

ORIGINAL

RELATED CORRESPONDENCE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of:

LONG ISLAND LIGHTING COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

DOCKETED
USNRC

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Docket No. 50-322-OL-3

Deposition of: Elias P. Stergakos

Location: Hauppauge, New York

Pages: 1 - 49

Date: Friday, August 24, 1984

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Corrections to Deposition Transcript of
Dr. Elias P. Stergakos, Dated August 24, 1984

<u>Location</u>	<u>Change</u>
page 1, line 16	Change "Stergokos" to "Stergakos"
page 6, line 14	Change "McCaffery" to "McCaffrey"
page 6, line 21	Change "Eddie" to "Ed"
page 7, line 11	Change "Cold shutdown." to "Cold shutdown?"
page 7, line 13	Change "or" to "and"
page 8, line 4	Add "are" after "consequences" and add "them" after "have"
page 9, line 15	Change "that" to "if"
page 9, line 16	Add a comma after "events"
page 10, line 15	Change "Randals" to "Randles"
page 10, line 16	Change "part" to "group"
page 12, line 16	Change "at" to "of"
page 16, line 14	Change "reflects" to "reflect"
page 19, line 13	Change "115" to "15"
page 23, line 22	Change "say" to "said"
page 26, line 14	Add a comma after "evaluation"
page 29, line 9	Change "don't" to "have only"
page 33, line 13	Change "Any" to "In the"
page 41, line 11	Change "my" to "mine"; add "is" before "not"; and add "a" after "not"
page 43, line 9	Add "not" after "do"
page 45, line 12	Change "Tunay" to "Tunney"
page 45, line 14	Change "Tunay" to "Tunney"
page 45, line 15	Change "Tunay" to "Tunney"
page 45, line 16	Change "Tunay" to "Tunney"
page 46, line 16	Change "Tunay" to "Tunney"
page 46, line 17	Change "Tunay" to "Tunney"

SIMONS/R/T

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNAC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

AUG 21 1984

-----X
In the Matter of:

LONG ISLAND LIGHTING COMPANY

(Shoreham Nuclear Power Station,
Unit 1)
-----X

:
: Docket No. 50-322-OL-3
: (Emergency Planning
: Procedures)

DEPOSITION OF ELIAS P. STERGAKOS

H. Lee Dennison Building
Ninth Floor
Veterans Memorial Highway
Hauppauge, New York 11787

Friday, August 24, 1984

Deposition of ELIAS P. STERGAKOS, called for
examination by counsel for the Intervenor, taken before
Mary Simons, Court Reporter, beginning at 10:20 a.m.,
pursuant to agreement of counsel.

1 APPEARANCES:

2 On Behalf of the Applicant:

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C O N T E N T S

<u>WITNESS</u>	<u>EXAMINATION BY</u>	<u>PAGE</u>
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E X H I B I T S

(None)

P R O C E E D I N G S

Whereupon,

ELIAS P. STERGAKOS

the deponent, was called for examination by counsel for Suffolk County and, having been first duly sworn by the Notary Public, was examined and testified as follows:

MR. McMURRAY: Let the record reflect that this deposition is being taken pursuant to the rules of 10 CFR and pursuant to agreement among the parties.

EXAMINATION

BY MR. McMURRAY:

Q Sir, would you please state your name and spell it for the record?

A Dr. Elias P. Stergakos. E-l-i-a-s P. Stergakos, S-t-e-r-g-a-k-o-s.

Q Mr. Stergakos, you are the Manager of the Radiation Protection Division at LILCO?

A Correct.

Q What is your relation to Mr. Rigert within the structure of LILCO?

A We are at the same level.

MILLERS FALLS
EZERASE

1 Q You are at the same level.

2 I am looking right now at your affidavit which
3 was submitted on August 3rd, 1984. Do you have that?

4 A Yes, I do.

5 Q When you say you have the overall responsibility
6 for the corporate overview and technical direction of all
7 aspects of radiological protection in the design of rad waste
8 systems, could you be a little bit more specific about your
9 duties and responsibilities?

10 A Well, I am responsible for the engineering
11 aspects which pertain to radiological consequences, systems,
12 et cetera.

13 Q You are responsible, for instance, for determining
14 what the onsite and offsite consequences of accidents would
15 be?

16 A Yes, I am responsible to determine it, or let others
17 determine it for us.

18 Q How long have you been with LILCO?

19 A One year.

20 Q And you came from Burns and Roe, is that correct?

21 A Correct.

22 Q Mr. Stergakos, when did you first see the Board's

1 July 24th memorandum and order regarding the strike issues?

2 A I cannot recall exactly, but I will say within
3 three or four days. I cannot say exactly.

4 Q Who gave you the memorandum and order?

5 A I do not remember who gave it to me. I simply
6 do not know. Most likely my supervisor, but I can't remember
7 how I came by it. Or it could have been through the licensing
8 people. Most probably it came from the licensing people.

9 Q When you say the licensing people, who are you
10 referring to?

11 A The LILCO personnel who are responsible for
12 licensing affairs.

13 Q What specific people are you referring to?

14 A Mr. Grunseich or Mr. McCaffery, either one of
15 those two persons could have given it to me. I can't recall.

16 Q Once you received the memorandum and order, were
17 you asked to do something about it?

18 A Yes. I was asked to look at it and evaluate
19 the subject matter from my field.

20 Q Who asked you to do this?

21 A It was my supervisor, Mr. Youngling. Eddie
22 Youngling, simultaneously of course with the licensing people.

1 Q And did Mr. Youngling ask you to do this at
2 approximately the same time you first saw the document?

3 A Yes, right.

4 Q Could you be more specific with respect to what
5 Mr. Youngling asked you to do?

6 A Evaluate the problem pertaining to the radiologi-
7 cal consequences as is questioned in this Board's questions
8 here. Look at all aspects ---

9 Q Look at all aspects of the consequences that
10 could occur if there was an accident during cold shutdown?

11 A Cold shutdown. Look not only at cold shutdown,
12 but start from the beginning, in other words, from the
13 operation or the consequences and go down step by step and
14 determine what the consequences would be, which leads down
15 to cold shutdown, et cetera. You look at the problem.

16 Q When you say look at the problem, was he asking
17 you to look at all consequences that could arise if there
18 was an accident at Shoreham at full power and then at low
19 power?

20 A Look at the consequences period, yes. I had
21 to determine where to start and that was it.

22 Q Well, are you saying then that you have done a

1 consequence analysis for accidents at full power?

2 A No. I did not do an analysis at full power. I
3 looked at that and I determined that at full power the
4 consequences as we have at the documents which exist at LILCO,
5 the FSAR, for example.

6 Q Did you look at the Pickert, Lowe and Garrick
7 consequence analysis?

8 A I looked at that, but I did not spend much
9 time when I looked at it. So I quickly was led to the
10 conclusion that I would go to cold shutdown and see the conse-
11 queces of that position.

12 Q So you looked at the Board's concerns and you
13 concluded quickly that it would be a good idea to go to
14 cold shutdown during a strike?

15 A Yes.

16 Q What was the basis for your decision?

17 A The criteria which I stipulate in my affidavit
18 to keep the doses to the public one rem whole body and five
19 rem thyroid.

20 Q Let's start from the beginning. Once you
21 received instructions from Mr. Youngling, what did you do?

22 A What did I do? I looked at all my references ,

1 of course starting from the FSAR, NUREGs, NEPA documents,
2 standard review plans, et cetera, pertaining to the subject
3 matter, and as a good engineer I did my job.

4 Q That doesn't exactly tell me what you did,
5 Mr. Stergakos. You went and looked at the FSAR.

6 A Yes.

7 Q When you looked at the FSAR what were you looking
8 for?

9 A Mostly Chapter 15 accidents.

10 Q And what about the Chapter 15 accidents?

11 A Well, our conclusions are reflected in our
12 affidavits.

13 Q Tell me what your purpose was in looking at
14 the Chapter 15 accidents?

15 A My purpose was to see that any of the events,
16 Chapter 15 events will not exceed the criteria which we
17 established, that is one rem whole body and five rem thyroid.

18 Q Well, is it fair to say that you first looked
19 through the Chapter 15 accidents to determine which were
20 possible and which were not possible at cold shutdown?

21 A That is true. We looked at the whole aspects
22 of the problems.

1 Q Now was that one of the first things you did was
2 to look at Chapter 15 accidents and see which were possible
3 and which were not at cold shutdown?

4 A I assume it was one of the first things. Since
5 I could have gone to my office and picked up a NEPA document
6 or the NUREG 396. I can't say yes, that was the first thing,
7 but it was one of the first things, yes.

8 Q Did you do that yourself or did you have someone
9 else do it for you?

10 A There was a group of us who did that. I did a
11 lot of work, yes.

12 Q You did a lot of work?

13 A Yes.

14 Q Who else was in the group?

15 A My associates, Dr. Beer and Miss Mary Ann Randals,
16 I and of course from Mr. Rigert's part.

17 Q Was this the group that was charged with looking
18 at the, for lack of a better word, the technical aspects
19 of the problem brought up by the Board?

20 A That, but also specific questions that I posed
21 upon them.

22 Q Were you the head of this group?

1 A Yes, I am in our work from my group. I will not
2 say for Mr. Rigert's group.

3 Q Once you and your group determined which accidents
4 were possible, and I am talking about Chapter 15 accidents
5 were possible and which were not possible at cold shutdown,
6 what did you do then?

7 A We proceeded to evaluate the radiological
8 consequences.

9 Q Evaluate ones which were possible?

10 A Yes. Your question was which was possible. That
11 was the question, right? Possible as defined in the affidavit.

12 Q In considering the consequences of accidents
13 at cold shutdown, I take it you looked at the Chapter 15
14 accidents as defined in the FSAR, correct?

15 A Correct.

16 Q Did you look at any other accidents?

17 A Yes. We did look at the Class 9 accidents.

18 Q And could you explain more how you looked at the
19 Class 9 accidents?

20 A We looked at the scenarios which could perhaps
21 be developed and we came to the conclusion they were not
22 credible.

1 Q Were there any notes or memoranda or documents
2 that were produced as a result of you or your group's
3 evaluation of the Class 9 accidents?

4 A No.

5 Q None at all?

6 A None at all. Produced you say?

7 Q Produced, created or developed.

8 A In the past, no, we have not. Not produced.

9 Q It looks like you are sort of focusing on the
10 word produced. Were any notes taken at all in your group's
11 evaluation of the Class 9 accidents?

12 A No. At that time we did not produce and we did
13 not take any notes. Instead there was a group discussion.

14 Q You say at that time. Have there since been any
15 documents developed regarding Class 9 accidents?

16 A We are verifying our conclusions at that time
17 right now.

18 Q You are?

19 A Yes.

20 Q So there are now analyses that are being conducted
21 and may be in writing at this time?

22 A They are not analyses. I would call them scoping

1 evaluations of our conclusion.

2 Q And what stage are they in right now?

3 A I would say approaching the end of the evaluation.

4 Q Are they done now?

5 A No, they have not been. As I stated, they are
6 approaching the end. They are not complete.

7 Q When do you expect they will be completed?

8 A Within a day or two. Complete means ---

9 Q You mean approved and reviewed and things
10 like that?

11 A Yes. We know what the conclusions are right now.

12 Q There has been a draft produced by someone of
13 this scope ---

14 A In that sense I cannot say. I know the people
15 are doing the evaluation. So they are writing -- and I
16 don't know what your definition of a draft is. So I discussed
17 their conclusions and that is all.

18 MR. McMURRAY: Mr. Zeugin, I would like to request
19 the immediate production of all documents pertaining to
20 Mr. Stergakos' or his group's evaluation of Class 9 accidents
21 which may occur at cold shutdown and any analyses regarding
22 the credibility or non-credibility of those accidents, and

1 also any possible subcontracted work on those same issues.

2 MR. ZEUGIN: To the extent they are completed,
3 we will produce them.

4 MR. McMURRAY: Well, I think to the extent that
5 they exist right now we are requesting them. Mr. Stergakos'
6 definition of complete seems to be a document that has gone
7 through the complete review process. We would like anything
8 that exists now, in the form it exists now, as well as its
9 completed product, completed form, and I would like it before
10 the trial begins on Tuesday.

11 MR. ZEUGIN: We will do what we can.

12 THE WITNESS: I must correct one statement. You
13 said Mr. Stergakos' group. It is not my group.

14 MR. McMURRAY: Well, the group of which
15 Mr. Stergakos is head.

16 Do you still have any concern about that?

17 THE WITNESS: No. I just wanted to make a
18 distinction that it is not my people over whom I have direct
19 control.

20 MR. McMURRAY: So it could be also Mr. Rigert's
21 shop who is also looking at that problem?

22 THE WITNESS: It is his group.

1 MR. McMURRAY: It is his group. Okay.

2 Well, I would expand the scope of my request
3 to any work being done by Mr. Rigert's group or people under
4 Mr. Rigert's command and control.

5 BY MR. McMURRAY:

6 Q Was any of the evaluation of consequences of
7 accidents at cold shutdown subcontracted out?

8 A No.

9 Q They were all done internally?

10 A Correct.

11 Q And all done basically by the people you have
12 mentioned already, Dr. Beer, Miss Randals, Mr. Rigert and
13 yourself?

14 A That is not correct. The Class 9 accidents are
15 done by Mr. Rigert's group.

16 Q Okay.

17 A That does not mean that there is no consultation
18 between the two groups by any means, but the physical aspects
19 of those things are under Mr. Rigert's group.

20 Q Let me focus for a minute just on the Chapter 15
21 accidents.

22 A Yes.

1 Q When you looked at the Chapter 15 accidents,
2 did you accept all the assumptions associated with Chapter
3 15 accidents?

4 A Yes, as stated in the FSAR.

5 Q As stated in the FSAR. Okay.

6 And did you then, and I am not talking about
7 going to the Class 9's, did you make any further assumptions
8 of possible failures beyond those defined in Chapter 15?

9 A No.

10 Q How long did it take your group to look at the
11 Chapter 15 accidents and determine their consequences at
12 cold shutdown?

13 A I cannot give the exact number of days or weeks.
14 I guess the documents which we provided you reflects the
15 approximate date on that Chapter 15. So that is perhaps when
16 we finished it.

17 Q Well, I have an affidavit dated August 3rd from
18 you and Mr. Rigert.

19 A Yes.

20 Q And you are saying that the analysis conducted
21 by your group was completed on or about August 3rd?

22 A We had the results by that time.

1 Q Did you have the results day, before that time?

2 A No. I think it was very close, maybe the previous
3 afternoon or something like that. I cannot say, but when
4 the affidavit was written, we had those results and we knew
5 what we were dealing with.

6 Q And when were you first asked or notified that
7 you might be a witness in this case?

8 A I can't answer that question. I don't keep
9 track of those things.

10 Q Well, we are dealing with a fairly short time
11 frame, Mr. Stergakos. It was obviously some time after the
12 Board's order.

13 A Yes, it was, as soon as I was given the task
14 to proceed and evaluate the things. I would say within days
15 thereafter it became apparent that I would be testifying.

16 Q It was within days after having received the
17 Board's order?

18 A Yes, I would say. Yes, but I can't specify
19 the number of days or day. I don't know.

20 Q Did you have any discussions with attorneys for
21 LILCO regarding whether or not you would become a witness in
22 this case?

1 A The question of whether I should become a
2 witness or not, I did not discuss it with him, no.

3 Q Who was it who told you you were going to be a
4 witness in this case?

5 A Mr. Youngling.

6 Q Mr. Youngling.

7 Other than the Chapter 15 accidents and Class
8 9 accidents, did your group or Mr. Rigert's group or anybody
9 at LILCO, to the best of your knowledge, look at the conse-
10 quences of any other accidents?

11 A I don't know of any other type of accidents. You
12 mean the definitions of the types of accidents, and I don't
13 know what you are talking about, to be honest with you.

14 Q Did you postulate any accidents besides those
15 which are Class 9 or which are in Chapter 15?

16 A No.

17 Q Did you do any accident analyses for the consequence
18 of accidents at restricted power levels and not just at
19 cold shutdown?

20 A No. I do not know what you mean by restricted.
21 If you mean less than a hundred percent or hundred and two
22 percent; is that your question?

1 Q Yes. For instance, at various levels below a
2 hundred percent, say, fifteen percent or twenty percent.

3 A No. We didn't go steps. We were trying to
4 envelope the evaluations.

5 Q So you didn't look at possible accidents that could
6 occur in the interval between full power and cold shutdown?

7 A What you are asking me is different from what
8 you were asking me before, and I don't know where you are
9 going now.

10 Q Well, you don't have to know where I am going.
11 You just have to answer the questions.

12 (Laughter.)

13 A You said before at 115 and such step intervals,
14 and now you jumped to cold shutdown, which is a different
15 situation. I am not at any power at cold shutdown. That
16 is what I am trying to tell you.

17 Q I think you probably misunderstood me.

18 Did you look at any accidents that could occur
19 in the transition from full power to cold shutdown?

20 A No.

21 (Pause while counsel confer.)

22 Q Are you now looking at any of the consequences

1 of accidents that could occur between full power and cold
2 shutdown?

3 A No.

4 MR. ZEUGIN: Let me make sure that question
5 is clarified, Mr. Stergakos, for a proper answer.

6 Are you now referring to the descent from full
7 power to cold shutdown, or are you talking about intermediate
8 power levels that the plant may be run at?

9 MR. McMURRAY: The descent.

10 THE WITNESS: No, we did not look at the descent.
11 We did not look period.

12 BY MR. McMURRAY:

13 Q What about Mr. Rigert's group?

14 A I am not aware of them doing such a thing.

15 Q Are you aware of anyone at LILCO or any
16 subcontractors doing that work?

17 A I am not aware of such a thing.

18 Q I take it from Mr. Zeugin's clarification that
19 you or someone at LILCO is now looking at consequences of
20 accidents at intermediate power levels?

21 A No, I don't take it as such.

22 Q And such an evaluation was not done by your group?

1 A No. At different power levels, no, we did not
2 do that.

3 Q Once your group completed its analyses of the
4 Chapter 15 accident consequences, what sort of memoranda or
5 other sorts of documents were produced?

6 A Exactly what you have and nothing more.

7 Q The County has received all documents produced?

8 A Yes.

9 Q Did the County receive all notes?

10 A We have no notes.

11 Q Were any internal memoranda produced?

12 A No memoranda were produced.

13 Q During the course of your group's evaluation
14 were you in contact with the staff, the NRC staff?

15 A They called us.

16 Q They did call you?

17 A Yes.

18 Q Who from the NRC staff called you?

19 A I did not take names down, but one gentleman's
20 name is --

21 (Witness confers with his counsel.)

22 -- it was Mr. Hodges that I remember.

1 Q When did Mr. Hodges contact you?

2 A I think it was Monday or Tuesday. I don't
3 remember.

4 Q Monday or Tuesday when? There have been a couple
5 since the Board's order.

6 A Usually you refer to the last one.

7 Q Okay. A couple of days ago?

8 A Yes. That is what I recall and that is what
9 I believe is the case.

10 Q Is that the first contact that your group or
11 LILCO has had on this matter of the strike issues with the
12 staff?

13 A That is when we were contacted.

14 Q Did you attempt to contact the staff before that?

15 A No.

16 Q When Mr. Hodges called, what was the purpose
17 of his call?

18 A To ask questions pertaining to affidavits.

19 Q And what were the questions that Mr. Hodges
20 asked?

21 A Questions pertaining to whether we had looked
22 further than the Chapter 15 accidents.

1 Q And why did he ask you that?

2 A I assume because we do not -- and this is an
3 assumption -- we do not explicitly refer to anything else
4 in our affidavit directly or explicitly besides those
5 accidents.

6 Q Did he express any concern about the fact that
7 accidents other than Chapter 15 accidents weren't referred
8 to in your affidavit?

9 A He asked the question.

10 Q He asked the question why they weren't there?

11 A No. He asked whether we had looked, et cetera.

12 Q What other questions did he ask you?

13 A That was it really, and we had a discussion why
14 we did not include those things, et cetra.

15 Q And you told him what?

16 A We told him, or them really, because it was
17 a group and I just mentioned one person, that our evaluations
18 showed that the Class 9 accidents were not credible.

19 Q And then what did Mr. Hodges say to you?

20 A Oh, we discussed the situation and we discussed
21 the assumptions and different conditions and that is it.
22 We closed and say good-bye.

1 Q Did Mr. Hodges advise you to do anything?

2 A No. I mean in the sense that we discussed
3 with him what we were doing. He did not tell us to go ahead
4 and do this, or something like that, no.

5 Q Did he suggest that it would be better if you
6 went ahead and did the evaluation?

7 A What evaluation?

8 Q Well, if you included an analysis of Chapter
9 9 accidents in your affidavit or in other materials?

10 A I don't recall him saying that sort of thing.

11 Q So what you are saying is that the scope of
12 your discussions with Mr. Hodges were restricted to your
13 explanation of why you felt Class 9 accidents weren't
14 credible?

15 A Yes.

16 Q And he expressed no opinions one way or the
17 other on your conclusion?

18 A He gave, for example, in one example, Brunswick,
19 where some of the ---

20 Q Excuse me, was that Brunswick?

21 A I believe that was it, where some of the RHR
22 coolers failed, and he brought that example up, and we

1 could go ahead and discuss, us engineers could discuss
2 different aspects of the problems.

3 Q Well, what opinions did he express during the
4 course of this phone call?

5 A I will have to ask you to be specific. I don't
6 know what you are talking about, opinions.

7 Q What opinions did he express about the credibility
8 or non-credibility of Class 9 accidents during cold shutdown?

9 A I don't recall him expressing opinions whether
10 they are credible or non-credible and the extent that the
11 Class 9 accidents should be evaluated, et cetera.

12 Q What did he say happened at Brunswick?

13 A What I just mentioned.

14 Q And he felt this was a concern that you should
15 look at?

16 A No. He brought it up as an example because, as
17 I stated, we did not include Class 9 accident type events
18 in the affidavit, and he brought it as an example.

19 Q Well, what was his purpose in raising that example?

20 A It could be the instigating event type of thing,
21 you know.

22 Q So the implication was that this was something you

1 ought to look at, right?

2 A That is your conclusion. We discussed the Class
3 9 accidents and other parameters that led to the conclusion
4 that Class 9 accidents are not credible.

5 Q Well, what conclusion did you draw after Mr. Hodges
6 told you about the Brunswick example?

7 A I remained steadfast with my decisions, the decisions
8 we had made because those type of things were considered
9 before we wrote the affidavit, although not the specific
10 examples that those situations were contemplated.

11 Q Now you have said, you or your group were now
12 in the process of developing a document regarding the Class
13 9 accidents.

14 A I didn't say that. We are doing evaluation
15 scoping, I think that was the proper word that I said,
16 calculations.

17 Q And this will be on paper, right?

18 A Yes.

19 Q When I use the word "document," I just mean
20 something on paper.

21 A I do not know. They are scoping. I must under
22 line that. As far as I know, they are not official or anything

1 like that in the sense of calculations, and I am not aware
2 to the extent that they will carry them.

3 Q When was work on this document commenced, this
4 scoping document?

5 A I would say within a week or so.

6 Q Within a week or so?

7 A Yes.

8 Q Was it begun prior to Mr. Hodges' phone call?

9 A Discussions were going on before Mr. Hodges' ---

10 Q You are talking about the preparation of the
11 document?

12 A I don't know. I can't say the preparation. To
13 start preparing a document you have to have discussions. You
14 can't just go and jump in preparing the document or writing
15 down things.

16 Q So you are saying that the discussions pertaining
17 to whether or not there should be such a document began
18 before Mr. Hodges' phone call?

19 A The discussion pertaining to the whole aspect
20 of Class 9.

21 Q That was before Mr. Hodges' phone call?

22 A Yes.

1 Q Okay. Now the preparation of the document, the
2 scoping document, took place after Mr. Hodges' phone call,
3 right?

4 A You keep on saying preparation of the document.
5 Engineers do work and they come up with conclusions, et cetera,
6 sometimes.

7 Q Mr. Stergakos, before Mr. Hodges' phone call,
8 was there any intention to put down this scoping or to write
9 down this scoping document?

10 A That question I cannot answer because I do not
11 give directions to the other group.

12 Q Do you know whether there was any intention?

13 A Whether there was any intention? I do not know.

14 Q Do you know whether it was discussed, whether
15 or not such a scoping document should be produced?

16 A Produced? No, I don't know.

17 Q When you say scoping document or scoping report,
18 whatever the term was, what do you mean?

19 A I mean something which does not necessarily
20 reflect the procedures that we have established for producing
21 calculations, approving, checking and signing off and
22 documenting them, et cetera, or a full-blown analysis, any

1 one of those things. I must underline a full-blown analysis,
2 or detailed analysis.

3 Q To the best of your knowledge, how long is this
4 document in its present state?

5 A I do not know how long it is.

6 Q Have you seen it?

7 A No, I have not seen it. I have seen people
8 writing on pieces of paper, but I don't know how long it is.
9 I don't discussed the conclusions.

10 Q Let's go to Attachment 1 of your affidavit.

11 (Pause while the witness looks through documents.)

12 Would you agree with me that with respect to the
13 Chapter 15 accidents that you have divided them into three
14 groups, those where the event is not possible, second is
15 where the event is possible but the consequences are incon-
16 sequential or non-existent and the third is where the event
17 is possible but the consequences are below PAG limits?

18 A Correct.

19 Q What did you mean when you said the consequences
20 of some accidents would be inconsequential?

21 A In the sense that orders of magnitude are far,
22 far less than the criteria which we established.

1 Q By the criteria you established, do you mean the
2 PAG limits?

3 A Yes.

4 Q When you say orders of magnitude, would it be
5 one order of magnitude or two or three?

6 A No.

7 Q Many?

8 A We already discussed those in paragraph 7, for
9 example.

10 Q An accident that had produced consequences of
11 one order of magnitude below the PAG's would not fall in the
12 second group, but would fall in the third group?

13 A On a general basis, yes.

14 Q Of the I believe 14 accidents in the second group,
15 which have consequences which are not non-existent, but which
16 are inconsequential?

17 A What are you looking at?

18 Q I am looking at the 14 accidents in the second
19 group.

20 A Yes.

21 Q Now some have consequences which are non-existent
22 and some have consequences which are inconsequential.

1 A Yes.

2 Q I want to know which ones have consequences
3 which are inconsequential.

4 A Well, if you notice the asterisk, it says
5 inconsequential or non-existent. There is not a clear
6 distinction between the two. Right now I cannot say. Well,
7 I can go down the line and more or less predict non-existent
8 or inconsequential, but we have not in this document devised
9 or indicated them differently.

10 Q Well, I understand that you haven't done it in
11 this document, and I want to know which ones are non-existent
12 and which ones are inconsequential.

13 A You want to go down the line and perhaps I can
14 draw some conclusions from this.

15 Q Okay. Let's start with No. 7, feedwater control
16 failure.

17 A I would say those are non-existent.

18 Q Okay. How about No. 9?

19 A Non-existent.

20 Q Let's go to No. 15.

21 A Non-existent.

22 Q No. 18?

1 A I would say non-existent.
2 Q No. 19?
3 A Non-existent.
4 Q 20?
5 A Non-existent.
6 Q Was that non-existent?
7 A Yes.
8 Q 22?
9 A The same thing, non-existent.
10 And non-existent, 23.
11 Q Okay. 24?
12 A Non-existent.
13 Q 25?
14 A Non-existent.
15 Q 26?
16 A Non-existent.
17 Q 30?
18 A Inconsequential.
19 Q 34?
20 A Inconsequential.
21 Q And 37?
22 A Inconsequential.

1 Q Now when you say that the consequences for a
2 particular accident, the radiological consequences would be
3 non-existent, you are speaking in absolute terms that there
4 just would be no radiological consequences?

5 MR. ZEUGIN: Where are you defining no radiological
6 consequences, at the boundary of the plant or within the
7 plant?

8 MR. McMURRAY: I will let Mr. Stergakos define
9 it.

10 THE WITNESS: If I am talking about -- well, we
11 can go down the line and I will tell you in my opinion where
12 I believe whether it would be non-existent or inconsequential.
13 Any plant or anywhere else, I can tell you that.

14 BY MR. McMURRAY:

15 Q When you were going down the line just right
16 now and giving me your definition, were you talking about
17 at the plant boundary?

18 A No. I mean really as far as non-existent, I had
19 in mind even people within ---

20 Q Even within the plant?

21 A Within the plant, yes.

22 Q Mr. Stergakos, are you saying that the consequences

1 for these accidents we have just been discussing would be
2 non-existent because there wouldn't be a fuel failure and
3 therefore no release?

4 A Fuel failure, yes.

5 Q You were focusing on fuel failures?

6 A Yes.

7 Q Now you mentioned earlier also that you could go
8 down the line and sort of tell me at what point, whether
9 the plant boundary or wherever, the consequences would be
10 inconsequential, and I was wondering if you could do that.

11 MR. ZEUGIN: I take it you are asking this question
12 with regard to Items 30, 34 and 37?

13 MR. McMURRAY: Well, Mr. Stergakos just said
14 he could go down the list.

15 THE WITNESS: Starting with 30, okay, for example,
16 I would say when we say inconsequential, we have to define
17 what we mean by that because even within the plant if we
18 take the limits that the operating people can have, I would
19 say even this event will be inconsequential within the
20 plant limits.

21 BY MR. McMURRAY:

22 Q This is for 30?

1 A Yes.

2 (Pause.)

3 Again, using the criteria that the dose that the
4 people can get in the plant, that is operators, et cetera,
5 and taking into consideration the fact that we are dealing
6 with the event occurring after the 24-hours period, 34 will
7 fall into the same category.

8 Q Mr. Stergakos, I didn't quite understand that,
9 and that is because I am a layman. So if you could just
10 run through that again slowly, especially why the 24-hour
11 time frame was important.

12 A Because all these are under that condition.

13 Q Under what condition?

14 A 24 hours. The reactor has been brought down to
15 cold shutdown and 24 hours have been passed.

16 Q 24 hours have been passed since the notice of the
17 strike or since the cold shutdown has been achieved?

18 A No, from the initiation to shut down the reactor,
19 the steps that they would take to shut down the reactor to
20 the point that we are talking about.

21 Q 37 is the same?

22 A Yes.

1 Q So you are saying for 34 and 37 it would be
2 inconsequential at the site boundary?

3 A Not only that, but I went a step further and
4 I said inconsequential using the criteria that the plant
5 people can -- as far as the dose which they can get any time,
6 and that can be considered inconsequential for them, too.

7 Q Is that the same as the PAG levels?

8 A No, they are not.

9 Q What criteria are you talking about then?

10 A The plant operating criteria.

11 Q Would you explain what the plant operating
12 criteria are for exposures?

13 A They are in the ranges of rem, and I personally
14 do not know the exact figures that they have in the plant
15 procedures right now, but I know they are in the fractions
16 of rem. So that is what I am talking about.

17 Q Fractions of rems?

18 A Yes.

19 Q Let me refer you to the three-star category.

20 (Pause.)

21 A three-star category is where any accident
22 that occurred, according to your analysis, would not have

1 consequences above the PAG limits at the site boundary,
2 correct?

3 A Correct.

4 (Pause while counsel confer.)

5 Q Mr. Stergakos, let me refer you to the fuel
6 handling accident which is No. 36 on your attachment to
7 your affidavit.

8 A Yes.

9 Q I have seen your analysis on the fuel handling
10 accident, and I just want to know if the assumptions made
11 were the same as in Chapter 15?

12 A They were exactly the same, all of the
13 assumptions. As a matter of fact, we used the results of
14 Chapter 15, 16 rem or something.

15 Q So you said 16 rems?

16 A For the calculation we used 16 rem. I believe
17 that came out of Chapter 15. Everything came out of Chapter
18 15.

19 Q Okay. All the assumptions made were Chapter 15
20 assumptions, correct?

21 A Yes.

22 Q Mr. Stergakos, let me refer you to the license

1 condition. Do you have that in front of you?

2 A Which one is that?

3 Q LILCO proposed license condition. I think it is
4 within Mr. Cordaro's affidavit. I am sure you must have a
5 copy of it somewhere.

6 (Pause.)

7 A I have it.

8 Q I would like to refer you to sub-item No. 2,
9 where it says "LILCO would be permitted to conduct such other
10 operations as the staff shall approve," et cetera.

11 A Okay.

12 Q Sub-item No. 2, do you see that?

13 A Yes.

14 Q What are the other operations that LILCO is
15 considering there?

16 A That I do not know, but I do know that they shall
17 not be anything which would violate radiological consequences.

18 Q When you say that, you mean where the consequences
19 would not exceed the PAG limits at the site boundary?

20 A As specified, yes.

21 Q How would that be determined?

22 A Because I would have to do the analysis.

1 Q And the analysis would have to be done at the
2 time of the strike?

3 A That is a postulation on your part. I mean, yes,
4 I would assume that.

5 Q In other words, you haven't been asked now to
6 consider what the consequences would be for a group of
7 "other operations" at cold shutdown, correct?

8 A Correct.

9 Q Who would know what the term "other operations"
10 is intended to cover?

11 A I do not know who decides what they want to do
12 or what would be done. I will have the responsibility to
13 determine the radiological consequences.

14 Q Would Mr. Scalice know what the term "other
15 operations" is meant to cover?

16 A That you have to ask him.

17 Q You really have no idea what operations are
18 considered here?

19 A No.

20 Q I believe using the steps described in Mr. Scalice's
21 affidavit it takes about 12 to 16 hours to descend to cold
22 shutdown from full power; is that correct?

1 A I believe that is what is stated in there. I
2 didn't decide that.

3 Q You didn't decide that, and you haven't done
4 any analysis to determine whether or not that is true?

5 A No, I have not done it.

6 Q That is really not your area, is that what you
7 are saying?

8 A The rate at which they want to shut down the
9 reactor? No, that is not my area.

10 Q And also the statement in Mr. Scalice's affidavit
11 that cold shutdown could be achieved in eight hours by
12 scrambling the reactor, also you have done no analyses to
13 determine whether or not that is true?

14 A No.

15 (Pause while counsel confer.)

16 Q I would like to go back to the analysis that has
17 been done on Class 9 accidents. What criteria were used
18 to determine whether or not a Class 9 accident was considered
19 to be credible or not credible?

20 A The criteria that we are presently using are of
21 course the steps that have to be taken or the events that
22 will have to follow to reach to the final accident conditions,

1 the steps that the operators and the systems will take, the
2 automatic systems, and also under the most incredible conditions,
3 assuming that they do occur, the time available for us to
4 react and see that the fuel does not fail.

5 Q You said the most incredible conditions. How
6 do you define whether conditions are credible or incredible?

7 A An incredible condition will mean just capriciously
8 assuming that you lost all coolant.

9 Q Is that an example of something that is incredible,
10 or that is how you define incredible?

11 A That is my, not definition, but as an example
12 of what I mean by incredible, incredible in the sense that
13 I assume instantaneous loss of all coolant.

14 Q I take it that you don't really have objective
15 criteria for credible or incredible, but it is more sort of
16 subjective using your engineering judgment as to what is
17 credible or incredible, correct?

18 A That is always the truth I believe.

19 (Pause while counsel confer.)

20 Q Mr. Rigert's group is the one that has focused
21 on the Class 9 accidents, correct?

22 A Mr. Rigert's group is the group that he is doing

1 written documentation, if you want it as such, yes.

2 Q I believe you said you have discussed the
3 conclusions with Mr. Rigert?

4 A Not Mr. Rigert. Mr. Rigert is on vacation.

5 Q With whom have you discussed the conclusions?

6 A With the man under him which is Mr. John Valente.

7 Q And what has Mr. Valente told you are the con-
8 clusions?

9 A The conclusions that we came up with are that
10 our original assumptions were valid.

11 Q When you say your original assumptions, would you
12 elaborate on what you mean?

13 A That we have plenty under the most incredible
14 scenario, which I stated before, we have enough time for
15 either the systems or the people to react.

16 Q Have any of the initial conclusions of your group
17 that the Class 9 accidents were inconsequential been altered
18 in any way as a result of conclusions reached by Mr. Valente?

19 A No.

20 (Pause while counsel confer.)

21 Q Mr. Stergakos, do you know whether the scoping
22 document that we have been discussing is going to be submitted

1 to the Atomic Safety and Licensing Board next week during
2 the hearings on this issue?

3 A That was not brought up.

4 Q I am trying to determine what Class 9 accidents
5 could occur at cold shutdown. What was the list of accident
6 sequences that you used to try and come up with the Class
7 9 accidents?

8 A We did not use a sequence of events because we
9 cannot really see a sequence of events. At least I do know
10 personally of an enumeration of events that relate to such
11 and such. I told you the worst possible situation.

12 Q Well, did you look at the SAI/PRA for guidance
13 at all?

14 A Well, the PRA does not discuss such events under
15 these conditions.

16 Q By under these conditions you mean cold shutdown?

17 A Cold shutdown conditions because they are
18 incredible to begin with.

19 Q PRA does discuss low-power conditions, doesn't it?

20 A That I cannot answer.

21 Q Did you consider any Class 9 accidents that could
22 in the transition or the descent from full power to cold

1 shutdown?

2 A I already answered that question.

3 Q Your answer is no?

4 A Yes, sir.

5 Q Are those types of accidents considered in these
6 scoping documents that we have been discussing?

7 A As I know, no, and I must underline that.

8 Q Let me ask you about your contacts with
9 Mr. Hodges. Have you had any contacts with anyone else from
10 the NRC about these issues we have been discussing today
11 since your discussion with Mr. Hodges over the phone?

12 A I answered that question, too, and the answer
13 is no.

14 Q Has anybody else at LILCO, to the best of your
15 knowledge, had any contacts with anybody at the NRC about
16 this issue since your discussion with Mr. Hodges?

17 A I cannot answer that question because I do not
18 know.

19 Q To the best of your knowledge, the answer is no?

20 A Yes, "no."

21 (Pause while counsel confer.)

22 MR. McMURRAY: Thank you, Mr. Stergakos.

1 I have no further questions.

2 THE WITNESS: The only thing which I -- oh,
3 I am sorry.

4 (The witness and his counsel confer.)

5 EXAMINATION

6 BY MR. ZEUGIN:

7 Q There is one thing that Mr. Stergakos would
8 like to clarify.

9 Mr. Stergakos, was there anyone who was at your
10 initial meeting that you listed Mr. Rigert and two other
11 people, other than the three other people that you listed?

12 A Yes. There was Mr. Bill Tunay, the LILCO person.

13 MR. McMURRAY: Mr. Bill who?

14 THE WITNESS: Tunay. Don't ask me how to spell
15 his name. T-u-n-a-y.

16 MR. McMURRAY: Who is Mr. Tunay?

17 THE WITNESS: He is a Division Manager of Fuels.
18 I don't remember exactly his exact title, but he is on the
19 same level as I am.

20 MR. McMURRAY: Okay. And he is also part of
21 this group that you ---

22 THE WITNESS: No. He partook in the original

1 discussion. He is presently acting for Mr. Youngling.

2 EXAMINATION

3 BY MR. McMURRAY:

4 Q Was Mr. Tunay's participation with respect to the
5 issue of fuel handling?

6 A No. He participated fully.

7 Q He participated fully. What was the role he
8 played?

9 A Well, he played as any engineer in looking at
10 all events and consequences, et cetera, in the original
11 discussion.

12 Q He took Mr. Youngling's place because Mr. Youngling
13 wasn't there?

14 A No. Presently since Monday. Maybe I am wrong.
15 I think it is since last Friday Mr. Youngling is out and
16 Mr. Tunay is acting on his behalf I believe.

17 Q Did Mr. Tunay participate at all after the first
18 meeting with the group?

19 A Yes. I think there was another meeting that we
20 had and he was present, yes. He was present in another
21 meeting, but we are working as a group and he knows how we
22 are progressing. It is his position right now to know.

1 Q Is he sort of a supervisor for the group?

2 A He is the Department Manager. I have not seen
3 a memo calling him the Acting Department Manager or anything
4 like that, but he is acting on behalf of Mr. Youngling right
5 now.

6 (Pause while counsel confer.)

7 Q I just want to get one thing perfectly clear.
8 We have gotten all documents that have been produced by your
9 group on this particular issue of cold shutdown, correct,
10 Mr. Stergakos?

11 A Yes, you have.

12 Q I am not talking about the Class 9 document now.

13 A Yes.

14 Q And there is nothing, for instance, other than
15 what we have received which shows how the Chapter 15 accidents
16 were divided into three different groups?

17 A Absolutely nothing, except what you have received.

18 MR. McMURRAY: I have no further questions.

19 Thank you very much.

20 (Whereupon, at 11:32 a.m., the Deposition of
21 ELIAS P. STERGAKOS concluded.)

22 * * * * *

I have read the foregoing pages
4 through 47, inclusive, of my
deposition and find it to be true
and accurate to the best of my
knowledge and belief. Signature
is subject to corrections.

Elías P. Stergakos
ELIAS P. STERGAKOS

I, CONNIE-MARIA PARDO a Notary Public
in and for the STATE of New York, ^{COUNTY} of Suffolk, am witnessing
the signing of the Deposition of ELIAS P. STERGAKOS on this
30 day of August, 1984.

Connie-Maria Pardo
Notary Public in and for the
State of New York County of Suffolk

My Commission expires

March 30, 1985

CONNIE-MARIA PARDO
NOTARY PUBLIC, State of New York
No. 52-46153-10
Qualified in Suffolk County
Commission Expires March 30, 1985

CERTIFICATE OF COURT REPORTER

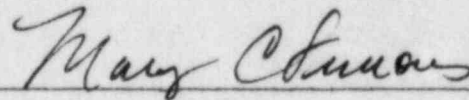
I, MARY SIMONS, Court Reporter, do hereby certify that I reported in Stenomask the deposition of ELIAS P. STERGAKOS.

I further certify that said transcript contains a true and correct transcription of the answers given to the questions herein asked.

I further certify that said transcription was transcribed by me to the best of my ability.

I further certify that I have no interest, financial or otherwise, in the outcome of this litigation.

Given under my hand this 24th day of August, 1984.



Mary Simons
Notary Public in and for
the District of Columbia

My Commission expires
August 14, 1989