsewhere?

16 A Well, most of that information is not  
17 available publicly to my knowledge, or I don't know  
18 where it is available publicly. Some of it might be  
19 available in the rate case, but very little would be  
20 because my memory of the rate case was that it  
21 was -- substantial discovery predates the starting point  
22 for most of the information requested there.

1 closely to the financial issues, so I will try and  
2 isolate them, if I could.

3           There is certainly a question of the, as far  
4 as the economic issue goes, the overall exposure of the  
5 low power process in terms of dollars and cents,  
6 depending upon the various outcomes that are likely in  
7 the ultimate resolution of Shoreham.

8           By that I mean if Shoreham does not go on  
9 line, is not licensed, I think you have a certain stream  
10 of dollars that flow out of that, a series of events, et  
11 cetera, that we would analyze. If the plant does go on  
12 line we clearly have a different stream. The  
13 relationship of the low power testing at that point is  
14 relevant in terms, at least generally at this point and  
15 in terms of what we know, we clearly would have to  
16 develop our thinking as we went along in this area.

17           But the area of greatest concern would be the  
18 irradiation of the plant, the decommissioning, the  
19 decontamination in the event the process was started and  
20 a final favorable resolution of the Shoreham issue from  
21 LIICO's standpoint was not obtained. So we have to  
22 present in effect what the exposure would be and we have

1 interrogatories out to LILCO to provide us information  
2 with regard to what their estimates are on  
3 decontamination and decommissioning in that likelihood.

4 Q Are there other economic issues, or does that  
5 sum up all of them you perceive now?

6 A As I say, now that is clearly a major economic  
7 issue, as we would see it at this point. There are  
8 other -- if we use the broader term financial issues, at  
9 this point there are clearly a number of them. The  
10 actual expenditures of dollars and the time frame of  
11 those dollars are also significant to us in terms of an  
12 evaluation and we are not quite sure which way it would  
13 go.

14 In this regard, it is our understanding that  
15 once the fuel is loaded that there would perhaps be  
16 additional incremental expenses in terms of additional  
17 personnel on site, in terms of additional security that  
18 might be involved in the operation and clearly once you  
19 do that and for whatever reason the licensing process  
20 drags on, you have these costs, if you would, on a  
21 continuing basis that we would have to evaluate and  
22 determine as to what the exposure in that regard would

1 be.

2           With regard to other issues in terms of a  
3 financial nature, there is the issue of cash. Every  
4 projection that LILCO has made to date shows LILCO  
5 running out of cash and the implications of that on the  
6 licensing process we see as fairly critical. What  
7 happens within the process as to how close they are to  
8 the margin, everything they have filed so far indicates  
9 there is no more room. Everything has been cut to the  
10 bone.

11           And to the extent that you have, as Mr. Sadira  
12 says in his Track II testimony, if you have a major  
13 financial disaster of some kind -- you have a storm, you  
14 have a hurricane, you have something like that -- you  
15 are so close to the edge that it's difficult to see  
16 where the cash resources would come from to address that  
17 kind of situation.

18           The other major area of great concern to us  
19 from a financial viewpoint is the uncertainty  
20 surrounding the situation at Nine Mile 2. Given that  
21 the company has in effect announced that it will not  
22 continue to make further direct payments, that it has

1 forecasts the supply end of it as opposed to the price  
2 end of it?

3 A No.

4 Q So you would rely on outside expertise for  
5 that?

6 A Yes.

7 Q Have you considered in arriving at the view  
8 that you expressed before that there may not be any real  
9 delay costs, which is a shorthand way of expressing it?  
10 I don't mean to mischaracterize what you said. I'm just  
11 using it as a shorthand phrasing.

12 A Say that again -- that there's not been a  
13 delay cost?

14 MR. SEDKY: He hasn't finished his question.

15 BY MR. ROLFE: (Resuming)

16 Q Let me start that one over. In expressing the  
17 opinion you reached before that you don't think it's  
18 accurate that there has been a delay cost or will be a  
19 delay cost, have you considered whether there are any  
20 short-term higher costs of securing financing to LILCO  
21 as a result of the delay in getting this plant in  
22 service and putting the costs in the rate base?

1           A       We have thought about that. We clearly have  
2 not reached a final analysis on the issue. It is  
3 something that has many components that we're going to  
4 have to think about. We will take that into account.

5           Q       Just in a broad sense, are there any  
6 additional issues that you plan to look at other than  
7 those you have described for me so far?

8           A       No. I think we have pretty much hit on the  
9 major ones, at least in terms of priority and  
10 importance. I think what I listed was where our  
11 emphasis would be.

12          Q       Looking at those issues, what are you trying  
13 to determine?

14          A       I think we are trying to determine and present  
15 what the end result will be for each one of them, and  
16 perhaps it is probably appropriate to go through each  
17 one item by item. In general we would try to see on the  
18 economic issue as to what the cost is and what the  
19 benefit is. I think that again is the shorthand we went  
20 through a little bit earlier as to what the exposure  
21 might be as against the potential benefits, if any.

22                   So that would be a self-contained analysis

1 A Am I aware of that?

2 Q Yes.

3 A No, I'm not specifically aware of that.

4 Q So you are not aware of whether that  
5 decision -- strike that.

6 Have you reached any opinions yet as the  
7 result of your work?

8 A No, other than the concerns we spoke about,  
9 and they would be concerns in the area we have been  
10 through now a couple of times.

11 Q Tell me what you have done thus far since  
12 being asked by the County to undertake your consulting  
13 work?

14 MR. SEDKY: On low power.

15 BY MR. ROLFE: (Resuming)

16 Q On low power.

17 A We have gathered together your application.  
18 We have received and analyzed or begun to analyze your  
19 Track II testimony, LILCO's Track II testimony. We are  
20 monitoring, obviously, the Track II case before the New  
21 York Public Service Commission. We have had meetings  
22 with counsel to begin discussing economic issues,

1 how it was treated in this rate case, as to whether  
2 these in fact are amounts of an ongoing nature that have  
3 been included in rates, haven't been included in rates.  
4 And those would be the kinds of considerations.

5 As far as the AFC goes, there is no question  
6 in my mind that that is a wash, that that is a pure  
7 wash, that that is pure interest being capitalized and  
8 amortized over a different period of time and you can  
9 change the numbers twenty different ways, but the  
10 present value will still be the same.

11 It is the other much smaller piece, the \$10-  
12 to \$20 million, in that range, that we have to look at  
13 to determine whether that is the real number or not.

14 Q When you were describing for me before the  
15 issues you intend to look at, the first was the overall  
16 exposure of the low power license process in dollars and  
17 cents, depending on ultimate resolution of Shoreham.  
18 What events would you be analyzing incident to that  
19 issue?

20 A I think quite simply it is at least initially  
21 a question we would focus largely on the exposure  
22 question, treating the benefits as the issues you just

1 discussed right now of what the cost, incremental cost,  
2 of decontamination would be in the process.

3           If you load fuel and once you do that what  
4 have you in fact been exposed to, obviously there are  
5 incremental security costs and operating costs of that  
6 nature, and the big one appears to us at this point to  
7 be the decontamination cost if the plant becomes  
8 irradiated because it is producing low power at 5  
9 percent, it's still irradiating the plant and  
10 incrementally what does it do.

11           Have you affected salvage? Was there  
12 something you could have salvaged that you cannot now  
13 salvage? It would be those kinds of things.

14       Q     Have you reached any opinions on that issue  
15 yet?

16       A     No.

17       Q     Do you intend to draw on the previous work you  
18 did before the Marburger Commission in reaching an  
19 opinion on that issue?

20       A     I'm not sure there is a whole lot in the  
21 Marburger Commission work. There is some material there  
22 on decommissioning and decontamination. We are looking

1 MR. SEDKY: I can tell you the answer is no.  
2 I'm not sure why you want to go through this. If you  
3 would like, off the record I'd be happy to discuss with  
4 you which were and which were not and why we want the  
5 information, which might be a lot faster. If there's a  
6 point to made that this witness dcesn't know why a  
7 particular request was made, I don't know what the point  
8 is. I am just trying to move it along.

9 But if you want assistance in trying to  
10 understand what it is we want and why we want it, I will  
11 be happy to either talk to you about it or write to you  
12 about it supplementally.

13 MR. ROLFE: I would prefer to ask the  
14 witness.

15 BY MR. ROLFE: (Resuming)

16 Q Are periodic financial reports such as I  
17 described a moment ago important for the analysis that  
18 you will be performing?

19 A They might be.

20 Q In what respect?

21 A Again, I don't know. I think in the general  
22 respect looking at the general cash situation and the

1 financial situation of LILCO over time, and looking at  
2 the tone of events that could happen over this '83-'84  
3 time period to us is fairly critical in terms of what  
4 happens.

5 The payments to Nine Mile were suspended. The  
6 dividends stopped, all very significant events. And I  
7 think at least from a financial viewpoint the history  
8 leading up to today is crucial and the evaluation of the  
9 reports in terms of explanations, footnotes or whatever  
10 they consider may point up areas we would want to think  
11 about.

12 Q With respect to the cost-benefit analysis?

13 A With respect to the cost-benefit analysis,  
14 with respect to the potential issue of how the position  
15 of cash may change, what the operations look like on a  
16 month-to-month basis, as to what perhaps was projected  
17 against what actually happened to show that there would  
18 be variations in those kinds of things.

19 Q And they would be pertinent to what, LILCO's  
20 financial ability to operate the plant?

21 A Sure.

22 Q Anything else?

1 you identified them as being areas which other people  
2 would find to be critical to safety, then you have a  
3 related issue. But we will not be able to tell whether  
4 that particular cutback in that particular area may or  
5 may not be able to tell whether that is a safety-related  
6 item. We probably would not. I am not a nuclear  
7 engineer.

8 BY MR. ROLFE: (Resuming)

9 Q I'm only talking about your analysis and your  
10 investigation in characterizing those three broad areas.

11 A Our investigation is to attempt to find what  
12 areas these are and what categories they come under. We  
13 will press, as we have in our interrogatories, in  
14 depositions or whatever means we can, to find out what  
15 happens in that scenario. That is one of our intents.

16 Clearly, you cannot take the second step if  
17 you don't take the first. So this is a very crucial  
18 step in terms of our investigating what happens in that  
19 scenario: where will the cutbacks be, where will they  
20 come from, and identify those.

21 Q The purpose of that is to determine whether  
22 there is any safety problem arising from the company's

1 financial condition.

2 A One of the objectives is that.

3 Q What is the other objective?

4 A What is the other? I think we went through  
5 that this morning as well. Whether anybody in a  
6 decisionmaking capacity would recommend or would think  
7 it sane to go forward with a procedure that has  
8 absolutely no slack. It's a situation where when  
9 somebody is flat out, it makes sense to question whether  
10 this is the proper environment under which this kind of  
11 an action should take place.

12 Q That goes to the prudence of whether testing  
13 ought to be begun.

14 A That goes to many issues, and one of the  
15 questions is whether testing ought to be begun, what are  
16 the likely consequences, what are the scenarios, have  
17 they even been thought through, are there contingency  
18 plans. I believe those are all relevant to this  
19 particular application.

20 MR. SEDKY: I assume you're not asking the  
21 witness for a ruling on legal evidentiary issues here.  
22 We may have our own reasons separate from his as to why

1           A       If it's your understanding one was subsumed in  
2     the other, I guess we may be comfortable with them being  
3     identified separately.

4           Q       That's fine. It makes no difference.

5           A       Fine.

6           Q       My question, then, is whether there are --  
7     whether the information that has been requested in the  
8     second discovery request to LILCO in this proceeding  
9     relates to any other areas of inquiry other than those  
10    you just listed for me.

11           MR. SEDKY: And those he discussed this  
12    morning. I mean I don't know how you can have it both  
13    ways. He said he couldn't remember everything he  
14    testified to this morning.

15           (Pause.)

16           MR. ROLFE: Let him answer my question.

17           THE WITNESS: I think, to be as responsive as  
18    I can, these issues go to everything we intend to  
19    respond to. The two areas of what we're going to  
20    respond to is the list I just gave you, the areas of  
21    your examination this morning.

22           I would only add to that that it is not at all

1 unusual, and we intend to make every effort to  
 2 scrutinize these documents to see whether it gives rise  
 3 to further evaluations. We have asked for a lot of  
 4 correspondence between officers of the company, which we  
 5 think is relevant. They may, in fact, give rise to  
 6 further uncertainties. It may be a cash-related issue.  
 7 It may not be. But if something is contained within  
 8 these documents that relate to the uncertainty of the  
 9 process and relate to the three broad issues we spoke  
 10 about -- economic, financial or public interest -- we  
 11 intend to raise them.

12           Is there a possibility that there is  
 13 correspondence within the company indicating certain  
 14 drawbacks, safety related, financial related? I don't  
 15 know. Is there documentation within the company that  
 16 indicates that the low power licensing is so critical to  
 17 its financial attractiveness that it ought to be pressed  
 18 ahead regardless of any other fact? I don't know what  
 19 this is going to say, but we intend to get these  
 20 documents, examine them and see if any ancillary related  
 21 issues come up. I think you would expect us to raise  
 22 them, and we would.

1           A     I have not formed any conclusions whether they  
2     are suitable or are not suitable. And as I said, I may  
3     not have related the two also. I have been reading  
4     generally documents or literature regarding them, and I  
5     may not have come to any particular conclusion that they  
6     are really suitable for the purpose for which they are  
7     intended.

8           Q     When do you intend to reach those conclusions,  
9     or do you?

10          A     I definitely do. If I'm asked to testify, I  
11     will come to some sort of conclusion. As you realize,  
12     one has to do a good study of any particular engine.  
13     There are a lot of components in a diesel engine. One  
14     has to relate to different experiences, as you  
15     mentioned, you know, in the industry to see how it's  
16     been functioning in other facilities, have they been  
17     used for such purposes elsewhere, have they been used  
18     for a nuclear facility elsewhere. You know, one has to  
19     consider a lot of things before one can say yes, this  
20     engine meets the criteria for what it is intended. And  
21     I have not really gone to any depth of that sort.

22          Q     I take it that you have not done that

1 Q Is there anything else you intend to do?

2 A I think that would be the major thrust of the  
3 work. I can't offhand think of anything else.

4 Q As of today have you reached any conclusions  
5 or formed any opinions with respect to the EMD diesels  
6 at Shoreham or the method in which LILCO intends to use  
7 them?

8 A I have not reached any conclusion. I may  
9 have, if I can use the word "concerns," about the  
10 certain way I saw things were up there when I was at the  
11 site. But again, as I said, I would not reach any  
12 conclusions without going into the drawings, the  
13 documents which I have already requested.

14 Q Tell me what those concerns are.

15 MR. ROLFE: Let's take a five-minute break.

16 (Recess.)

17 MR. LANPHER: Can you repeat the question?

18 BY MR. ROLFE: (Resuming)

19 Q Mr. Bakshi, let me repeat the question that I  
20 posed before we took the break.

21 You advised that you had some preliminary  
22 concerns as a result of your site visit. Can you list

1           A     Could be industrial standards, international  
2 regulations for diesel engines. Yes, I am aware of  
3 regulations.

4           Q     Putting aside the NRC's regulations governing  
5 onsite power sources for a minute, are there any codes  
6 or standards applicable to the EMD generators at  
7 Shoreham with which those diesel generators do not  
8 comply?

9           MR. LANPHER: Can I have that question read  
10 back or repeated?

11          MR. ROLFE: I will try to repeat it myself if  
12 you want.

13          MR. LANPHER: Either way.

14          MR. ROLFE: I will do that and save her the  
15 trouble.

16          MR. LANPHER: You had said leaving aside.

17          BY MR. ROLFE: (Resuming)

18          Q     Leaving aside for a minute the NRC's  
19 regulations, are there any other codes or standards  
20 applicable to the EMD diesels at Shoreham with which  
21 they do not comply?

22          A     I do not know.

1           Q     Do you know what the industrywide experience  
2     has been with respect to reliability of diesel  
3     generators used at nuclear power plants?

4           A     At nuclear power plants is only what I have  
5     gained experience through dealing with Suffolk County  
6     and what I have read generally.

7           Q     Have you read or are you aware of any figure  
8     concerning the availability or reliability of those  
9     machines?

10          A     I don't recollect any figure offhand.

11          Q     Near the beginning of your deposition you gave  
12     me a list of matters that you would want to consider, I  
13     guess, in looking into the reliability of these diesels,  
14     any diesels. One of them, for example, was its ability  
15     to reach speed. Do you have any opinions with respect  
16     to the ability of these FWD diesels to reach their  
17     required speed?

18          A     I have no opinions as yet.

19          Q     Do you intend to make any investigation with  
20     respect to their ability to do that?

21          A     I probably will go through most of the lists  
22     which I gave you. I have not attempted it yet to do any

1 indicated about the past.

2 Q How fast do these machines need to reach their  
3 speed?

4 A I don't know.

5 Q How will you find that out?

6 A By asking what I've asked in the discovery, or  
7 if I haven't, I probably will ask what the -- what these  
8 were originally designed for, go through all the design  
9 criteria when they were initially manufactured. These  
10 generators seem to have a lot of places mentioned. They  
11 have been repowered and rebuilt. I'd like to see all  
12 those documents, why they were repowered, why they were  
13 rebuilt, and see whether they've had any increasing in  
14 rating, and why, and what are the reasons. I'd like to  
15 see all that before I can make any decision.

16 Q Do you intend to undertake any investigation  
17 with respect to the ability of these machines to reach  
18 speed other than through a review of the documents which  
19 LILCO will produce?

20 A I'm not aware of any right now.

21 Q Do you have any opinion with respect to the  
22 ability of these four EMD diesels at Shoreham to take

1 load?

2 A I have no opinion.

3 Q Do you intend to investigate that factor?

4 A As I said, I will investigate all those  
5 factors, and without going through each one, what steps  
6 exactly I will take would be just speculation. I would  
7 not know what I would be exactly doing, but I generally  
8 would draw up a list when I start that process, or with  
9 Mr. Eley, confer with him and say these are the factors  
10 we're going to look at. We may not even look at all the  
11 factors. We may look at some of the factors, depending  
12 again on the time, as I said, and then formulate a plan,  
13 this is what we're going to do, do we need anything  
14 else, and things of that nature.

15 Q But you have not formulated that plan now?

16 A No.

17 Q Other than the time available to you, how will  
18 you make distinctions among these various factors that  
19 you listed for me as to which you would investigate and  
20 which you might not?

21 A There's maybe some that are more important  
22 than others from operating experience. I would go about

1 doing that and leave the rest if I don't have time.

2 Q Which of these might be more important than  
3 others?

4 A I don't recall what order they are. You know,  
5 five, six, seven items of the ten items that I referred  
6 to.

7 Q Let me go back to that question, then; that  
8 is, what types of investigation might you undertake to  
9 determine the ability of these machines to take load?

10 A Review the operating history.

11 Q Anything other than review of the operating  
12 history?

13 A Nothing at this point.

14 Q Have you undertaken -- strike that.

15 Have you reached any conclusions or opinions  
16 with respect to the reliability of any of the components  
17 of the EMD diesels at Shoreham?

18 A None whatsoever.

19 Q Do you intend to investigate that factor?

20 A Might.

21 Q If you do, what sort of investigation will you  
22 undertake?

1 Q That's just speculation on your part?

2 A It's not speculation. I know a lot I can give  
3 you names of them, but I don't know the exact amount --  
4 does this firm do it, does he do it or not. But  
5 generally, yes.

6 Q Do you have any opinion as to whether these  
7 diesels at Shoreham, the EMD diesels, are, I believe  
8 your words were safe enough for what they were intended  
9 to be used for?

10 A No.

11 Q You don't know?

12 A No, I don't. I haven't formulated any opinion.

13 Q What will you need, if anything, to formulate  
14 an opinion about that?

15 A It includes all the concerns, plus the factors  
16 that I mentioned there.

17 Q How will you do that, though?

18 A After I have considered all of these, if it  
19 meets these requirements, then I will say yes, it is  
20 safe, relatively.

21 Q When you say meets these requirements, are you  
22 referring to requirements that you have imposed in your

1 investigation, or are you referring to any objective set  
2 of requirements?

3 A The six requirements which I mentioned.

4 Q The six concerns?

5 A The six concerns primarily, plus these other  
6 factors. Go through the design components and this  
7 other one you talked about.

8 Q One of the other things you mentioned earlier  
9 was the lube oil capacity, I believe, and if I'm wrong,  
10 correct me. Is that anything different?

11 A That's a concern.

12 Q Lube oil consumption we were discussing?

13 A Yes.

14 Q Do you have any opinion as to whether the  
15 stress levels on the four EMD diesels at Shoreham pose  
16 any problem?

17 A Stress levels on what?

18 Q On any components in the machines.

19 A I haven't done any design calculations. I  
20 don't know.

21 Q Do you intend to do any design calculations?

22 A I don't know. If I have the time, I may or

1 manufacturers in America purport to comply with ABS or  
2 Lloyd's standards for their stationary diesels?

3 A I have not studied that in depth.

4 Q So you don't know?

5 A Not offhand.

6 Q Are you familiar with the surveillance testing  
7 proposed by LILCC for these EMDs at Shoreham?

8 A No.

9 Q Do you have any opinion as to the frequency  
10 with which surveillance testing ought to be undertaken  
11 to ensure some indication of reliability?

12 A Some indication of reliability?

13 Q Satisfactory indication of reliability.

14 A Not yet.

15 Q Well, how will you arrive at that if you don't  
16 have any opinion now?

17 A Well, if it meets all the objectives which I  
18 have set out for it, I will see what the engine  
19 manufacturer says, what scheduled maintenance must be  
20 done, and from that I maybe will compile a list of what  
21 could further be done to enhance the reliability of the  
22 engines.

1 logs. I need to read more in order to determine.

2 Q Based on what you have read to date, do you  
3 have any opinion as to the reliability of the machines  
4 based on their operating history?

5 A What?

6 Q Based on what you have reviewed to date, do  
7 you have any opinion as to the reliability of those four  
8 EMD diesels based on their operating history?

9 A Based on what I have read until today, there's  
10 a need to know more, and I've not formulated an opinion.

11 Q You mentioned earlier that how the diesels are  
12 housed may be a factor in your evaluation of their  
13 reliability, is that right?

14 A To a certain extent, yes.

15 Q Can you explain that to me, how they would  
16 affect your opinion?

17 A Well, it's the same thing basically. The way  
18 the TDIs are housed, you would have fixed engines rather  
19 than, you know -- you would have a better source of fuel  
20 oil, better firefighting facilities. All the concerns  
21 which you have mentioned, the majority of them would be  
22 included, plus there may be better means of overhauling

1           A     Components and things like that, yes, but not  
2 structural if you call it a construction of things, no.

3           Q     Do you intend to express any opinion with  
4 respect to the capability of the GM EMD diesels at  
5 Shoreham to power the necessary emergency loads to  
6 mitigate any accident which might be encountered during  
7 low power testing?

8           A     Once again.

9           Q     Do you intend to express any opinion with  
10 respect to the capability of these EMD diesels? And by  
11 capability I mean to distinguish that from the  
12 reliability of the machines in operation, but whether,  
13 assuming that the machines are reliable and will operate  
14 as they are intended, whether they are capable of  
15 powering the emergency loads that might be necessary to  
16 mitigate an accident at Shoreham.

17          A     I don't know.

18               MR. LANPHER: I belatedly will object to the  
19 question because I still don't understand it. It was  
20 very confusing.

21               MR. ROLFE: I think he did.

22               MR. LANPHER: I don't understand what you mean

1 formed any opinions or conclusions with respect to the  
2 reliability of the EMD diesels at Shoreham or a  
3 comparison of those diesels with a qualified nuclear  
4 diesel?

5 A As I have said before, we have not been able  
6 to get all of the data that we need in order to make  
7 that comparison. So no, we have not made any formal  
8 conclusions on that at this stage.

9 Q Tell me, if you will, what additional work you  
10 intend to do in your investigation?

11 A I think Mr. Bakshi in his deposition has  
12 really covered every area that we are going to look at  
13 that I can recollect also. There is some terminology  
14 that is used that we need some definition on as well,  
15 that we are a little unsure of, that we would like to --  
16 we have a couple of other discovery requests with regard  
17 to that.

18 Q Can you tell me what terminology it is that  
19 you are having difficulty with?

20 A One of them is "repower". It is not a term we  
21 use in the U.K., so I would like that defined a little  
22 clearer. I'm not sure whether that means a major

1 must not only consider the unavailability; you must  
2 consider that in conjunction with an effective running  
3 period.

4 Q Well, let's get to that. Do you have any  
5 opinion, based on the maintenance or operating records  
6 that you have seen, concerning the running reliability  
of these machines?

8 A No, I have not.

9 Q You heard Mr. Bakshi refer to some roughly  
10 calculated percentages of these units' unavailability in  
11 the past?

12 A Yes.

13 Q Do you agree with me that it is important to  
14 differentiate between unavailability due to a planned  
15 outage for maintenance, for example, and unavailability  
16 due to mechanical failures or breakdowns or the like?

17 A Yes, I agree, there's a difference.

18 Q Have you seen any records reflecting the  
19 unavailability of these machines due to mechanical  
20 failures or breakdowns?

21 A There are some documents to that effect, but  
22 with regard to the actual figures on availability I

1 don't recollect them offhand.

2 Q You don't have any opinions on that?

3 A I don't have any opinions on that right now.

4 Q When we started down this track I had  
5 originally asked you whether there was any accepted  
6 standard in the industry for judging the reliability of  
7 diesel generators, and I don't believe you ever answered  
8 the question. Is there?

9 A Standard on reliability? There may be, but  
10 I'm not aware of it.

11 MR. ROLFE: Let's take a ten-minute break.

12 (Recess.)

13 BY MR. ROLFE: (Resuming)

14 Q Mr. Eley, do you have any expertise in the  
15 area of seismology?

16 A No.

17 Q Do you intend to do any work or express any  
18 opinions with respect to the ability of these EMD  
19 diesels to withstand a seismic event?

20 A No, I do not.

21 Q Do you intend to perform any investigation or  
22 express any opinion with respect to the operating

1 that or not?

2 A Well, it may not be performed by me. I'm  
3 quite sure it will be performed by Mr. Minor.

4 Q Do you intend to review all of the additional  
5 documents that are being produced or that will or may be  
6 produced by LILCO in this proceeding, or do you intend  
7 to rely on Mr. Bakshi's review of those documents?

8 MR. LANPHER: You mean all the diesel-related  
9 ones?

10 MR. ROLFE: Yes, I'm sorry.

11 THE WITNESS: I intend to review some of those  
12 documents. Mr. Bakshi will do some independent review  
13 of some documents. And there is a possibility that we  
14 may extend the people that are being utilized on this  
15 case because of the timing involved.

16 With regard to your question of whether I will  
17 review all of the documents, I would say possibly not,  
18 because I am concentrating on some TDI work, as you  
19 know.

20 BY MR. ROLFE: (Resuming)

21 Q Have you performed any work to date or reached  
22 any conclusions with respect to the ability of the EMD

1     diesels to reach the necessary speed?

2           A     I have not performed any of those  
3     calculations, no.

4           Q     Do you know what you intend to do with respect  
5     to reaching any conclusions on that subject?

6           A     I do believe there's a specific requirement  
7     for engines within the nuclear industry to reach the  
8     rated speed at under ten seconds. There is a  
9     possibility that we will look at that issue. Yes, it's  
10    a possibility.

11          Q     Do you know why that's a requirement for  
12    nuclear diesels?

13          A     I do not.

14          Q     Do you know, for a plant operating at full  
15    power, how quickly it is necessary to have AC power in  
16    the event of a LOCA, for example?

17          A     I do not.

18          Q     Do you have any knowledge as to whether it is  
19    necessary in a plant operating at five percent power for  
20    a diesel generator to reach its rated speed within ten  
21    seconds?

22          A     Would you repeat that question?

1           A       The only limitations I have read of is, I  
2 believe it was if my memory serves me correctly, a  
3 recommendation by the engine builder that the engine  
4 should not be run under a specific power rating. The  
5 reasons for this, I don't know why.

6           Q       Do you have any -- have you done any  
7 investigation with respect to its ability to pick up the  
8 load that it will see in the event of an emergency? And  
9 by "it" I mean the EMD diesels at Shoreham.

10          A       I have not done that yet, no.

11          Q       Do you intend to do that?

12          A       This I think would be possibly more in Mr.  
13 Mincer's area.

14          Q       Meaning you do not intend to investigate that  
15 area?

16          A       It would not be one of my priorities, no. I  
17 assume you mean the response from the generator with  
18 regard to picking up that load; is that correct?

19          Q       Yes.

20                   Do you have an opinions with respect to the  
21 reliability of any particular components of the EMD  
22 diesels at Shoreham?

1 A Not at this stage.

2 Q Do you intend to conduct any investigation  
3 into that subject?

4 A I believe Mr. Bakshi mentioned the problem  
5 area he felt with regard to the turbocharger drive  
6 arrangements. We do not know what they are. We'd like  
7 to have a look at those, so it will be necessary for us  
8 to get some blueprints, which we've asked for in our  
9 latest discovery. And that is one of the areas we will  
10 be looking at, yes.

11 Q Other than the turbocharger, are there any  
12 other components which you will specifically be  
13 investigating on the EMD diesels at Shoreham?

14 A I do believe there has been some cylinder  
15 heads cracking and that's probably another component  
16 that we will look at. There's a lot of references in  
17 the documents that we have already read with regard to  
18 rust in the cylinder liners, so this is an area that we  
19 will look at.

20 I don't recollect offhand whether there were  
21 any other components that were being considered at this  
22 time. That's not to say that, given more documents and

1 Q Have you reached any opinions with respect to  
2 the battery starting unit at Shoreham on the EPD's?

3 A I have not reached any opinions on that at  
4 all, no.

5 Q Is anyone else at Ocean Fleets currently  
6 working on the Shoreham project besides you and Mr.  
7 Bakshi?

8 A There is not at the moment, but there is a  
9 possibility that I might change that in the near  
10 future.

11 Q Do you know now who you might enlist?

12 A I do not, but I am seeking additional  
13 assistance in this matter.

14 Q We spoke a few minutes ago about the necessity  
15 in your opinion for looking at the running reliability  
16 of diesels in addition to their starting reliability in  
17 order to reach an overall reliability judgment.

18 A Yes.

19 Q Is it as important to know about the running  
20 reliability if the machine is only required to run at  
21 most for 24 hours at a clip?

22 A I think so, yes.

1 calls didn't deal with the substance of the analysis?

2 A That is correct.

3 Q And dealt with the arrangements for performing  
4 the work?

5 A That is correct.

6 Q Doctor, throughout the deposition I am going  
7 to be asking a number of questions about the analysis.  
8 To the extent that particular portions of the work are  
9 being performed by Dr. Roesset, I would appreciate it if  
10 you would indicate that he is performing those  
11 particular portions of the analysis. I think that will  
12 save going back through the whole set of questions  
13 twice, asking what you are doing and asking what he is  
14 doing.

15 A But as I indicated, we haven't even decided  
16 yet what exactly we will perform, so therefore I don't  
17 know yet what I will do and what he will do.

18 Q Fine.

19 Now, in your initial phone conversation with  
20 Mr. Hubbard on April 9, what did he ask you to do?

21 A Basically asked if I were available to perform  
22 this type of seismic analysis of various structures or

1 are getting this feeling for components?

2 A Well, actually, the physical components  
3 themselves, be it buildings or components or  
4 structures.

5 Q So just to see what you were dealing with?

6 A Yes, exactly.

7 Q As a result of that visit, did you reach any  
8 conclusions or form any opinions?

9 A No final opinions.

10 Q Did you have any preliminary impressions or  
11 conclusions that you reached?

12 A My preliminary opinions or impressions were  
13 that some of the equipment that we did visit has been  
14 put up more for temporary purposes, and I did not get  
15 the impression as if it had been engineered for seismic  
16 reliable behavior.

17 Q Do you recall what equipment that was?

18 A As an example, the control panel cubicle for  
19 the EMD generators, it was just placed on temporary  
20 timber, and no engineer would design something like that  
21 for permanent use.

22 Q Okay.

1 what the stresses and deformations due to seismic loads  
2 will do to the operational characteristics of an  
3 electrical system.

4 Q Have you or do you intend to develop a list of  
5 the major electrical components for the EMD diesels?

6 A I will be looking only into the diesel  
7 generator itself, whether it will be -- whether the fuel  
8 line might have a probability of rupturing during an  
9 earthquake, or if the control building might slide off  
10 its foundation. This is the type of question I will  
11 answer, and I will not go into any electrical aspects,  
12 mechanical aspects of the equipment.

13 Q In your proposal in Phase 2, you indicated  
14 four general areas that you would be looking at, A, B,  
15 C, and D, and we eliminated B, or part of B, the  
16 Holtsville gas turbines.

17 Starting with A, on-site power source  
18 consisting of a gas turbine, transformers, the switch  
19 yard, and the four mobile diesel generators and their  
20 interconnecting parts, have you reached any conclusions  
21 or opinions with respect to any of those pieces of  
22 equipment?

1 A No, not yet.

2 Q Have you reached any preliminary opinions or  
3 conclusions -- and that is other than the ones you have  
4 told me about -- that you have reached as part of your  
5 site visit?

6 A No, not yet.

7 MR. LANPHER: Can I get a clarification? He  
8 also prior to the break described things that as a  
9 result of his visit he decided he wanted to look at  
10 further. That is not a conclusion or an opinion except  
11 in the sense that he identified things that he wanted to  
12 look at.

13 I just want the record to be clear that to  
14 that extent he made some judgments, at least.

15 MR. EARLEY: Well, he said he had some  
16 impressions.

17 BY MR. EARLEY: (Resuming)

18 Q And beyond those impressions, from the site  
19 visit, you don't have any other conclusions, impressions  
20 or concerns?

21 A No.

22 Q With respect to the transmission line systems

1 connecting the on-site equipment to the local  
2 substations, do you have any opinions, impressions or  
3 concerns that you have identified other than those that  
4 you listed as a result of your site visit?

5 A I have no opinions at this point yet.

6 Q No preliminary judgments?

7 A No preliminary judgments, no.

8 Q With respect to substation components used to  
9 switch or control incoming power to the site, have you  
10 reached any opinions, final or preliminary, or  
11 impressions or concerns with respect to those items?

12 A No, I have not.

13 Q You also indicated that your work would cover  
14 supporting equipment, and you list fuel oil storage  
15 tanks for the diesels and turbines as an example.

16 What other supporting equipment besides the  
17 fuel oil storage tanks will you look at?

18 A I don't recall what you had named these  
19 various pieces. We have taken pictures of some of the  
20 physical links between the various electrical  
21 components, and I would be able to identify them on the  
22 pictures. I don't remember the names. But basically we

1 are talking about transformers, circuit breakers, maybe  
2 some transmission towers.

3 Q So under supporting equipment, you will look  
4 at the physical links which you describe as electrical  
5 physical connections.

6 A Correct.

7 Q And the fuel oil storage tanks.

8 A And the pipelines, yes.

9 Q The fuel pipelines?

10 A Yes, from the tank to the diesels.

11 Q Would anything else be covered by the category  
12 of supporting equipment?

13 A Pardon me?

14 Q Would anything else be covered under this  
15 designation supporting equipment?

16 A I cannot recall offhand. I don't think so.  
17 That pretty much describes all of the equipment.

18 Q With respect to the fuel oil storage tanks,  
19 have you reached any preliminary or final conclusions  
20 about any concerns you can identify?

21 A No.

22 Q And with respect to the physical electrical

1 connections that you have just referred to, have you  
2 reached any preliminary final opinions, conclusions, or  
3 have any concerns in that area?

4 A No, I have not.

5 Q you indicate that your analyses will consider  
6 the effects of the SSE on the ability of the equipment  
7 to function.

8 Could you describe for me how you will assess  
9 the ability of the equipment to function as a result of  
10 the SSE?

11 A I will give you a very simple example. If a  
12 transformer is found to topple over as a result of an  
13 earthquake, I will say it will not be very difficult to  
14 show that it cannot perform its intended functions.  
15 This is a crass example.

16 More subtle examples, there may be certain  
17 displacements or vibrational characteristics that can  
18 have electrical consequences, and in order to assess the  
19 reliability, I will need the expertise of an electrical  
20 engineer to interpret the consequences of certain  
21 responses.

22 Q And have you identified an electrical engineer

1 A By a dynamic analysis.

2 Q And that dynamic analysis requires you to  
3 develop a mathematical model of the tower?

4 A Yes.

5 Q What other inputs go into the mathematical  
6 model?

7 A I have to know the properties of these  
8 insulators.

9 Q Does that go into the model itself?

10 A Yes.

11 Q Or is that used in determining whether the  
12 insulators will fail?

13 A No. It will be part of the model.

14 Q Have you performed any part of this analysis  
15 yet?

16 A No, I have not.

17 Q Can we go to the next item?

18 A I believe this is it.

19 Q Doctor, in going through this list of  
20 pictures, and in our previous discussions you have  
21 described for me a number of components that you intend  
22 to analyze and the type of analysis you that intend to

1 perform. Right now are you aware of any other  
2 components or any analysis that you intend to perform  
3 that you have not mentioned here today?

4 A No.

5 Q With respect to any of these items of  
6 analyses, I take it that you have not formed any  
7 opinions, either preliminary or final?

8 A No, I have not.

9 Q Have you developed any outline, either in  
10 writing or in your mind and your thought process,  
11 concerning the types of opinions you may present in the  
12 hearings in this case?

13 A I didn't quite get that question.

14 Q Have you developed, either in writing or in  
15 your mind thought through the types of opinions or an  
16 outline of the kinds of opinions you may present at  
17 trial in this case?

18 A I have no opinions yet, so I have not  
19 expressed it either in writing or in my mind yet.

20 Q When do you intend to reach any opinions or  
21 judgments or conclusions with respect to the work you're  
22 performing?

1 A After I have performed these analyses.

2 Q You have indicated you have not performed any  
3 of these analyses today?

4 A That's correct.

5 Q When do you intend to start performing these  
6 analyses?

7 A As soon as I get the technical data that we  
8 have requested through discovery.

9 Q And have you developed a schedule for  
10 performing these analyses following the receipt of this  
11 information?

12 A What do you mean by schedule?

13 Q How long do you think it will take to perform  
14 these analyses following --

15 A In my original estimate here we predicted  
16 about 24 days for phase one and two -- no, phase one is  
17 completed. So I still stick to approximately 20 man  
18 days, both for me and for Dr. Roesset. That's the best  
19 estimate that I have available right now.

20 Q So, in essence, what you're saying here today  
21 is you have not accomplished anything yet in phase two?

22 A The site visit here is listed as phase two.

1           Q     You mentioned that you would look at how the  
2     20 megawatt gas turbine connected into the bus. What is  
3     the significance of that piece of information for your  
4     analysis?

5           A     Various failure modes. Anything that could  
6     affect the routing of that. Any contributions to  
7     unavailability. We would be going from the starting of  
8     it throughout the full connection period.

9           Q     So you would look at all the components  
10    between the gas turbine and the bus and check their  
11    reliability?

12          A     Or availability, which encompasses maintenance  
13    outage as well.

14          Q     And do you now -- Have you done any work yet  
15    to determine what potential failure mechanisms there are  
16    in that connection?

17          A     No, I have not.

18          Q     You also mentioned the underground portion of  
19    the line, and you noted that it was near the control  
20    building. What is the significance of that?

21          A     Nothing particularly. All we are going to do  
22    is just follow the routing of it where it ties into the

1 than your review of the reactor safety study?

2 A No, I did not.

3 Q Now, in your position as a systems safety  
4 supervisor at McDonnell Douglas, did you participate or  
5 perform a probabilistic risk assessment or other  
6 assessment of a commercial nuclear power plant?

7 A I did not.

8 Q Since you've been president of SERA, or since  
9 you've been with SERA Energy Risk Assessment, you've  
10 indicated you have reviewed some probabilistic risk  
11 assessments for commercial nuclear power plants. Have  
12 you been responsible for performing a probabilistic risk  
13 assessment for any plant?

14 A I have not.

15 Q In the course of the review you have conducted  
16 so far, with respect to LILCO's application for a low  
17 power license, have you reached any opinions, either  
18 final or preliminary, with respect to any aspect of your  
19 review?

20 A I have reached no opinions regarding the  
21 driving motivation for the 10 megawatt or the 20  
22 megawatt gas turbine.

1 I have general impressions -- thought that  
2 particularly based on a site visit, that LILCO has not,  
3 in my opinion, dotted all the i's and crossed all the  
4 t's regarding various areas where the low power  
5 configuration could have been made safer.

6 I also felt, the example about the diesel  
7 generators on railroad ties, there seemed to be a  
8 certain casualness and slap-dash perspective to the  
9 whole diesel generator assembly, certainly not something  
10 I can quantify from that.

11 Q Any other general impressions or conclusions  
12 in any other part of your analysis?

13 A No.

14 Q Now, with respect to your general impression  
15 that LILCO has not dotted all the i's and crossed all  
16 the t's, can you tell me precisely what you are  
17 referring to there?

18 A Well, I was thinking in terms of the manner in  
19 which the four units were operated. Not having done the  
20 quantitative analysis, I can't say what the actual  
21 results will be, but it strikes me that if you wanted to  
22 generate a whole string of dependencies and completely

1 as that document is concerned.

2 Q Do you know whether they have reached any  
3 conclusive results concerning installing black start gas  
4 turbines as a result of the review of any or all  
5 documents?

6 A No.

7 Q Mr. El-Gasseir, have you formed any opinions  
8 or reached any conclusions with respect to the low power  
9 license application that you are reviewing?

10 A No.

11 Q Have you been asked to form any opinions or  
12 conclusions?

13 A No.

14 Q Do you expect to testify as a witness in this  
15 proceeding and offer any opinions or conclusions?

16 A No. I don't expect that. That has never been  
17 indicated to me.

18 MR. EARLEY: Why don't we take about a  
19 five-minute break?

20 (Recess.)

21 BY MR. EARLEY: (Resuming)

22 Q We just have one more question. We can always

1 but I did follow up with them and attempt to determine  
2 their availability and schedules, to put together a plan  
3 for what we might do.

4 Q You said in general MHB was acting as a  
5 coordinating consultant. Are there any areas in which  
6 MHB intends to develop its own testimony and express  
7 opinions incident to this low power proceeding?

8 A There are plans at this time to have some  
9 testimony sponsored by MHB.

10 Q And what would be the subject of that  
11 testimony?

12 A The plan at this time is not finalized, but  
13 our thinking is that MHB will participate in the SERA  
14 testimony, and we are giving some thought to the need  
15 for participation with the seismic structural people's  
16 testimony, Christian Meyer and Jose Rossette.

17 There is also some possible testimony in the  
18 area of public interest.

19 Q With respect to possible participation in that  
20 SERA testimony, can you tell me how MHB would contribute  
21 to that?

22 A It is not defined at this time. In general,

1           A     It is, yes.

2           Q     Do you know whether SERA has reached any  
3 conclusions in its analysis?

4           A     At this time, to the best of my knowledge they  
5 have not. They are still in the preliminary phases and,  
6 even though the schedule has been extended somewhat, it  
7 is still not long enough to have reached any conclusions  
8 at this time. It's going to be right down to the wire,  
9 I'm afraid.

10          Q     Do you know yet what the extent of your  
11 participation in SERA's testimony will be?

12          A     Not exactly, no. I know that I will be  
13 involved in the preparation of it and will be working  
14 with them on a fairly regular basis until the  
15 culmination of the testimony.

16          Q     Have you fed information to SERA?

17          A     I have been giving them information, since the  
18 first day they were contacted, about what the  
19 supplemental motion is, what the motions for summary  
20 disposition are, and what information we have in the PRA  
21 they may want to use, and that sort of thing. We've  
22 been repeating that constantly.

1 completing the major goal, which was to have completed  
2 testimony according to the schedule set forth.

3 Q Why did they ever think it would be necessary  
4 to look at something beyond the design basis events?

5 A Well, to use another acronym, SARAs, severe  
6 accident risk assessments, have been done on various  
7 plants, and they tend to go well beyond design basis  
8 events. To the extent they were knowledgeable about  
9 those having been done on other plants, they thought it  
10 might be something that was being considered here, too.

11 Q Do you know when SERA intends to have its  
12 final opinions?

13 A My goal is to make sure they have their final  
14 opinions by testimony due date, and I think it's going  
15 to be a tight schedule to make that.

16 Q You are aware, I take it, of Judge Miller's  
17 order last Friday that all discovery responses,  
18 including deposition testimony, be supplemented?

19 A I have not seen that. Somebody mentioned that  
20 there is a supplemental order. I guess that's what  
21 they're calling the supplement.

22 Q It's not in writing yet.

1 A That's a buzz name, but I have forgotten.

2 Q Are you aware of the general requirement  
3 that's been imposed?

4 A Yes, I am aware that there is. I thought that  
5 was with regard to discovery, but I guess it's with  
6 regard to discovery depositions, too. I don't know what  
7 the requirements are.

8 Q You might find it fruitful to consult with  
9 counsel about that and determine what it is.

10 All right, you said that MHB has also given  
11 thought to the need for its participation with respect  
12 to the seismic testimony. I take it that would be the  
13 testimony of Professor Meyer; is that correct?

14 A Meyer and Rossette, if Rossette ultimately  
15 contributes there. His schedule is a little hard to tie  
16 down.

17 Q Do you know at this point whether Professor  
18 Rossette will be a witness in this proceeding?

19 A I personally am not convinced he is going to  
20 be, but I think there is a high likelihood he will be.

21 Q When will that decision be made?

22 A I don't know. That's out of my hands.

1           Q     Describe for me the extent to which MHB  
2 intends to participate in the seismic testimony.

3           A     Well, as you may or may not be aware, their  
4 effort is to analyze the equipment involved in the  
5 onsite and offsite configurations proposed by LILCO. By  
6 that I mean the TDI's and the alternatives, as we refer  
7 to them.

8                     Their analysis will attempt to determine what  
9 equipment is likely to be impacted by an earthquake up  
10 to .2 g's. Once they make a seismic structural  
11 determination as to what will be impacted, there is a  
12 question which remains as to what ultimate effect that  
13 would have on the electrical supply reliability, and to  
14 that extent I may be involved or others at MHB, probably  
15 me, in helping supply that part of the testimony and  
16 that assessment as to the impact on the electrical  
17 supply.

18           Q     Do you know what the division of labor or  
19 responsibility is between Professors Meyer and  
20 Rossette?

21           A     Well, it's hard to define exactly, but  
22 Christian Meyer is taking the lead in this effort. Jose

1 County and there's been some correspondence -- I don't  
2 need to review that -- concerning whether Mr. Rossette  
3 will be a witness. And again I request that, once that  
4 decision be made, that LILCO be advised at the earliest  
5 possible time, so he can be deposed.

6 And it will be LILCO's position, so there will  
7 not be any surprises, that if he is not deposed before  
8 the end of discovery, LILCO will oppose any testimony.

9 MR. BIRKENHEIER: Let me say, Suffolk County  
10 has not determined this yet, whether Dr. Rossette will  
11 appear and have sponsored testimony in this proceeding.  
12 That has not changed since the last time that  
13 representation was made to you.

14 BY MR. ROLFE: (Resuming)

15 Q Mr. Minor, do you know whether Professor Meyer  
16 has reached any conclusions yet?

17 A My last conversations with Christian, which  
18 date back several days now, but at that point he had  
19 not.

20 Q Has Professor Rossette reached any conclusions  
21 of which you are aware?

22 A Professor Rossette was making some general

1 opinions with respect to the seismic resistance or  
2 capabilities of any of the components of LILCO's AC  
3 power system as proposed for the low power testing?

4 A I don't know how to answer your question,  
5 because it had some double negatives. I do not propose  
6 to —

7 Q Let me rephrase it. Do you intend to express  
8 any opinion with respect to the seismic resistance or  
9 capabilities of any components of the AC power  
10 components?

11 A I believe you are asking me if I will do  
12 seismic analysis and no, that is not my intent. I  
13 intend to use the seismic analysis done by others and  
14 impact the results of that.

15 Q I also believe you told me that at this time  
16 you are not aware of what the results in the seismic  
17 analysis are?

18 A I am not, because I don't believe there are  
19 any.

20 Q The third area you identified as being an area  
21 of possible participation by MHB is the public interest  
22 area. Can you describe for me what MHB's participation

1 probability of restoring power with the TDI diesels was  
2 91.3 percent and the probability of restoring power in  
3 the proposed low-power testing configuration was 91.1  
4 percent.

5 Does the county intend to evaluate those  
6 results in terms of taking other than just a strictly  
7 numerical comparison?

8 A You're getting beyond the state of the  
9 county's testimony development at this point. I don't  
10 think we have really formulated a position on something  
11 like that.

12 Q Have you had any discussions or correspondence  
13 recently with Mr. Ealey or Mr. Bagshi about their  
14 consulting work concerning the EMD diesels?

15 A Yes, I've talked to them a couple of times,  
16 largely trying to tie down schedules of availability,  
17 tie down their involvement, and also to coordinate with  
18 the efforts leading to the site visit.

19 Q When was the last time you had any  
20 communications with them?

21 A I had a chance to talk to them when they were  
22 in town. The weeks are slipping by. I don't know how

1 long ago. It when they were deposed. So that was  
2 last time.

3 Q Do you know whether they have reached any  
4 conclusions with respect to the EMD diesels?

5 A I don't believe they've reached any firm  
6 conclusions at this time. To my knowledge, they  
7 haven't. They may have, because it's been a week or so  
8 since I've talked to them, but I don't believe there are  
9 any at this time.

10 Q Is MHB also coordinating the involvement of  
11 Messrs. Madden and Diermeyer in this low power  
12 proceeding?

13 A No, we're not.

14 Q Do you have any knowledge of any opinions they  
15 may intend to express?

16 A I've done nothing more than shake their hands  
17 when they were coming into Kirkpatrick, Lockhart the  
18 other day, and I was leaving. I have no idea what their  
19 opinions are.

20 Q Are there any other MHR people who you foresee  
21 might be witnesses in this low power proceeding, other  
22 than yourself, Mr. Hubbard, or Mr. Bridenbaugh?