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NUCLEAR REGULATORY COMMISSION

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IN THE MATTER OF:

CONSOLIDATED EDISON COMPANY
OF NEW YORK, INC.

(Indian Point Station,
Unit No. 2)

Docket No. 50-247

OL NO. DPR-26
Extension of Interim
Operation Period

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Date - Friday, 10 December 1976

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NUCLEAR REGULATORY COMMISSION

In the Matter of:	
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.	Docket No. 50-247
(Indian Point Station, Unit No. 2.	OL NO. DPR-26 Extension of Interim Operation Period

Ceremonial Courtroom
Westchester County Courthouse
White Plains, New York

Friday, 10 December 1976

The hearing came to order at 9 a.m., pursuant to adjournment,

BEFORE:

SAMUEL JENSCH, Esq., Chairman, Atomic Safety and Licensing Board.

R. BEECHER BRIGGS, Member.

FRANKLIN C. DAIBLER, Member.

APPEARANCES:

(As heretofore noted.)

blt 1

C O N T E N T S

Witnesses	Direct	Cross	Redirect	Recross	Board Exam	Cross on Bd.
Robert Geckler) Webster Van Winkle)		(cont'd) 878				
John P. Lawler)	1,049					

E X H I B I T S

	For Id.	In Evid.
Licensee's OT-18,		
Letter from EPA to Carl Newman, 2/24/75	933	--
Licensee's OT-19,		
Letter from EPA to Carl Newman, 5/8/75	933	--

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P R O C E E D I N G S

CHAIRMAN JENSCH: Please come to order.

Before we resume with the examination of witnesses, the Board would like to discuss with the parties a matter that has given the Board some concern, and we invite the comments of the parties in reference to this matter.

In the review by the Board of the Final Environmental Statement, we feel that there is opportunity for some improvement in the FES. We do not ask that there be a rewriting of the FES; we do request Staff, however, to redo the cost-benefit analysis.

Now, while the term is used in the FES as "benefit-cost balance", recollection of the practice is it has been to have a "cost-benefit analysis", but with a little greater quantification of values set forth in the Final Environmental Statement, than is so in this proceeding.

We feel that the statements in the FES are too conclusionary, and that perhaps a parallel column presentation might be of great use; and it certainly would be of greater value to the Board to have a more detailed quantification of the costs and the benefits.

And it is our thought that any other phases of the Final Environmental Statement that the Staff wants to improve upon, they may do so, of course; but our principal concern is with the Section 6; and it is our thought -- you

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1 heard Dr. Van Winkle state that he wrote a good portion of the
2 FES about a year ago. And there may be some factors in the
3 meantime that are of additional interest to him or to the
4 Board in general, or to the Staff in general.
5 We have received from the Applicant a considerable
6 number of reports in this proceeding; I am not certain the
7 extent to which Staff has had an opportunity to review those
8 matters; but it may be that many of these reports were not
9 available until after the time the Draft Environmental State-
10 ment was prepared.
11 We do understand that the FES does represent some
12 modifications of the Draft Environmental Statement. We are
13 not sure of the extent to which the additional data presented
14 in this proceeding was available to the Staff in its considera-
15 tion of either the DES or the FES.
16 But we do request the Staff to redo the cost-benefit
17 analysis portion of the FES.
18 With that, shall we proceed with further examination
19 of the witness?
20 MR. TROSTEN: Mr. Chairman, are you asking that
21 this be produced by Monday?
22 CHAIRMAN JENSCH: No.
23 MR. TROSTEN: Because I really feel that in view
24 of the amount of time that has transpired, and the amount of
25 effort Staff has put into this that you should require

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that Staff have this document available by Monday.

CHAIRMAN JENSCH: Why do you select Monday?

MR. TROSTEN: Because we want to move along as quickly as we can with the proceeding, and it is very important that we conclude the proceedings as soon as we possibly can.

CHAIRMAN JENSCH: Well, we certainly will try to do that.

We have considered scheduling possibilities during the course of this proceeding.

MR. TROSTEN: Yes, sir.

CHAIRMAN JENSCH: And due to the conflicts the Board has already scheduled, we are unable to have further sessions of this proceeding until next year. We are available for an early sitting in January.

MR. TROSTEN: Mr. Chairman, if you are unable to have further sessions next week, then I would request that we proceed with the further cost-benefit analysis by the Staff right now.

MR. LEWIS: Mr. Chairman, my reaction to what you are asking for is that there is no way that it can be produced today or by Monday. It obviously involves going back into a quantification of factors, not all of which may have been done up to date. In addition, the second part of your discussion related to possible updating of Dr. Van Winkle's views;

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and, obviously, that is not the kind of thing you can turn around on on a moment's notice, either.

CHAIRMAN JENSCH: We didn't think it could be, either. We recognize it involves some time problem.

MR. LEWIS: Well, fine; I didn't want to let stand unopposed, Mr. Trosten's suggestion we could either explore these things today or totally next week.

MR. BRIGGS: May I say something, please?

I do not believe it is intended that Dr. Van Winkle go through all these reports and make another analysis. I think the Board is primarily concerned with the cost-benefit analysis. If, because Dr. Van Winkle wrote his part a year ago something has not been done in the rewriting, I mean, if it has just been left in there -- there were some statements that were suggested yesterday in the rewriting -- those might be changed.

But I do not think it is intended he go through all these reports and redo the thing.

MR. LEWIS: In any event the cost-benefit analysis would involve going back and working up something anew.

MR. TROSTEN: Mr. Chairman, I have two further comments to offer:

One is that I think that we need to have a fixed date set for the revision of the cost-benefit analysis, particularly in view of Mr. Briggs' clarification of the

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1 Board's request. It seems to me that the nature of the analysis
2 is really very simple. We are not dealing with a reevaluation
3 of all of the studies; we are dealing essentially with
4 I guess what you might call probability analysis.
5 And it is obvious that the sort of analysis that
6 has to be performed here can be performed I think relatively
7 quickly; because there are going to be qualitative elements
8 to it, significant qualitative elements to it.
9 The concern I have is very simple: we are going to
10 make a genuine effort today to try to conclude. We have gone
11 over the matter. We are going to try to conclude our cross-
12 examination promptly. I do not know how much cross-
13 examination, of course, other parties may have of the Staff,
14 because we proceeded with our going forward first.
15 We have a limited amount of redirect testimony
16 primarily to respond to questions -- I would say almost
17 entirely, I would say -- to questions that have arisen from
18 the Board, and one or two from other parties. I do not know,
19 I gather that there may be some redirect testimony from the
20 Staff following cross-examination.
21 And so it is certainly possible we could conclude
22 today. And what concerns me about this is that I really would
23 like to be able to move forward as quickly as we can to
24 an initial decision for reasons I have stated. So, could
25 the Chairman establish a date for this? And there may not be

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the necessity for this further hearing on this cost-benefit analysis. We'll have to wait and see what it says, but I am just concerned that the thing sort of hangs there; that we may find ourselves in a situation where what I characterized as a difficult situation with regard to the present terms of the operating license could be exaccerbated.

CHAIRMAN JENSCH: We appreciate your concern, and the Board is endeavoring to move as rapidly as possible. This matter we have raised, however, is a very serious matter in the mind of the Board. Now, I think we will explore with the Staf some anticipated date in this regard; but at the same time I think it is of such importance to the Board that we cannot just pass it aside in the general thought we want these data, we want this analysis; we will explore with the Staff the time necessary.

Now, as Mr. Briggs has pointed out, whatever the Staff wants to do about other matters should not delay the cost-benefit analysis. Our primary concern is the cost-benefit analysis which in its present form we think is of serious deficiency.

So what would the Staff suggest as the date that this could be done. Do you want to confer?

MR. LEWIS: Well, it involves working with people at Oak Ridge National Laboratory. Of course the problem is, we are coming into a season when people's schedules tend

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to conflict. I don't have a very good feel -- can I make an agreement to perhaps convene a conference call next week to advise the Board with a little more certainty of what the schedule might entail?

CHAIRMAN JENSCH: If you have an opportunity to make a telephone call during this day, maybe you can get some feel from the laboratory about it, if you can.

MR. LEWIS: We will attempt to do so, and if we are able to report back with any certainty by the end of the day, we will do so.

CHAIRMAN JENSCH: Let's see what it looks like after you have some conference.

MR. LEWIS: Mr. Chairman, let me mention one other thing that follows up on a request I made yesterday, and also on Mr. Trosten's comment.

Mr. Trosten has referred to the fact that the company finds itself in somewhat of a difficult situation with respect to the whole cooling tower matter, and I suspect that this grows partly out of the presently-existing termination date of May 1, 1979.

It would seem that it would suit the purpose of all parties to the proceeding and, indeed, it would be the last remaining matter in the selection proceeding to have an adjudication as soon as possible as to whether the May 1, 1980 date is now the date to be replaced in the license.

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CHAIRMAN JENSCH: Yes.

I think Mr. Sack made a statement the other day, I don't have the transcript available to me at the moment; but we had the impression that if all necessary governmental approvals were obtained by January 1, 77, the date for termination of closed cycle cooling would be May 1, 1980.

Was that your position, gentlemen?

MR. SACK: I think that is right. The license has already been amended, so the date in the license by virtue of the December 1, 76 amendment is now May 1, 1980, consistent with the partial initial decision.

CHAIRMAN JENSCH: As to that you have no objection?

MR. SACK: I have no objection to that date as of now. Our position, of course, as I said, is if all regulatory approvals have been received, the partial initial decision says all regulatory decisions have been received, approvals have been received; as I mentioned before, we have filed exceptions to that.

CHAIRMAN JENSCH: Yes. As you know we used the language of the Court of New York to some extent indicating that the requirement for the procurement of approvals did not include zoning board approvals by the Village of Buchanan; and that is what we understood the parties had indicated was the principal remaining item for governmental approvals. And using the court determination in part we felt that you did

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have --

MR. SACK: That will be addressed in the exceptions.

CHAIRMAN JENSCH: Yes, well, in any event, as you have indicated the license dow now provide for May 1, 1980.

MR. SACK: Yes. Yes.

MR. BRIGGS: That license doesn't state May 1, 1980.

MR. SACK: Yes, it does, it says --

MR. BRIGGS: My copy of Mr. Read's letter, I don't see that it says anything like that.

MR. LEWIS: It does not. It does not.

CHAIRMAN JENSCH: I think there have been statements in the course of previous discussions that it did.

MR. LEWIS: We have a copy of the amendment here.

CHAIRMAN JENSCH: Assume for the moment, if it is not --

MR. SACK: If all regulatory approvals are received on December -- either December 1, 76 or January 1, 77, the date for termination of operation of once-through cooling is May 1, 1980.

CHAIRMAN JENSCH: You have no objection to that date being included within the license, is that correct?

MR. SACK: The objection is thelicense doesn't include the end part of my sentence.

MR. LEWIS: I can read the license amendment if it will clarify the matter. The license amendment was issued

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jrb12 1 December 1, 76, and it has a replacement paragraph 2(e)(1)(b)
2 which refers to what has taken place with respect to the
3 May 1, 79 date; and the last sentence of that new paragraph
4 is, the Commission has determined that the licensee, acting
5 with due diligence, has obtained all governmental approvals
6 required to proceed with construction of the closed cycle
7 system as of December 1, 1976.
8 Now, the license amendment that we issued, the
9 Commission issued, on December 1st, did not, per se, set
10 forth a new resulting termination date. Also it was our
11 understanding that indeed that probably would have been beyond
12 what the exact authorization of the partial initial decision
13 was. The partial initial decision did refer to the fact that
14 a supplemental initial decision would address the matter of
15 the termination date.
16 Now, it would be my hope at this point on the basis
17 of expression of views you have now from all of the parties
18 which appear to agree that on the basis of thepartial initial
19 decision May 1, 1980 does result; that the Board as soon as
20 possible issue that supplemental initial decision, and
21 clear up the matter of the termination date.
22 It would be the Staff's contention that upon that
23 further authorization to also amend the license to in fact
24 place the day May 1, 1980 in the license.
25 MR. SACK: Mr. Chairman, I correct what I said

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1 before. I did mischaracterize the license amendment; it does
2 not have the May 1, 1980 date. It seems to be implicit
3 by the language that Mr. Lewis just read. But I do not think
4 we should interrupt this proceeding, the extension proceeding,
5 any further.
6 I think there is some strange dichotemy between
7 Mr. Lewis urging a rapid conclusion of preference proceeding,
8 and saying he doesn't know quite when he can tie up this
9 loose end for the extension proceeding. I think we ought to
10 proceed with the extension proceeding.
11 CHAIRMAN JENSCH: Perhaps we can take it up further
12 when we hear from the Staff as to how soon they can get a
13 cost-benefit analysis for the FES in this proceeding.
14 Proceed with the cross-examination.
15 MR. TROSTEN: Thank you.
16 CHAIRMAN JENSCH: You had concluded, had you not?
17 MR. TROSTEN: All right, proceed.
18 Whereupon,
19 DOCTORS GECKLER & VAN WINKLE
20 resumed the stand as witness on behalf of Regulatory Staff and,
21 having been previously duly sworn, were examined and testified
22 as follows:
23 CROSS-EXAMINATION, Cont'd
24 BY MR. TROSTEN:
25 Q I have a few questions to ask you this morning,

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Dr. Van Winkle.

Were you asked to make a recommendation to the Nuclear Regulatory Commission Staff whether the period of once-through cooling operation for Indian Point 2 should be extended to May 1, 1981?

A (Dr. Van Winkle) What I was asked to do was on the basis of my assessment of the incremental impact on the Hudson River ecosystem did to this two-year extension as balanced against what I saw as potential - potential benefits of, during this two years getting a chance to complete review of the ongoing analysis by ConEd, in particular, I was thinking of this January report which we heard of quite some time ago, as well as the ongoing work we were doing at Oak Ridge.

In that context, yes, I was asked. I guess it was more in the framework of a negative side: was there cause for objecting or not granting this two-year extension, to which my response was: no, there wasn't.

Q There was no objection to granting the two-year extension.

A No.

Q Thank you.

On page 5-1 of the FES there is a statement there, it is the Staff's opinion that more date of the type collected from 1973 through 1975 will not further

1 substantially improve the biological data base available to
2 the Commission or any other parties.
3 This appears in Section 5.2. Dr. Geckler, did you
4 write that section, or did Dr. Van Winkle write it?
5 A (Dr. Geckler) I believe Dr. Van Winkle.
6 Q Dr. Van Winkle, is that correct, Dr. Van Winkle
7 was the author of this?
8 A (Dr. Van Winkle) This is the first sentence after
9 the quote?
10 Q Yes, sir?
11 A That is correct; I wrote that.
12 Q All right, sir.
13 I am somewhat puzzled, Dr. Van Winkle, by the choice
14 of the years 1973 through 1975, and the reason why I am
15 puzzled is that the 1975 data have not yet of course been
16 presented; and the purpose of this application is to allow
17 an opportunity to present the 1975 data, and to have them
18 evaluated by the NRC.
19 So could you tell me what you had in mind when
20 you say that more data of the type collected from 1973 to 1975
21 will not substantially further improve the data base?
22 We are not proposing that the Commission allow us
23 to collect more data beyond 1975 for purposes of this evalua-
24 tion; what we want to do is present the 1975 data.
25 And could you tell us what you had in mind when

1 you wrote this statement?

2 A This is in a section entitled Greater or Lesser

3 Extension of Time.

4 Q Yes, sir.

5 A As I remember, the intent here was to head off

6 the possibility that we saw great value -- Staff might perceive

7 great value in okaying a greater extension of time than

8 two years.

9 Q I see.

10 And this was not intended to minimize or indicate

11 a lack of the value of reviewing the data collected from

12 1973 through 1975?

13 A No, it was not.

14 Q Thank you.

15 Now, Dr. Van Winkle, I have a couple of questions

16 I would like to ask you that relate to the nature of the

17 assessment that the Staff performed in preparing the Final

18 Environmental Statement, with particular reference to the

19 contrast between the assessment performed in this evaluation

20 and the assessment performed in the Indian Point 3 FES.

21 That is the context in which I am asking these questions.

22 Now, on page 3-1 of the FES, there is a statement

23 that reads as follows; it's Section 3.2.1; in this section,

24 the incremental impact on the Hudson River aquatic biota

25 of a two-year extension of operation of Indian Point Unit No.

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2 with once-through cooling is considered. In making this assessment the Staff has relied heavily on the FES for Indian Point Unit No. 3 which represents a revision of the Staff's earlier assessment, FES IP-2, with respect to aquatic impacts and takes into consideration the results of the Applicant's research program through 1973, and part of 1974. However, in its present assessment the Staff has supplemented the Indian Point No. 3 FES wherever appropriate based on new data and analyses submitted by the Applicant in its environmental report."

Did you write that, Dr. Van Winkle?

A Yes.

Q Fine.

Now, in the last sentence of the quotation I have just read to you there is a footnote 8, and you refer to several reports; Footnote 8 refers to the Environmental Report which was submitted, Supplement 1 thereof and Supplement 2, which is the Texas Instruments' multi-plant report.

Now, when you referred in the last sentence of that quotation to the new data and analyses which you considered in your supplemental assessment, are you referring essentially to the materials in Reference 8?

A Yes.

Q Thank you.

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1 Dr. Van Winkle, would you say that this Draft
2 Environmental Statement had a high priority or a low priority
3 in terms of the other work for which you are responsible?
4 MR. LEWIS: Objection. I fail to see the relevance
5 of priorities established at Oak Ridge National Laboratory
6 for Dr. Van Winkle.
7 CHAIRMAN JENSCH: Would you care to speak to that?
8 MR. TROSTEN: Yes.
9 The reason I will speak to that, the reason I am
10 asking this question is I am trying to establish whether
11 the effort that was put into this evaluation was really
12 a significant -- by virtue of the amount of budgets, say,
13 Dr. Van Winkle had available to him, or the directions he
14 received from NRC, whether he was to really perform a careful
15 analysis of the new information that was available to him;
16 or whether by virtue of his directions from the Staff he was
17 really permitted to perform a relatively limited -- what
18 I would characterize as a "low priority effort" in this
19 regard.
20 CHAIRMAN JENSCH: Would your next step be how was
21 he feeling when he wrote it? Did he take vacations on the
22 schedule?
23 MR. TROSTEN: No.
24 CHAIRMAN JENSCH: You really want to find out what
25 he did, and this is the document. I really think your

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primary concern is done. And if he did it in ten minutes or ten years or ten weeks, what difference does it make? You analyze the work product.

MR. TROSTEN: Well, I think that the importance of this here is that we have presented a great many data and analyses to the Board; and the only thing that the Staff has presented in this proceeding to contradict what we have presented is in response to our request for this extension to May 1, 1981, is the FES. And if it is true, as I believe is the case, that the priority that was assigned to this job was low, and that the Oak Ridge National Laboratory really wasn't given the task of doing a very extensive job, I think this is important for the Board to be aware of.

CHAIRMAN JENSCH: Objection sustained. Please rephrase the question.

MR. TROSTEN: It's been sustained.

MR. LEWIS: There's no question.

BY MR. TROSTEN:

Q Referring back to this quotation, Dr. Van Winkle, you say that in making this assessment, the Staff has relied heavily on the FES for Indian Point Unit No. 3.

Would you agree that there have been significant new data presented to the Staff as a result of the Applicant's research program since the Staff completed the FES on Indian Point Unit No. 3 in February 1975, that bear on the

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assessment of impact of once-through cooling on the Hudson River.

MR. LEWIS: Objection, Mr. Chairman. My objection is based on the following::

This line of questioning was led off with a reading of a quotation from the FES, the last sentence of which is now in the record; it just said, however, in its present assessment the Staff has supplemented the Indian Point 3 FES wherever appropriate based on new data and analyses submitted by the Applicant in its Environmental Report.

And there is a question as to whether that is the reference to the June 1975 submittal and its supplements; and the answer was yes.

It seems to me that's the answer he's looking for again. I think the question has been asked and answered.

MR. TROSTEN: I don't think it's been asked and answered at all, sir. I feel that it is important for Dr. Van Winkle to state his opinion, whether indeed there have been important new data submitted through the Applicant's research program since the completion of the FES in February 1975, because, if there have been important new data presented to the Commission, then it means these are data which should ultimately be considered by the Commission in its deliberations on this matter.

CHAIRMAN JENSCH: What you are asking is what are

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the new data that he did rely upon in addition to the FES for Indian Point 3?

MR. TROSTEN: No, I am simply asking if he believed on the basis of familiarity with the Hudson River Research Program that there have been important new data submitted to the Staff --

CHAIRMAN JENSCH: You would like to know what those data are?

MR. TROSTEN: No, I would like to know what his opinion is. I know what the data are. I want to know what his opinion is of the significance of those data.

CHAIRMAN JENSCH: Objection overruled.

MR. TROSTEN: I'd like to have the question read back.

(Whereupon, the reporter read from the record, as requested.)

WITNESS VAN WINKLE: There are two timeframes within which I could answer that question; one is the current time-frame, theindications that are contained in your recent testimony, I feel that was perhaps not the proper context since I have not reviewed those data. There are obviously some indications that are germane to the question at hand.

With reference to the new information that I had at hand at the time I wrote the information contained in this FES, which was primarily answered previously -- the Texas

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1 Instruments' multi-plant report -- our opinion was that there
2 was new information in there, and which I commented in the
3 FES on page 3-6 with reference to compensation, Section 3.2.2.3;
4 the Applicant's presentation of evidence of compensation in
5 the Hudson River striped bass population is the most
6 interesting new information to come out of the Applicant's
7 research program since issuance of the Indian Point Unit No. 3
8 FES.
9 That is an example of perhaps an affirmative answer
10 to your question.
11 I think it is appropriate to point out again, as
12 I did yesterday, we were carrying out this assessment
13 essentially six to eight months after we had completed the
14 Indian Point 3 statement; and it was my judgment not that it
15 was stipulated to me by people above me, it was my own judgment
16 that it was not worth while to take a complete brand-new
17 look at all the issues we had just been through; that there
18 was not that much new information that merited another
19 thorough evaluation.
20 What I did was to go through that multi-plant
21 report looking in particular for one of two things: either
22 things that were really new, not just more data in the same
23 areas we had already been over; compensation would be an
24 example. Second of all I went over with respect to, are there
25 any indications here of areas where the data are indicating

1 the impact might be more serious than we felt at the time of
2 the Indian Point 3 statement; and there were not any such
3 cases.
4 BY MR. TROSTEN:
5 Q One more question on this point: after you
6 completed the assessment which you described which was, as
7 you say, six to eight months after the publication of the
8 Indian Point 3 FES in February, did you, subsequent to
9 completion of your work, in the drafting of this statement
10 I assume perform any other major analysis of the information
11 that was available in the Hudson River research program?--
12 as part of this application, I mean?
13 A (Dr.VanWinkle) There are none that we directly
14 did for this purpose, or that are reflected in the FES.
15 Q Thank you.
16 On page 6-1 of the FES there is a statement that
17 the -- which appears in Section 6.4.1, Benefits -- did you
18 write the section on benefits, Dr. Geckler?
19 I seem to recall yesterday you said you did?
20 A (Dr. Geckler) Yes.
21 Q All right.
22 You see the sentence at the very end of that
23 paragraph says, "The one-year extension would provide an
24 opportunity for the review and evaluation of all available
25 information."

jrb24 1 Now, who did you have in mind performing that
2 review evaluation; what did you mean by that?
3 A I had primarily in mind a Staff review, but I
4 was not limiting it to that.
5 Q Did you take into account when you said that that
6 this period would be adequate for a review and a Staff
7 determination by the ASLB of the Commission?
8 A Would you repeat that, please?
9 Q When you wrote that sentence did you have in mind
10 that this period would also be adequate for review of avail-
11 able information if necessary by an Atomic Safety and
12 Licensing Board of the Commission?
13 A No.
14 Q Just one further question on this statement: when
15 did you have in mind that this review and evaluation would
16 take place? What period -- during what period would this
17 review and evaluation take place?
18 A During this past year.
19 Q During the year that started when and ended when?
20 A This calendar year.
21 Q Calendar year 1976?
22 A Yes.
23 Q Then the one-eyar extension that you referred to
24 does not provide an opportunity for review of the January --
25 so-called January 1977 report?

A No.

CHAIRMAN JENSCH: While there is a pause, did you contemplate what is now known as the January 77 report would have been out earlier than it appears now would be possible?

WITNESS GECKLER: I didn't have an opinion one way or the other as to when it would issue. I had a feeling of uncertainty about it; therefore, I didn't pay too much attention to its availability.

CHAIRMAN JENSCH: Thank you.

BY MR. TROSTEN:

Q Dr. Geckler, on page 3-9 of the FES there is a CPM chart; do you see that?

A (Dr. Geckler) Yes.

Q It's kind of hard to read, but do you notice that the CPM chart shows the presentation of a report on January 1, 1977; do you see that at the very end?

A No. 48?

Q I think so.

A Yes, I see it.

Q Now, it is correct, is it not that that -- you know the reason it says QLM is because that is an old chart; it's a designation that actually has been used since February of 1973. Isn't that right?

A Approximately.

jrb26 1 Q Thank you.

2 So you were aware, then, were you not, that this

3 report was scheduled perhaps for the past four years for

4 January 1, 1977?

5 A Not for the past four years.

6 Q Well, it was February 73 when the testimony was

7 first offered, almost four years?

8 A I was not on the case then.

9 Q Oh, I see.

10 All right, Dr. Van Winkle, I have a few questions

11 I would like to ask you about the Applicant's research

12 program; and this is Section 3.2.5-1 on page 3-7 and 3-8.

13 Now, you drafted the section on the Applicant's

14 description of its research program in the earlier drafts

15 of that; isn't that correct?

16 A (Dr. Van Winkle) Yes.

17 Q Now I have in front of me a draft version of

18 the section which was furnished me by your counsel; and I

19 am going to read sections of it to you and I am going to ask

20 you whether you agree with certain of the sections that

21 appear.

22 CHAIRMAN JENSCH: Will you tender the document to

23 him after you have read it?

24 MR. TROSTEN: Certainly, let me get another copy of

25 this so he can have it.

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(Pause.)

(Handing document to witness.)

BY MR. TROSTEN:

Q Now, in the first sentence it discusses more fully the Indian Point FES and the Staff's position with respect to the Applicant's research program; that in spite of certain difficulties the program has the potential (1) of resolving, at least partially, several of the important issues in controversy; and (2) of evaluating alternative mitigating measures besides closed-cycle cooling systems, such as culturing and stocking Hudson River striped bass and taking measurements to reduce fish impingement.

Now, there was a citation to the Indian Point Unit 3 FES which I did not read into the record.

Do you agree with that statement at this time?

I realize this was written some time ago, and I just want to know if you agree with that statement?

A (Dr. Van Winkle) Yes.

Q Continuing on now to the next sentence, "The Staff divided the issues in controversy with respect to the Hudson River striped bass population in three categories on the basis of the ability of the Applicant's research program to resolve these issues by January 1, 1977. These categories and issues are described below. Then you quote from the Indian Point FES. And if you'll give me a moment, I will find the page on

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which it was quoted. Just bear with me a moment.

(Pause.)

MR. SHEMIN: 5-1?

MR. TROSTEN: Page V-210.

MR. LEWIS: Have you two copies? Could you provide Dr. Van Winkle with one?

MR. TROSTEN: Surely.

(Handing document to witness.)

BY MR. TROSTEN:

Q Now, you quote from page V-210, and there are the issues, A-1, and then B-1 through 5, then C-1 and 2; this appears in the Indian Point FES page 5-2-10 and 5-2-11. Then you continue on on the next page of the draft.

And I am going to read from the typewritten version here rather than the version that has some handwritten changes that are marked into it. Do you see what I mean?

A (Dr. Van Winkle) Okay.

Q It says, useful new information has been received from the Applicant since completion of the Indian Point Unit No. 3 FES relating to Issue B-1. And then you cite NYU, December 1974 F factor at IP, and to issues B-2, B-3, and C-1. Then you cite TI multi-plant report.

Now, do you agree -- continue to agree with that assessment I just read to you?

A Yes.

Q The next sentence reads, new information relating to issues A-1, B-4, B-5, and C-2 is anticipated but has not yet been received.

Do you continue to agree with that sentence?

A Yes.

Perhaps it's a little out of date, I suspect, in some areas.

Q Yes. In other words, if I understand what you are saying is you wrote this sentence in, say, the late fall of 1975; and perhaps there has been more information that has come in since that time. Is that what you mean?

A Yes.

For instance yesterday or the day before we received a report on this topic which I feel has some degree of influence.

Q I see what you mean.

Now I am going to continue reading the next two sentences in summary; the Staff's position is that the Applicant's research program already has improved to a considerable extent the scientific bases for assessing the impact of Indian Point on the aquatic ecosystem and on the striped bass population in particular.

Do you agree with that sentence?

A Yes.

Q And the last sentence here is, furthermore based on

1 the Staff's assessment the results from the Applicant's research
2 program have tended to indicate that the potential impact of
3 Indian Point on the Hudson River aquatic ecosystem and the
4 striped bass in particular is no greater than or not as great
5 as the Staff originally forecast in 1972 in the Indian Point
6 Unit No. 2 FES.
7 Do you agree with that?
8 A Yes.
9 Q Now, turning to the next page -- you give two
10 examples of the results having to do -- through plant mortality
11 of striped bass and ichthyoplankton at the intake; those are
12 the two examples you cite.
13 You go to the next page and cite the following; the
14 staff expects that by January 1, 1977 the Applicant's research
15 program may provide additional relevant results particularly
16 along the lines of comparing years and analyzing and synthesiz-
17 ing the vast amounts of data which have been collected both
18 prior to 1972 and particularly since 1972.
19 Do you agree with that?
20 A Yes.
21 Q The last sentence reads, the proposed extension
22 would allow the Applicant to complete its original five-year
23 research program and would allow all parties to reassess the
24 basis for the closed cycle cooling requirement for Indian
25 Point Unit No. 2.

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Now, my question to you about this last sentence is do you believe the results of Con Edison's research program which will be presented in the report to be submitted in January would be of substantial value in reassessing the basis for the closed-cycle cooling requirement for Indian Point 2.

A Would you repeat that question?

Q Yes.

Do you believe the results of Con Edision's research program to be presented in the report to be submitted in January would be of substantial value in reassessing the basis for the closed cycle cooling requirement for Indian Point2?

A From my point of view, yes.

Q Thank you.

I have a few more questions for Dr. Geckler.

CHAIRMAN JENSCH: Proceed.

BY MR. TROSTEN:

Q Dr. Geckler, would you turn to page 7-4 of the FES andyou see on the top of the page there is a subparagraph (2)?

A (Dr. Geckler) Yes.

Q Did you write that?

A I do not believe so.

Q You don't believe so. Well, let me check.

A (Dr. Van Winkle) I wrote that paragraph.

Q You wrote that? Let me just ask you this: I am

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1 focusing in particular on the sentence, the next to the last
2 sentence in that paragraph, which reads, in a decision of this
3 imporance the staff has a responsibility to base its decision
4 on the most complete and scientifically sound analysis that
5 can be made within an acceptable timeframe and without incurring
6 unacceptable incremental damage to the environment.
7 What did you mean by the phrase "an acceptable
8 timeframe"?
9 A One moment.
10 What I am looking for is the sheets I read from
11 yesterday initially; I don't find them.
12 Q All right, sir; do you have the sheets you read from
13 yesterday?
14 A No, not those, right at the very start, right when
15 I was sworn in.
16 Q Would you like to look for them? We can defer that
17 question and maybe after a break you can find those papers;
18 let us come back to that.
19 A Okay.
20 Q Dr. Geckler, do you agree, Dr. Geckler, that a
21 benefit of granting an extension to May 1, 1981 of once-through
22 cooling at Indian Point 2 is that it preserves the opportunity
23 for a review by the Staff in an ASLB if necessary of the data
24 to be presented in January 1977 prior to the time an irreversible
25 commitment is made to a closed-cycle cooling system for

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Indian Point 2?

A (Dr. Geckler) It would be a benefit.

Q You say it would be a benefit?

A Yes.

Q Thank you.

Dr. Geckler, I would like you to recall your testimony of yesterday concerning the bases upon which you made your decision and the fundamental process that you went through in preparing and writing the FES.

Now, as I recall your testimony yesterday it was that unacceptable environmental damage would not result from an extension of once-through cooling at Indian Point 2 to May 1, 1981; is that correct?

A That is correct.

Q Now, Dr. Geckler, did the letters commenting on the Draft Environmental Statement from the Environmental Protection Agency or the Department of the Interior, or the Department of Environme ntal Conservation, which you mentioned yesterday, contain scientific data such as in that serious environmental harm would occur to the fishery during the extension of once-through cooling to May 1, 1981?

A As I recall there were no numerical data.

Q So in other words, Dr. Geckler, the comments of the Environmental Protection Agency and the other agencies I mentioned offered argument and opinion rather than data;

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is that correct?

A Yes.

Q So is it then correct, Dr. Geckler, that the NRC staff changed its recommendation from the DES in which you recommended once-through cooling be authorized at Indian Point 2 until May 1, 1981, to the FES in which you recommended that once-through cooling be authorized only until May 1, 1980, were not based on your view that there would be unacceptable harm caused to the environmental during the additional year's extension, but, rather, on the basis of the opinions and argument offered by the Environmental Protection Agency, the Department of Environmental Conservation and the Department of the Interior?

MR. LEWIS: Objection.

Yesterday in response -- yesterday as part of this direct case Dr. Geckler outlined the bases for the Staff's final position; and I believe that on that basis that there is in the record a statement as to what the various bases were, among which was iterated the EPA letter.

Now, I think that's already in the record. I am not quite sure what more Mr. Trosten is looking for.

MR. TROSTEN: This is my last question of Dr. Geckler.

CHAIRMAN JENSCH: I think there is not a fair premise in the question. I think Staff counsel has indicated that

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this witness previously indicated there was a complexity of considerations that altered his view in the DES; and I think that your question may have unintentionally not been a fair statement of his answer.

Objection sustained.

BY MR. TROSTEN:

Q You are simply standing, then, Dr. Geckler, on your explanation for the basis of your action as you testified yesterday?

A (Dr. Geckler) Yes.

MR. TROSTEN: Just one moment, Mr. Chairman.

(Pause)

MR. TROSTEN: I have no further cross of the Staff witnesses at this time.

As I reported yesterday, Mr. Chairman, Mr. Sack will now cross-examine.

CHAIRMAN JENSCH: Proceed.

MR. SACK: I am being joined now at the counsel table here by Ms. Joyce Davis of the Con Edison law department and Dr. Thomas Angler of the staff of LMS.

BY MR. SACK:

Q Dr. Lawler, will you look at the FES, page 3-3, the figure 3-1; does this figure represent the NRC's Staff's best estimate of the impact of the Hudson River power plants on the populations of striped bass?

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1 A (Dr. Van Winkle) It represents an estimate in
2 particular it is an example that was taken directly out of
3 the Indian Point 3 FES where it was Figure 5-13 on page 5-160.
4 Now, the curves, the figure there, and the figure
5 here are not identical. The difference is that there has been
6 an additional curve added to this figure to evaluate the
7 79 versus 81 alternative; but the sets of parameters that
8 were input to this model were deliberately chosen to be
9 consistent with the illustration we had used in Chapter 5
10 of the Indian Point 3 FES.
11 It should be interpreted as an estimate, not a
12 best estimate, which was not something we presented in the
13 Indian 3 statement; and it is not something we are attempting
14 to present here.
15 Q In other words, you are saying this was not the
16 best estimate either as of the time the Indian Point 3 FES
17 was prepared, nor as of the time this FES was prepared?
18 A We do not present things in terms of a best estimate,
19 but what we have consistently endeavored to do was to show
20 the range of impacts that would be forecast depending on
21 the values that you put into this model for various parameters
22 for all of which there is some uncertainty about.
23 Q Would you consider this a valid estimate?
24 A I have difficulty with the word "valid". It's an
25 estimate I felt comfortable enough with that, you know, we

1 included it here, and we included it in Chapter 5 of the
2 Unit 3 statement.
3 Q I don't intend to be tricky or anything. The Staff
4 has taken the position that their estimate of damage is
5 sufficient to warrant closed-cycle cooling. Where would I
6 find that estimate on which you made that determination?
7 A Well, this goes back as far as I am concerned to
8 the statement I made right after being sworn in yesterday
9 I belive I quoted from page -- in this present FES -- page
10 3-6.
11 Let me first back up and say this figure is relevant
12 to the section in this FES entitled Incremental Long-Term
13 Entrainment Impact on the Hudson River Striped Bass population.
14 Now, our final concluding statement in respect to
15 that analysis and with Figure 3-1 in front of me, however,
16 the striped bass population projection from the Staff's life
17 cycle model indicates to the Staff that the incremental
18 long-term impact on the striped bass population due to the
19 requested extension of time is negligible.
20 So what I am calling to question is your characteri-
21 zation that -- which Dr. Geckler and myself addressed
22 yesterday, is the basis of the change from the DES to the
23 FES was the environmental impact was unacceptable.
24 Q We are not challenging that. We are trying to probe
25 the analysis that says that the -- that really there is two

1 phases to it, that is the long-term impact is not acceptable
2 and that there is nothing that we can show, or virtually
3 nothing to show that we can change that impact. Now, some-
4 where, if that position is grounded in the analysis, somewhere
5 either in the Indian Point 3 FES or another document
6 -- I guess you reference the Indian Point 3 FES, somewhere in
7 the Indian Point 3 FES there must be a statement of what
8 that environmental impact is that first of all requires
9 closed cycle cooling and secondly is sufficiently established
10 that it is not going to be changed by further information.
11 MR. LEWIS: Mr. Chairman, I object to this
12 question for the following reasons:
13 I think that it goes beyond the scope of what this
14 proceeding is. I think the question of whether or not
15 there is data which establishes the need for closed-cycle
16 cooling is not the question in this proceeding; and therefore,
17 I think -- I don't think the data on which the Commission's
18 decision to require closed-cycle cooling was based.
19 MR. SACK: The fundamental, the most critical
20 aspect of this proceeding is the Staff's conclusion that
21 data will not change their mind, that they have enough
22 information to determine closed-cycle cooling is required,
23 and that our research program and this material we are going
24 to submit shortly will not change their mind; and there is
25 no reason to hold up once-through cooling, that decision, for

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that information. And that is the guts of the case.

So we were trying to lay the groundwork of the possibilities which might make that decision change.

Now, first, before we can start with that, we have to find where they have stated the environmental impact will be, and then we can discuss factors which might make that change. But -- so that -- what I am trying to do is find out where that impact is stated, not to prove whether it is true or correct; I am not going to get into that.

But I am going to examine what it would take to change the assessment, because that is the critical item in this proceeding, is that the Staff has said they do not see any possibility of changing that assessment.

MR. LEWIS: Mr. Chairman, I object.

MR. SACK: Let me rephrase the question.

BY MR. SACK:

Q Where do you believe this environmental impact is stated?

CHAIRMAN JENSCH: What are you talking about?

MR. SACK: The environmental impact on the Hudson River of power plants on the striped bass populations that supports the decision that closed-cycle cooling must be installed.

MR. LEWIS: Mr. Chairman, let me make a suggestion: I think that if it is a question of Dr. Van Winkle having to

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go to the Indian Point 3 FES to find pages where the Staff's case is summarized, it may be very difficult. I really don't know what is the most comfortable way for Dr. Van Winkle to address this question is. If it's possible for him to summari æ the Staff's position from the FES on Indian Point 3 perhaps that would be the way.

But I think it would be very difficult for him and very tedious for him to do it right here and now, to go through that very large document and find the appropriate statements.

END 1 BT fls

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CHAIRMAN JENSCH: Well, I have a problem with the questions. They seem to talk about where is the assessment that shows that closed-cycle cooling is required. I think, as Staff counsel pointed out, that is not the issue here.

I think we're trying to analyze what data did the Applicant to bring in to ask for an extension of the once-through cooling until May 1, 1981. I think that analysis is what we should really focus on.

MR. SACK: Well --

MR. BRIGGS: Excuse me, Mr. Sack. I'd like to make a comment on this, too, and maybe you can answer both of us.

It seems to me that Dr. Van Winkle has said that he normally calculates a range of effects, and this one that he shows here and the one that you referred to is the one that he's comfortable with.

Now, do you need to know exactly what the best estimate is, or are you satisfied with the one that's comfortable for him?

MR. SACK: That's very helpful, Mr. Briggs.

BY MR. SACK:

Q. Is that correct, that you're comfortable with this figure that we should discuss as a typical assessment?

A. (Witness Van Winkle) The reason for selecting this one to put in this FES, as much as anything else, is that it was one that had been described as an example in considerable

blt 2

detail in the Unit 3 Statement and therefore we could just reference the Unit 3 Statement without repeating a fair amount of the description.

Q. All right. Let me proceed, using this in that context as an example, with the understanding that this is not your view of the best estimate. It's simply an example. Is that correct?

MR. LEWIS: Mr. Chairman, Dr. Van Winkle stated that he does not engage in making a best estimate. His approach is that this is an estimate, an estimate with which he feels comfortable.

I don't think it's necessary for him to continue to characterize his understanding of what the table represents.

CHAIRMAN JENSCH: I think he described it as the values used for percent reduction. He has given the scope of this graph in the text of the FES.

MR. SACK: Let us proceed.

BY MR. SACK:

Q. Looking at this figure, is it correct that the relative positions of the curves relate to the incremental impacts on the striped bass population with and without cooling towers of the solid line compared to the dotted line?

A. (Witness Van Winkle) The dotted or dashed line is for once-through cooling at both Indian Point Units 2 and 3 for the lifetime of both units. And, as the caption says,

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the solid line is if once-through cooling were installed at Indian Point 2 in '79, May 1, '79. The dashed line is if it was installed May 1, 1981.

Q. I think for purposes of our discussion this morning we can exclude the dashed line. I'm not getting into that.

The absolute positions with respect to the 0.5 level of relative yield relate to the possibility of irreversible damage, does it not?

A. This is what we selected as a cutoff, a somewhat arbitrarily selected cutoff line, that we would use in developing an index of risk of irreversible damage.

Q. If either or both of those relative or absolute positions were to change significantly, might your evaluation of the impact on the striped bass population change?

CHAIRMAN JENSCH: How much of a change is "significant" in your assumption?

MR. SACK: I assumed that a significant change were not going to come.

CHAIRMAN JENSCH: Can you put a figure on that classification? How many points do you have to have to constitute a significant change?

MR. SACK: I would leave that to Dr. Van Winkle's judgment. I'm just saying that if he saw what he would consider a significant change in the relative or absolute, or both the relative and absolute, positions, would that change

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his evaluation on the impact on the striped bass population.

WITNESS VAN WINKLE: I'll go back to the way I previously characterized the way we approach this work.

We will carry out -- we will generate a number of figures of the type that are on page 3-3. For example, in the Indian Point 3 FES, on pages 5-160 and 5-161, we had two, one of which I indicated is basically the same set of input parameters that were used here on page 3-1.

Now, the one on page 5-161 is a case where a different set of parameters was used -- in particular, the distributional f factor was .5 as opposed to being 1.0 in the figure on 5-160.

Now, in one case all of the curves drop below this .5 relative yield line. In the other case the base design with once-through cooling at both Indian Point Units 2 and 3 drops just below the .5 line for what looks like slightly over 10 years.

The two alternative configurations that are considered, neither one of them drops below that line.

What I'm indicating is that we might have fifteen or twenty such cases, some of which are below, some of which are not below this cutoff line of .5 for relative yield. And our assessment is based on looking at this entire set of graphs, not relying on any particular one, and reaching a reasoned judgment on how concerned we should be about the

blt 5

1 risk of irreversible damage.

2 BY MR. SACK:

3 Q Would you have an opinion at this time as to which

4 is the more realistic curve, the one on page V-160 or the

5 one on page V-161 that you've just referred to? Or would you

6 think it would be somewhere in between?

7 A (Witness Van Winkle) At this point, we are re-

8 ferring to an analysis that was done in 1974, early '74 or

9 mid-'74. I have seen enough new data that certainly relates

10 to some of the key parameters that go into this model, like

11 the distributional f factor maybe even more so the cropping

12 factor, that, you know, I would just like to not answer your

13 question and say that we would have to, you know, obviously

14 reassess the whole family of curves.

15 In general, if you put in smaller distributional

16 f factors and smaller cropping factors, the power plant impact

17 would be less, and if you put that in these life cycle models

18 the curve will drop down to a lesser extent.

19 Q You just described a series of curves of a similar

20 nature. How many of those curves went below the 0.5 level

21 that is indicated on Figure 3-1?

22 CHAIRMAN JENSCH: I think you've got to have the

23 documents before him, rather than leaving it to recollection.

24 I think, if you have a particular interest in the

25 workpapers or whatever they may be containing these other

blt 6

calculations with the curves, you should make a request for them and give it to Dr. Lawler. I don't think you can get it right off the cuff in the course of examination.

MR. SACK: All right. I'll withdraw the question.

MR. LEWIS: Mr. Chairman, I have an objection to this line of questioning which has been building in me. I'm now going to state it.

Very interestingly, at the outset of this discussion Mr. Sack indicated that the two curves he's interested in are the one for the solid line, which is for the termination of once-through cooling May 1, 1979, as compared to the dashed line or the dotted one for the life of the plant operation with once-through.

He said for purposes of his discussion he was not interested in the dashed line, which was the one representing the requested extension of 2 years.

Well, to me that is the line in question in this proceeding. Now we seem to be getting very deeply into a discussion that is an analysis of a question which I earlier stated in my opinion is not a question in this proceeding, namely, once-through cooling versus closed-cycle cooling.

I think we're getting very deeply into an area that I consider beyond the pale of this proceeding.

(The Board conferring.)

MR. BRIGGS: Mr. Lewis, it seems to me that Dr.

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Van Winkle has introduced the families of curves. The discussion was initially based on these two curves, and then Dr. Van Winkle introduced the families of curves; and for his purposes that may be very fine.

It seems to me, also, as long as the questions are related to what factors cause these curves to vary -- as Dr. Van Winkle indicated, f factors and cropping factors can cause these curves to vary -- that this is not really an attempt to determine whether closed-cycle cooling was required or not, but just an attempt to find out what factors are involved and do the data, or do the new data, affect these factors. It seems to me that questions along that line are proper.

MR. LEWIS: I find that a very useful clarification. I hope that the questioning will pursue that line.

CHAIRMAN JENSCH: I think it's important to bear in mind. I don't think you can ask him to make the calculations here, but, as Mr. Briggs indicated, what are the factors that would be chosen in his judgment.

MR. SACK: That is correct, Mr. Briggs. That's what I'm trying to do. Each point has to have a little preliminary, and it's the preliminary that Mr. Lewis somehow finds objectionable. Maybe I can handle this another way.

BY MR. SACK:

Q. Would you characterize the Figure 3-1 as the most

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conservative of these families of curves?

CHAIRMAN JENSCH: What do you mean by "conservative"? We don't want to mix that up. Is it the worst or the best for the Applicant, or what?

BY MR. SACK:

Q. Were there any curves that fell below the dotted curve in Figure 3-1?

A. (Witness Van Winkle) There were parameter combinations that we examined and reported on in the Indian Point 3 FES, Appendix B, that were definitely more extreme than the choice I made for this present FES.

One word I might add to put this analysis in the context of why I was doing it, which was to look at that shaded area.

Now, I had said earlier that I selected this one because it was one that was well documented in the Indian Point 3 Statement to which I could refer. We also did a comparable analysis with a set of parameters which generated the curves that are on page 5-161 in the FES. The results of those two analyses were that the shaded area is somewhat greater in this Figure 3-1 that was included in this FES.

The reason it was selected is that we had arrived at the conclusion that the incremental impact was negligible, so I had picked this case as, you know, being one that was going to give an even bigger area, which I was still judging

blt9

to be a negligible incremental impact.

Q. Thank you, Dr. Van Winkle.

I think you said a few minutes ago -- you mentioned the data on entrainment mortality.

It is my understanding of what you said a few minutes ago that the data that we have submitted on entrainment mortality since the Indian Point 3 FES was prepared indicates to you that lower numbers for entrainment mortality might be more realistic. Is that correct?

A. I have not reviewed the data or the analyses that resulted in the values that appeared in the testimony submitted at the start of the hearing, so all I can say until I do so is that it's obvious that NYU and LMS apparently are interpreting those data to indicate that the cropping factor for essentially all the life stages is more than the values that both LMS and Oak Ridge were using back in '73-'74.

Q. If your analysis of the data and the results of the 1974 and '75 studies showed a different figure for entrainment mortality, would you change the input values to the model?

A. We certainly would, although, again, we would always endeavor to use a range of parameters, especially these key parameters, that the models are particularly sensitive to.

Q. Does the report on net-induced mortality lead you to think that the input values used in the present model for

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entrainment mortality might be high?

CHAIRMAN JENSCH: Excuse me. What report was that?

MR. SACK: That's the report on net-induced mortality.

MR. TROSTEN: We'll give you the exhibit number.

MR. SACK: It has been in Dr. Van Winkle's hands before this proceeding. I'm not sure exactly when.

CHAIRMAN JENSCH: Has it been identified in this record?

MR. TROSTEN: Yes, sir, it has, and we're going to identify it in just a moment.

MR. SHEMIN: Exhibit 14, I think.

MR. SACK: OT-14, I believe.

CHAIRMAN JENSCH: Your question is, do the data in that report affect his judgment?

BY MR. SACK:

Q The question is, does the report on net-induced mortality lead you to think that the input values in the present model for entrainment mortality might be high?

CHAIRMAN JENSCH: That's whose model? His?

MR. SACK: In his model, the input values he now has in the model that was used in the Indian Point 3 Final Environmental Statement. Are those input values perhaps high?

I'm not asking him for a new number; they just may

bltll

be high.

WITNESS VAN WINKLE: As long as we emphasize the word "may be" barring our carrying out our own independent analysis, yes.

BY MR. SACK:

Q. I'd like to focus on your factor f_I. The Table 3-1 on page 3-4 of the FES tabulates two sets of percentage reductions based on the use of two values of f_I.

Do you have any views as to which is the best value of f_I? Which is the more realistic -- maybe that's a better question. Which is the more realistic value of f_I?

A. (Witness Van Winkle) We carried out a fairly extensive analysis of the 1973 transect data that had been collected at Bowline, Lovett, Roseton and Danskammer -- not at Indian Point. We didn't have that. And we included that analysis as an appendix to the Indian Point Unit 3 Final Environmental Statement.

On the basis of that analysis, we selected the range of 0.5 to 1 as an appropriate range, but we felt there was too much uncertainty and variability problems with comparability of year-to-year efficiency and lack of organisms in the samples that had been collected to merit specifying a narrower range. So the .5 to 1.0 indicates the range within which, as of the time the Indian 3 FES was prepared, it indicates the range within which we felt the f_I

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1 value fell for all entrainment life stages at all power
2 plants.
3 Q. By using a range, do you believe that it is likely
4 that the factor is less than 1?
5 A. That's right. And, also, the other side of that
6 coin is that we would doubt if it's any less than .5. That's
7 not to preclude the possibility that it might be less than
8 .5. There may be cases where it could be greater than 1.
9 But our feeling is the .5 to 1 is a range where, based on the
10 data we have looked at so far, it's where we feel the real
11 value probably lies.
12 Q. I believe you previously described the curve that if
13 .5 had been used the curve, as I recall you said, would not
14 fall below the 50 percent figure.
15 A. The curve for once-through cooling at both Units
16 2 and 3, for the lifetime of both of those units, does fall
17 slightly below .5 for what looks like a period of 12 to 13
18 years.
19 The other alternatives that were considered in this
20 figure I've been referring to on page 5-161 of the Indian
21 Point 3 FES do not fall below the .5 line.
22 Q. If your evaluation of the 1974-1975 studies indi-
23 cated a factor for f_I of less than 1, would you revise the
24 inputs to your model?
25 A. What we will do is to reassess the question of f_I,

blt13

1 looking at the new data that are available to us at the time
2 of that assessment, and we will -- we expect to adopt the
3 same approach we have used before, which will be to find a
4 range which we feel is appropriate.
5 Q Do you assume in your calculations that f_I and f_c
6 were the same for all plants? And f_c is the entrainment
7 mortality.
8 A. For f_c we assumed that values were the same for
9 all the plants at that time. The only moderately reliable
10 data that we had was for Indian Point.
11 I believe both -- I know that we did, and I think
12 that also LMS had adopted the convention that these were the
13 best data, that we didn't see gross differences in the delta
14 t's or other stresses the organisms were going to be exposed
15 to going through the Bowline and Roseton Plants, and we used
16 the same values at these other plants.
17 Q Would it be more realistic, based on the data
18 collected at all these different plants in 1973, '74 and '75,
19 to use a different f_I and entrainment factor for each plant
20 than to assume that they are all the same?
21 A. I think that you're dealing here with the type of
22 data with which there is a great deal of uncertainty associated
23 with it. In the case of f_c, if somebody shows me one data set
24 from Roseton and another set -- or a set of f_c values from
25 Roseton and another set of f_c values from Indian Point and

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they're substantially different, I'm going to want to know what is there about the way those two plants operate that can possibly account for that difference.

If there is no apparent difference in the stresses for the organisms of going through the plant, I'd be inclined to think that maybe the differences are due to the differences in the way the data were collected.

In other words, I don't see that, you know, just because one plant is upriver of the other, if if essence the same types of organisms are going through these two plants, I don't see why their probability of mortality upon going through those plants is going to differ significantly.

Q. Are you familiar with the circulating water, the engineering aspects of the circulating water systems of each of those plants?

A. I'm familiar with the delta t's and passage times. I'm not familiar with the pressure changes.

Q. What about the f_I factor? If you saw data indicating differences for the different plants, would it be more realistic to use that figure?

A. I think the f_I question is a more legitimate question to ask in this context, where you might expect plant-to-plant differences.

Certainly Bowline is an entirely different arrangement from either Indian Point or Roseton, and the whole method

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of calculating f factors for Bowline is done differently.

So clearly I think the data sets for Bowline need to be treated separately and an estimate made to provide that on a separate basis.

For Roseton and Indian Point, it's less apparent that there are differences in the arrangement of the intake and the nature of the cross-section. So, again, if there were substantial differences in the f_I values at Indian Point and Roseton, I would be trying to think of some rational reason that might be accounting for such differences.

But beyond that, again I come back to the fact that there is considerable uncertainty associated with the type of data that is collected to calculate f_I values; and my own philosophy is to avoid trying to pin particular numbers on particular life stages at particular plants, because I think this tends to give an aura that there are real differences, when in fact you're dealing with a very noisy data set.

So this is the type of reasoning that leads me in the direction of looking at the plants separately. And if in fact the results indicate that Bowline really had an entirely different range of f_I factors, fine, then we would use a different set of f_I values for Bowline. But otherwise, if they're all sort of in the general range, then we would be inclined to just select a range and use that range for all life stages for all power plants.

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Q I'd like to turn the discussion to the compensation function in the young-of-the-year model.

Does your young-of-the-year model include a compensation function?

MR. SHEMIN: Excuse me. I'd like to revive Mr. Lewis' prior objection.

Dr. Van Winkle has testified he's taken a more extreme curve to exaggerate, if anything, the effect of the 2-year extension and has stated that even with that it's a negligible effect, and that's the purpose for which he included this particular curve in his FES for this proceeding.

Now, it seems we're going straight into the curve in the Indian Point 3 proceeding. I deliberately refrained from going into detail of the Applicant's presentation and all its reports from examining the substance of everything they have said, which would have in effect turned this thing into a preliminary proceeding on whether there should or should not be closed-cycle cooling.

By going into a compensation function, which, while developed by the Staff, was not even used for its predictions -- rather, they used a formulation which produced a compensation number -- I think we're going into just the theory of their whole case in the FES 3 Statement. I don't know where this is going to end if we start at this point.

MR. SACK: I think Mr. Briggs answered that

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statement before. I'm not going to determine whether this compensation function is right or wrong; I just want to establish that there is a compensation function, and then what factors might lead that to change.

CHAIRMAN JENSCH: I thought you were going a little farther than that. If you're limited to your last statement, I think that's appropriate.

MR. SACK: I only asked if the model includes a compensation function. I can't ask him how it changes unless we establish that it does.

CHAIRMAN JENSCH: I understood he had answered that previously. Will you restate your question?

The objection is sustained. Restate your question.

BY MR. SACK:

Q. Does your young-of-the-year model include a compensation function?

A. (Witness Van Winkle) Yes, it includes multiple compensation functions.

Q. Which empirical data were used for selection of the parameters and form of the function?

CHAIRMAN JENSCH: For what model or graph are you referring to?

MR. SACK: The compensation function in the young-of-the-year model.

MR. LEWIS: Are you referring to some section of

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1 this FES?

2 MR. SACK: The FES references the Indian Point

3 3 FES, where I believe this item is described in more detail,

4 but it is inherent in the material that's been presented in

5 the FES.

6 CHAIRMAN JENSCH: What pages are you referring to?

7 MR. SACK: What page of the Indian Point 3 FES?

8 CHAIRMAN JENSCH: No, for this proceeding, the FES.

9 MR. SACK: Page 3-4 contains Table 3-1 that has

10 the results of the young-of-the-year model. Now, that result

11 is taken from the presentation in the Indian Point 3 FES,

12 and there there was described a compensation function for

13 the young-of-the-year model that was based on empirical data.

14 I want to establish what data were used, and then

15 it follows what supplementary data could lead to a change in

16 that function.

17 CHAIRMAN JENSCH: Doesn't that show from the FES

18 3 report?

19 If you could find things in the FES 3 that you

20 think are important, can you refer particularly to it, rather

21 than have him try to go through it? I think this is the

22 point.

23 MR. SACK: I believe it was changed in an addendum

24 that was added to the FES.

25 CHAIRMAN JENSCH: Would you call his attention to

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that? I think the point is, as Staff counsel pointed out, you can't expect the witness to start going through FES 3 in its entirety.

I think the exception to which he has made reference in this FES, page 3-4, opens a line of inquiry. I think if you could find the portion of FES 3 that would be useful in that regard and direct his attention to it, we'll move along a little faster than we're now moving.

MR. SACK: Well, perhaps Dr. Van Winkle might recall what the source of his data is.

CHAIRMAN JENSCH: I don't think you should ask him to recall. If he lists two items and there are six involved, his answer is vulnerable.

WITNESS VAN WINKLE: If I might, I would say that the information you're looking for is in Appendix B, Volume 2, of the Unit 3 FES, where there was a description given of the conceptual basis for all aspects of the model, including the choice of the compensation functions, which I add again is not a single function. There were multiple functions.

I might also add that in both the Indian Point 3 FES and what was done in the FES we're focusing on now, that the compensation parameters in the young-of-the-year models, which is what you've been asking about, were selected so there would be no compensation.

In other words, if we look at Table 3-1 on page

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3-4, all of the percent reduction values that are given there in the last two columns are without any compensation.

We have two models, one of which is the young-of-the-year model and the second of which is the life cycle model.

BY MR. SACK:

Q. I will get to the second one.

CHAIRMAN JENSCH: Let him go ahead and give you the explanation. You may not have to ask him any questions.

Go ahead, Dr. Van Winkle.

WITNESS VAN WINKLE: We can incorporate compensation in either or both of those models. Our strategy at the time that the Indian Point 3 work was carried over to this FES was to put the compensation in the life cycle model through the fishing control function.

BY MR. SACK:

Q. So, if your evaluation of the further data on observed compensation indicated a different function, that there was some compensation that should be used in the young-of-the-year model, would you change the inputs to your young-of-the-year model?

A. (Witness Van Winkle) Though I'm very anxious to read your January 1977 report, my own judgment at this time is that all the empirical data that has been collected, whether it's on density-dependent growth, the stock-recruitment

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analysis or bluefish predation, at best is a suggestion that the compensation has been or is occurring in the Hudson River striped bass population. It is not going to provide us a handle on what values to select for parameters or how much compensatory reserve there is in terms of actually putting a number on it.

In other words, there is this gap here between empirical data suggestive of compensation and the problem that we all face in using these simulation models of selecting particular compensation functions and assigning numerical values to the parameters in these functions.

Q. Would you then use a range of values for compensation if you determined that the data showed some compensation but did not permit calculation of a number for the model? Would you then use a range of values?

A. Yes.

MR. SACK: I'm discovering that we have the answers already to some of these questions.

CHAIRMAN JENSCH: Well, that's moving it along faster than I thought we would. Just go through the rest of your questions. Maybe you'll have enough answers to stop the whole cross-examination.

(Laughter.)

BY MR. SACK:

Q. On page 7-7 of the FES, there is a reference to a

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new life cycle model. Is it possible for you to describe briefly what the changes in this new model will be?

CHAIRMAN JENSCH: Would you give us a reference? Is that page 7-7?

MR. SACK: Page 7-7, the top paragraph. The paragraph begins:

"The Staff acknowledges the need for incorporation of some form of compensation in fish population modeling efforts in order to produce more realistic, long-term estimates of impact. Compensatory natural mortality functions for the young-of-the-year life stages are included in the Staff's striped bass transport model, results from which are given in the Indian Point Unit No. 3 FES and are also included in the Staff's generalized life cycle model, which will be available in early 1977."

I hesitate when it will be available.

CHAIRMAN JENSCH: I can understand your hesitancy.

BY MR. SACK:

Q I would like to know what changes there are in this model from the one that was used in the Indian Point 3 FES and is referenced in the FES for this proceeding.

CHAIRMAN JENSCH: Well, they haven't completed it. Is that what the statement says? It isn't out yet.

MR. SACK: Yes, sir, it isn't completed. I would

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like to know if he can state what changes he is making in that model.

CHAIRMAN JENSCH: Are you able to answer the question?

WITNESS VAN WINKLE: Yes.

This is one of the ongoing studies the staff at Oak Ridge is involved in which was discussed yesterday. It was listed on the sheets that were Xeroxed during discovery.

The changes I mentioned yesterday, again, are to generalize the model in the sense that we can easily input the life cycle parameters for other fish species. In particular, we're interested in white perch and tomcod, and a considerably more complex and detailed subroutine has been added that treats the young-of-the-year in terms of six life stages as opposed to one, which our previous life cycle model did. And we have included the capability for compensation in each of these six young-of-the-year life stages.

End 2

BY MR. SACK:

Q In your opinion, will this new model provide a more realistic estimate of power plant effects?

A (Witness Van Winkle). In our opinion, it will provide us with an improved tool for assessing power plant impact.

MR. SACK: Thank you, Mr. Chairman. That's all.

CHAIRMAN JENSCH: Have you completed, Mr. Sack?

MR. SACK: Yes, Mr. Chairman.

CHAIRMAN JENSCH: Mr. Fidell?

MR. FIDELL: Thank you, sir.

BY MR. FIDELL:

Q In light of the Board's direction to the staff to prepare a supplement to the FES regarding benefits and costs, a number of the questions we had intended to put to the staff's witnesses have been, we think, mooted. But we still have a few more that we would like --

CHAIRMAN JENSCH: That's an encouraging start, anyway, to hear you say that. Go ahead.

MR. FIDELL: Well, Mr. Chairman, I'll try to proceed in that tone.

BY MR. FIDELL:

Q Dr. Geckler, I'd like to invite your attention to the comments prepared by the Environmental Protection Agency, Region 2, that appear at pages 8, 10, and following of the Final Environmental Statement.

(Pause.)

When you received the letter from the Environmental Protection Agency, did you consider it your function to examine the rationale presented in that letter?

A (Witness Geckler). Yes.

Q Did you, in fact, examine, consider the rationale presented in that letter?

A Yes.

Q Turning to paragraph 2 of this letter -- I'm referring to the appeal letter -- it states, three or four lines up from the bottom, that Con Ed has requested an adjudicatory hearing on both the closed cycle cooling requirements and the related compliance schedule, as a result of the May stay of these permit conditions. Do you understand that stay to have been granted automatically by EPA?

MR. LEWIS: This is something that was a legal determination. Well, I'm stating that this determination was made by counsel. It is my understanding that a stay is automatic under the EPA rules of practice, upon the filing of an adjudicatory hearing request.

MR. FIDELL: Yes.

BY MR. FIDELL:

Q On page 4-1, if we can turn to that for just a moment, Dr. Geckler; on page 4-1, there is a reference to Con Edison's request to EPA for an exemption from EPA thermal standards and for

1 a determination that once-through cooling is the best technology
2 available. Are you familiar with the correspondence between EPA
3 and Con Edison on this subject?
4 A. No, sir.
5 Q. Do you know whether the permit issued by the Environ-
6 mental Protection Agency provides for an extension of the period
7 for determination of once-through cooling?
8 CHAIRMAN JENSCH: I think we've already referred to
9 the document. Please submit the document. I think if he'd had
10 the recollection, even if he had had prior information about it --
11 MR. FIDELL: Yes, sir.
12 CHAIRMAN JENSCH: Please let him see the document.
13 MR. FIDELL: Mr. Chairman --
14 CHAIRMAN JENSCH: Please submit the document.
15 MR. FIDELL: Mr. Chairman, we have two documents.
16 We have a document from EPA, dated February 24, 1975, to Mr.
17 Newman of Con Edison; and another document, dated May 8, 1975,
18 from EPA, also to Mr. Newman.
19 MR. LEWIS: Are these the 402 permits?
20 MR. FIDELL: The first is the 402 permit. The second
21 is the response of the EPA Region to the request for an adjudica-
22 tory hearing.
23 (Document handed to the witnesses.)
24 (Pause.)
25

BY MR. FIDELL:

Q Dr. Geckler, referring to the letter dated February 24, and inviting your attention to page 5 of that letter --

CHAIRMAN JENSCH: What letter are you talking about? We haven't seen it. If you're going to mark it for an exhibit, let's go through that process before we start asking questions, until it's in evidence.

MR. FIDELL: Very well, sir.

Mr. Chairman, I ask that the letter from EPA Region 2, dated February 24, 1975, be marked as Licensee's Exhibit next in order, wbich would be 18; OT-18. And that the letter from EPA to Mr. Newman, dated May 8, 1975, be Licensee's OT-19 for identification. And I request that the record reflect that copies have been provided all around.

MR. SHEMIN: Well, I would request the record reflect that this time, counsel for HRFA and the Attorney General are sharing one copy.

MR. FIDELL: I beg your pardon. Do you have a copy in front of you, Mr. Shemin?

MR. SHEMIN: I'm sharing one with counsel for HRFA.

MR. TROSTEN: I think the record should also show that other parties are sharing copies.

CHAIRMAN JENSCH: The document dated February 24, 1975 from the United States Environmental Protection Agency to Mr. Carl Newman and so forth, identified by Licensee's counsel, may

be marked for identification as Licensee's Exhibit OT-18.

(The document referred to was marked as Licensee's Exhibit OT-18 for identification.)

CHAIRMAN JENSCH: The document dated May 8, 1975, likewise from the United States Environmental Protection Agency to Mr. Carl Newman, as identified by Licensee's counsel, may be marked for identification as OT-19.

(The document referred to was marked as Licensee's Exhibit OT-19 for identification.)

MR. FIDELL: Thank you, sir.

BY MR. FIDELL:

Q Dr. Geckler, referring you now --

CHAIRMAN JENSCH: Are you going to offer these into evidence?

MR. FIDELL: I beg your pardon?

CHAIRMAN JENSCH: Are you going to offer them in evidence?

MR. FIDELL: I'd like to ask the witness some questions about them.

CHAIRMAN JENSCH: You don't ask them until they're in evidence, because they're not his documents.

MR. FIDELL: Yes, sir. But it's our position that these pertain to the comments that were provided by EPA.

CHAIRMAN JENSCH: Do you want to offer these in evidence?

MR. FIDELL: No, we feel --

CHAIRMAN JENSCH: They shouldn't be the subject of interrogation of the witness.

MR. FIDELL: Your Honor, at this point, we would request that counsel for the other parties stipulate that these be admitted into the record.

CHAIRMAN JENSCH: Is there any objection to receiving in evidence Licensee's Exhibits OT-18 and OT-19?

MR. LEWIS: Mr. Chairman, yes, there is an objection. Obviously, we do not have the appropriate people to respond to these, and I fail to see how examination of Dr. Geckler on the basis of these documents for which he has no responsibility is likely to be productive at all. I would consider it impermissible, and I would probably object to all of the various questions on it.

CHAIRMAN JENSCH: What is the purpose of the offer?

MR. FIDELL: The offer, Mr. Chairman, is that the Board should have before it the entire administrative setting. That is obviously fundamental to consideration of the EPA's comments. We feel that it is an incomplete record simply to consider EPA's letter to Mr. Knighton, that appears in the FES.

MR. TROSTEN: Mr. Chairman, would you permit me to make a comment with regard to your prior statement?

It has been entirely customary, Mr. Chairman, in this

1 proceeding and other proceedings, for cross examination to be
2 permitted on the basis of a document that has not been offered in
3 evidence. One can cross examine with regard to any document
4 without offering the document into evidence. I would submit that
5 it is not necessary that we offer this document in evidence to
6 do that.
7 CHAIRMAN JENSCH: Yes, it is. You can ask a question
8 as to the foundation without its being received in evidence. But
9 you can't ask the contents of the document until it's in evidence.
10 Now, there has been a lack of objection to inquiry
11 in these matters in some respects. We've had inquiry about a lot
12 of these -- if I can use the term, LMS and TI documents -- be-
13 cause they have been indicated to be supported by witnesses who
14 were here. But these documents may be, in a sense, official do-
15 cuments of the Federal agency. But until they're in evidence,
16 they're not a basis for examination.
17 MR. TROSTEN: Well, I would respectfully disagree,
18 sir.
19 CHAIRMAN JENSCH: Yes. You may take it up with Mr.
20 Wigmore. I'm sure he'll enjoy reading them.
21 MR. FIDELL: Mr. Chairman, is the Board ruling that
22 these documents are not entitled to be treated as official records?
23 CHAIRMAN JENSCH: We haven't made any ruling at all.
24 They haven't been offered yet. We haven't heard the objections
25 from all the parties. We're about to do that now. You were

seeking a stipulation. I didn't hear any rush to the front, but I thought I'd do it in the usual fashion, and ask them if they had objection.

MR. SHEMIN: Could I inquire whether these documents were provided to NRC, along with the letter from EPA and their detailed comments,in the FES, and this proceeding? They were not?

MR. LEWIS: They were not.

MR. SHEMIN: Then I object. They're totally irrelevant. Mr. Geckler didn't consider these letters in his determination, nor did anyone else in the NRC. I fail to see what EPA is or is not doing -- I fail to see how that's relevant to this proceeding.

CHAIRMAN JENSCH: Hudson River?

MS. CHASIS: Yes. I would join with the staff and Mr. Shemin on this. I don't see the relevance of these documents, and I think it would be appropriate, if they're going to be introduced, to have some kind of EPA witness available.

MR. FIDELL: Well, may I respond, Mr. Chairman?

CHAIRMAN JENSCH: Well, let's hear -- how about the New York State Energy Office?

MR. KING: We have no objection.

MR. D'ALVIA: We have no objection.

CHAIRMAN JENSCH: Do you have something to add, Mr. Fidell?

1 MR. FIDELL: Yes, Mr. Chairman.

2 I'm not sure I understood the response of the State
3 of New York Attorney General's office, but we feel that the
4 relevance of these documents is unquestionable. And we consider
5 that the FES and the material on the environmental requirements
6 of EPA cannot be fairly considered without these documents before
7 the Board. And we would think that the Board could take official
8 notice of their contents if, as appears to be the case, counsel
9 are not willing to stipulate to their authenticity.

10 MR. SHEMIN: Mr. Chairman, I now understand Mr. Fidell
11 to be suggesting that he is cross examining Dr. Geckler -- and
12 this is not direct; I consider this cross examination -- on
13 material that he hasn't read yet. And he's cross examining these,
14 and offering these, in effect, into evidence, in support of their
15 position, and perhaps in refutation of the FES.

16 If they're going to be offered in evidence, not as
17 something that was considered by the staff in writing the FES, but
18 merely as in effect part of the Applicant's case, then the appro-
19 priate course, certainly, then is to call a witness from the
20 Environmental Protection Agency to find out whether this is, in
21 fact, their present position, for instance; or, the extent to
22 which they support this material.

23 CHAIRMAN JENSCH: I heard your statement, Mr. Fidell.
24 This is unquestionably material. I'm having a little difficulty,
25 a lack of persuasion from your conclusion. I just don't understand

1 what part of the staff work this is intended to relate to for
2 relevancy.
3 MR. FIDELL: Fine, sir.
4 Mr. Chairman, perhaps it would be helpful if I could
5 proceed with my examination of the witnesses, and if you wish to
6 defer your ruling on their materiality --
7 CHAIRMAN JENSCH: We might as well do it right now
8 as re-offer it later. The objection is sustained.
9 MR. FIDELL: Thank you, sir.
10 CHAIRMAN JENSCH: You're welcome. You may proceed.
11 BY MR. FIDELL:
12 Q Dr. Geckler, do you know why the Environmental Pro-
13 tection Agency -- do you know what date has been selected by the
14 Environmental Protection Agency for termination of once-through
15 cooled operation at Indian Point 2?
16 A (Witness Geckler). I have heard estimates of the
17 spring of 1977 as being the time that the hearings would be
18 scheduled.
19 MR. FIDELL: I'll reiterate the question.
20 MR. LEWIS: Yes, I think he misunderstood the question.
21 I believe the question was related to the date for termination.
22 Is that correct, Mr. Fidell?
23 MR. FIDELL: It is, indeed.
24 MR. LEWIS: The date for termination of the permit.
25 CHAIRMAN JENSCH: Of course, that's reflected by the

1 document. That's the document we're back to, which has never been
2 established. But maybe if we move it along -- can you suggest
3 the date, ask him if he's familiar with the date? That might be
4 leaving so much to recollection here that we're taking time to
5 get things past the Board by a document. Maybe you can suggest
6 to him, if he understands -- maybe it said, stop it tomorrow.
7 MR. FIDELL: Mr. Chairman, I hate to lead a witness
8 unnecessarily. I'll just ask.
9 BY MR. FIDELL:
10 Q Dr. Geckler, is it your understanding that May 1,
11 1979 is the date that's been selected by the Environmental Protec-
12 tion Agency, as you presently state, for termination of once-
13 through cooling at Indian Point 2?
14 A (Witness Geckler). That is so stated in their com-
15 munication.
16 Q Which communication is that, Dr. Geckler?
17 A The one on page A-10.
18 Q And, Dr. Geckler, does the material on page A-10
19 indicate that there is provision for an extension of that date
20 until July 1, 1981?
21 CHAIRMAN JENSCH: What does the document show? Don't
22 ask him what it shows. Whatever it shows, the document speaks
23 for itself. You're not asking him to read between the lines or
24 something. I don't understand your interrogation; we're taking
25 time on nothing.

MR. FIDELL: Opinions differ on that, Mr. Chairman.

CHAIRMAN JENSCH: Yes, I expect. Does the document say that? Can you refer to something? Do you see where it says something -- and read it to him. Don't say, what do you think it shows.

MR. FIDELL: I'll let my question stand as it is, Mr. Chairman.

CHAIRMAN JENSCH: All right.

BY MR. FIDELL:

Q Dr. Geckler, referring to paragraph 3 of the letter to Mr. Knighton from Mr. Hansler, the last line on the first page of that letter says that by taking the proposed action, NRC would contradict EPA's permit requirements. How did you understand the NRC action would contradict EPA's permit requirements?

CHAIRMAN JENSCH: Is that a legal matter?

MR. LEWIS: I'm not so sure; partially a legal matter.

MR. FIDELL: I'll accept the statement of counsel on this, Mr. Chairman.

MR. LEWIS: It's partially a legal matter. But first and foremost, are you asking us to interpret what EPA meant by their comments that we would contradict their permit requirements?

MR. FIDELL: I wish to know what the staff's understanding was of EPA's objection.

MR. LEWIS: All right.

Now, let me see. Which is the sentence that you're

1 reading?

2 MR. FIDELL: The last sentence, the carryover sentence

3 that begins, "By taking the proposed action --"

4 MR. LEWIS: "-- NRC would contradict EPA's permit

5 requirements." I think what EPA was saying to us is that their

6 402 requires termination of once-through cooling by May 1, 1979.

7 And although an adjudicatory hearing has been granted on the

8 request for an exemption under 316(a), and for determination of

9 316(b), their position is still -- and it's stated quite clearly

10 in their letter -- their position is still, the present EPA

11 position is, termination of once-through cooling by May 1, 1979.

12 And in that context, and since they're going to have a proceeding

13 on that termination date, they believe that an extension granted

14 by the NRC might prejudice their proceeding; a two-year extension

15 might prejudice their proceeding.

16 They recognized, of course, that a one-year extension

17 had been accomplished by virtue of the selection proceeding. They

18 so state in their letter as well.

19 BY MR. FIDELL:

20 Q If it was stated that there would be prejudice to the

21 EPA proceeding, and the phrase appears further in that same sen-

22 tence,"perhaps even prejudice the adjudicatory hearing, " can

23 some representative of the staff indicate the manner in which

24 action by the Commission in this case would prejudice EPA's

25 hearing?

MR. LEWIS: Mr. Chairman, now I'm getting into a position where I really cannot speak for EPA on this point.

CHAIRMAN JENSCH: Well, it's probably unquestionably his desire that you do. But I don't see how you can, and I don't think you should. So I think your objection is sustained.

MR. LEWIS: Yes. I decline comment on that.

MR. FIDELL: Mr. Chairman, Dr. Geckler said that he had considered it his function to examine the rationale contained in this letter, and perhaps Dr. Geckler could offer a different answer.

MR. LEWIS: Well, perhaps he could. However, you know, the staff is composed of technical members and legal counsel. And I am stating to you that with respect to the matters you have so far raised, the review thereof was principally by counsel. And I hope you'll accept an answer from counsel as to that.

MR. FIDELL: I will.

It was stated by the staff's environmental project manager that the letter from the EPA was a significant input, if you will, to the staff's change of position between the Draft Environmental Statement and the Final Environmental Statement. Can someone at the staff table indicate to me whether the staff shares the view of EPA that the proposed action would serve no practical purpose?

MR. LEWIS: Mr. Fidell, would you please point to

1 what you're relying on in the letter?

2 MR. FIDELL: I'm referring to line 4 of page 2 of Mr.

3 Hansler's letter. I direct that question to Dr. Van Winkle.

4 CHAIRMAN JENSCH: The full sentence to which you're

5 directing attention reads, "In our judgment, the proposed action--"

6 "in our judgment"; I presume that's EPA's judgment -- "the pro-

7 posed action would serve no practical purpose." Is that it?

8 MR. FIDELL: Yes, sir, it is.

9 CHAIRMAN JENSCH: And you want him to explain the EPA

10 judgment?

11 MR. FIDELL: No, sir. The question was, whether Dr.

12 Van Winkle agrees with that EPA assessment.

13 CHAIRMAN JENSCH: All right.

14 WITNESS GECKLER: Before Dr. Van Winkle --

15 MR. FIDELL: Could I have an answer from Dr. Van

16 Winkle first, and then if Dr. Geckler would like to --

17 WITNESS GECKLER: I wish to correct some characteri-

18 zations.

19 CHAIRMAN JENSCH: I understood that Dr. Geckler took

20 responsibility for the action, for the project. Dr. Van Winkle

21 did not. May be I'm in error. But did you have the province of

22 the determination of what to do about this?

23 WITNESS GECKLER: Yes.

24 CHAIRMAN JENSCH: All right. You answer the question.

25 WITNESS GECKLER: First of all, I believe you

1 mischaracterized, to some extent, the manner in which I stated
2 that I used this letter. This letter was not responsible for
3 changing our mind. It was responsible for enabling us to re-
4 evaluate our position. It, in itself, did not cause the change
5 of mind.
6 I do not know specifically what EPA means by "a prac-
7 tical purpose." I can only conjecture, and I don't believe you
8 wish me to do that.
9 BY MR. FIDELL:
10 Q No, I don't.
11 Dr. Geckler, what did cause the staff to change its
12 mind, if this letter didn't?
13 A (Witness Geckler). I've already testified to the
14 factors that went into the change of mind. If you wish me to
15 repeat them, I will.
16 MR. LEWIS: Well --
17 MR. FIDELL: I'm puzzled. I had understood the wit-
18 ness to have stated, in his prior testimony, that this was one
19 of the principel -- perhaps the keystone.
20 CHAIRMAN JENSCH: Can you find the place in this
21 transcript? I think you'll correct your impression.
22 MR. FIDELL: I don't think we have that transcript
23 yet, Mr. Chairman.
24 MR. LEWIS: I don't think we need to go to the tran-
25 script. I think that the objection on the same point which I

raised was sustained. And that was based upon the fact that Dr. Geckler has listed previously what the bases for his action were; and, in fact, I think he reiterated today that he stood on those. I don't know what more he can say.

CHAIRMAN JENSCH: Well, I think the transcript would be helpful to show that he included many factors, no one of which, as I recall, at that point was fundamentally persuasive. It was a combination of factors.

MR. FIDELL: May I ask the witness then, Mr. Chairman, whether the comments from EPA were the most important factor?

CHAIRMAN JENSCH: Yes.

WITNESS GECKLER: The most important from what standpoint, sir?

BY MR. FIDELL:

Q Did it have the greatest weight in your reanalysis?

A (Witness Geckler). It has a large amount of weight, mainly because of the second memorandum of understanding between the Commission and EPA.

Q Are you familiar with the concept of the lead agency, Dr. Geckler?

A Yes, sir.

Q Which agency is the lead agency with regard to the proposed action in this case?

MR. LEWIS: Objection. It's clearly a legal comment.

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1 I don't know whether you want to go ahead and try to address it.
2 I'm not clear on the concept of lead agency. I'd have to research
3 the point as to whether or not there really is a clear determina-
4 tion of who is the lead agency in this situation.
5 CHAIRMAN JENSCH: Doesn't the Council on Environmental
6 Quality determine the lead agency, if two agencies are working on
7 the same phase of the matter? So, the question of fact; do you
8 know whether the Council on Environmental Quality has made a lead
9 agency determination for this proceeding?
10 WITNESS GECKLER: I do not know specifically.
11 MR. FIDELL: Thank you.
12 CHAIRMAN JENSCH: Incidentally, would this be a
13 convenient time for you to tell us about Appalachian Power versus
14 Train?
15 MR. SACK: Yes, sir. I was the counsel for Con Edison
16 in that proceeding, and I'm not quite clear what your specific
17 question is.
18 CHAIRMAN JENSCH: What ever happened to the 402
19 permit, and what's the status of effluent limitations in the
20 Hudson River? You asked for some special treatment, as I recall.
21 What was the special treatment you were asking for? There was a
22 general attack by many utilities on the liquid effluents, but
23 you asked for some special --
24 MR. SACK: The special treatment really related to
25 considerations for the in-city plants. It did not affect the

1 Indian Point situation. We have problems with our in-city plants
2 which are different from virtually every other power plant in the
3 country; certainly, the ones that EPA considered. And so, we
4 asked for a special interpretation. We asked for an interpreta-
5 tion of the variance clause, which would allow us to establish
6 that our plants are different. And we succeeded in that, and
7 they gave us -- the report said that the variance clause should
8 be given a broader interpretation than EPA was giving it.
9 CHAIRMAN JENSCH: It's been remanded for further
10 determination, has it not?
11 MR. SACK: That's right. Under the Federal Pollu-
12 tion Control Act -- the structure really requires two separate
13 proceedings. You challenge the regulations in one proceeding,
14 and your permit conditions pursuant to the regulations are deter-
15 mined at another proceeding. The Appalachian Power case was a
16 determination of the regulations, so it did not decide any of the
17 specific permit conditions.
18 So, the variance clause in the regulations was reman-
19 ded to EPA. The main element of the case which affects Indian
20 Point was the provision in the regulations EPA promulgated under
21 Section 301, which require cooling towers, closed-cycle coolants,
22 for all power plants built after a certain date. And that re-
23 quirement was remanded to EPA on the grounds that they had not
24 properly considered the ecological benefits which would come from
25 closed-cycle cooling.

1 The mandate of the court was issued just a few weeks
2 ago. So, the time for EPA to petition for a certiorari in that
3 proceeding has not yet expired, and we don't know whether they
4 will try to go to a higher court or not.
5 CHAIRMAN JENSCH: You say they issued a stay on
6 that? Did the court issue a stay?
7 MR. SACK: No, they did not issue a stay. But EPA
8 so far has not done anything to implement the decision. They
9 have not promulgated the new proposed regulations.
10 CHAIRMAN JENSCH: I understood in the Seabrook case,
11 they said, well, we could never hand down the same set of regula-
12 tion again. Is that your understanding of what the next step is?
13 MR. SACK: I have no idea what they can do. They
14 could presumably do that if they accompanied it with an explana-
15 tion of the benefits they would get from closed-cycle cooling at
16 every power plant. I would think that if they did it that way,
17 that would be grounds to challenge it once again, because it's
18 hard for us, at least, to see how they could come out with a
19 statement of benefits which would support that kind of regulation.
20 But, be that as it may, the relevance for Indian
21 Point is not -- it's not too directly involved. Because although
22 a new regulation would help somewhat, EPA has taken the position
23 at Indian Point that the closed-cycle cooling was required under
24 Section 316(b), and that section was not involved in the Appala-
25 chian Power Company case. First, we started a new proceeding;

1 the same group of utilities challenging the regulations under
2 Section 316(b), and that second challenge, which has not yet even
3 reached the court stage, hasn't been decided by the court yet.
4 That case would be important for the Indian Point situation.
5 CHAIRMAN JENSCH: So, it's your understanding that
6 the permit that's already in effect is not tarnished by any court
7 review. Is that your contention?
8 MR. SACK: Well, the permit proceeding, as I said
9 before, is a separate proceeding.
10 CHAIRMAN JENSCH: Yes.
11 MR. SACK: The provisions on closed-cycle cooling are
12 stayed. So, by the time we get to an adjudicatory hearing, we have
13 no idea when that will be, we will then have to look at the regu-
14 lations as they then stand and see how it affects the case. But
15 I don't think -- the 301 regulations will not be as significant
16 as what comes out of our challenge to the 316(b) regulations.
17 CHAIRMAN JENSCH: Thank you very much.
18 Will you proceed, Mr. Fidell?
19 MR. FIDELL: Thank you, sir.
20 BY MR. FIDELL:
21 Q Dr. Geckler, would your position with respect to the
22 correspondence within the Environmental Protection Agency be dif-
23 ferent if there were a provision in EPA's Section 402 permit for
24 an extension of once-through cooling to as late as July 1, 1981,
25 upon a showing of good cause?

1 MR. LEWIS: Objection. This is -- well, my objection
2 is that there has been no development or foundation that Dr.
3 Geckler is familiar with the 402 permit revisions to the extent
4 that he has the basis for determining whether or not a specific
5 extension provision of a 402 would or would not affect his deter-
6 mination in this case. I mean, he is not the person who would
7 be primarily familiar with all the contents of a 402 permit.
8 CHAIRMAN JENSCH: Do you care to speak further to
9 that?
10 MR. FIDELL: I will if need be, Mr. Chairman.
11 CHAIRMAN JENSCH: Well, there is a need be. So go
12 ahead.
13 MR. FIDELL: We feel that for the staff to place as
14 much emphasis as it obviously has in the Final Environmental State-
15 ment, and yet to raise objections to a question -- I'm referring,
16 for the record, of course, to page 5 of Exhibit OT-18 for identi-
17 fication, the last paragraph --
18 CHAIRMAN JENSCH: That's not in evidence, is it?
19 MR. FIDELL: No, sir. But I just wanted the record
20 to be clear as to what I was referring to.
21 For the staff to raise an objection, I think, is kind
22 of unfair, because of the emphasis that has been placed on the
23 discharge permit situation. It has been given, I think, undeba-
24 tably, permanence in the FES, and it just seems to me to be a
25 reasonable question to ask. If one of the important terms of the

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1 Section 402 permit issued by EPA, and now stayed, is that an ex-
2 tension may be obtained until July 1, 1981, upon a showing of
3 good cause, was not before the staff at the time they issued the
4 Final Environmental Statement, then there is a serious question
5 that has to be raised about the weight that was afforded to the
6 EPA letter in the FES. That's why I asked the question.
7 CHAIRMAN JENSCH: Well, the problem I have is that
8 you're asking him about a document, the 402 permit. Now, what
9 it embraces, I don't know; I don't know whether he knows. Now,
10 you're suggesting that if one term of that permit were changed,
11 what that would do to the other aspects of the permit; I don't
12 know, either.
13 So, I think, in a sense, you don't have the founda-
14 tion for the question: (a), the document in itself; (b), the un-
15 derstanding of the relationship among the terms; and, really, (c),
16 as staff counsel points out, is a legal determination for consi-
17 deration by the staff. I think, on this basis, that this witness
18 can't be pushed into a different position without staff determina-
19 tion. Don't you agree?
20 MR. FIDELL: No, sir, I don't.
21 CHAIRMAN JENSCH: The objection is sustained.
22 (Pause.)
23 BY MR. FIDELL:
24 Q. Dr. Geckler, how long will it take, in your opinion,
25 to prepare a draft environmental statement with respect to a

1 request by Con Edison to vacate, to lift, the closed-cycle cooling
2 license restriction?
3 A (Witness Geckler). Do you wish to include the hearing
4 time as well?
5 Q Well, just the draft environmental statement.
6 A The draft environmental statement?
7 Q Yes, sir.
8 CHAIRMAN JENSCH: Is this the application you're going
9 to file next year?
10 MR. FIDELL: Yes, sir.
11 CHAIRMAN JENSCH: And you want to know how long he's
12 going to process a document he hasn't even seen, and you haven't
13 prepared. Is that your question?
14 MR. FIDELL: Well, Mr. Chairman, let me lay some more
15 foundation. Perhaps we can go into that later.
16 BY MR. FIDELL:
17 Q Dr. Geckler, I take it it's your job that you're
18 responsible for the preparation of a number of environmental im-
19 pact statements.
20 A (Witness Geckler). Yes, sir.
21 Q And you're familiar with the amount of time that it
22 takes to prepare a draft environmental impact statement?
23 A Yes, sir.
24 Q And to conduct the adjudicatory hearings thereon?
25 A Some of them.

Q. Some of them. And to circulate the statements to other Federal agencies and local governments, and the public at large?

A. Yes.

Q. I reiterate my question, then. Do you have an opinion as to how long it would take to prepare a draft environmental impact statement along the lines that have been discussed at considerable length in this hearing so far?

MR. LEWIS: I would like to ask a preliminary question. Could you give us an indication of how long the document is that you're going to submit to us, how voluminous it is?

CHAIRMAN JENSCH: Do you have to file an environmental report to -- what is your term, lift it?

MR. FIDELL: I said to vacate.

CHAIRMAN JENSCH: To vacate?

MR. FIDELL: And then, I think I tried to explain that meant to lift.

CHAIRMAN JENSCH: Will you have another three-volume edition for your vacating?

MR. FIDELL: The Board can assume it will be a substantial document.

CHAIRMAN JENSCH: Oh, we can assume that. Well, what can we assume that's in it? Low probability of damage, and the likelihood that further studies will be very helpful, and if you wait long enough, we'll know what's flowing down from Albany, and so on? Will that all be in there? Can we assume that, too?

1 How about the PCBs? Are they in there, and what happened in
2 Cornwall? Does that affect your vacating? How much do we assume?
3 MR. FIDELL: Mr. Chairman, may I perhaps ask if Dr.
4 Geckler has trouble with the question, or if he can answer it.
5 CHAIRMAN JENSCH: We have to have a little understan-
6 ding of it, too. Because it seems to me it's both speculative
7 and uncertain, and an unfair premise to propound to the witness.
8 So I think it's objectionable, and the staff position would be
9 sustained.
10 (Pause.)
11 MR. BRIGGS: It would be helpful if you could tell
12 us what that report might be composed of. Is it an environmental
13 report asking for a license amendment? Is that what it is?
14 MR. FIDELL: Yes, sir.
15 Mr. Briggs, we contemplate that there will be an ap-
16 plication for an amendment to the operating license that would
17 vacate the present once-through, the present closed-cycle cooling,
18 in terms of the license.
19 MR. BRIGGS: This will be an environmental report
20 like this?
21 MR. FIDELL: The record should reflect that Mr. Briggs
22 was raising his hand about 16 inches.
23 CHAIRMAN JENSCH: He was showing how high it piles up,
24 another pile.
25 MR. FIDELL: It reminds me of the story that they tell

1 about the lawyer who said to the witness, "Now, Mrs. Jones, show
2 the jury how high you used to be able to raise your arm."
3 MR. BRIGGS: Yes, I know that one.
4 (Laughter.)
5 MR. FIDELL: The report that we will submit with this
6 will cover the material that we understand to be required to be
7 part 51 of the Commission's regulations.
8 CHAIRMAN JENSCH: And what was that? Give us a sum-
9 mary, would you please, of that. Is it anything different from
10 what you've already filed here? Do we have the report available?
11 MR. TROSTEN: No, Mr. Chairman. If I may speak to
12 this just for a moment --
13 CHAIRMAN JENSCH: Why don't you bring it in and give
14 it to Dr. Geckler? And maybe if he saw what your environmental
15 report was, he could give you some idea of how long it would take,
16 if it's a repeat of what you've already filed. It might move
17 faster.
18 MR. TROSTEN: Well, the point here, of course, that
19 we've been trying to establish is the fact that it's manifest
20 that a considerable amount of time will be necessary to review
21 tbis document, which is a very important element --
22 CHAIRMAN JENSCH: If it's manifest, why waste any
23 questioning time?
24 MR. TROSTEN: We thought simply that to have an opi-
25 nion from the staff witness who is responsible for this sort of

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1 thing, as opposed to simply our own estimate, it would be helpful
2 to the record. But I guess we've probably gone as far as we can.
3 It will be a substantial document. It will take time, and I
4 think that's manifest.
5 CHAIRMAN JENSCH: Have you completed your environmen-
6 tal report for that?
7 MR. TROSTEN: No, sir, we have not.
8 CHAIRMAN JENSCH: How long is it going to take you
9 to get that ready?
10 MR. TROSTEN: Get it ready? Well, we hope to have
11 this submitted shortly after the submission of the January 1977
12 report, as I have stated before, Mr. Chairman, in response to your
13 inquiry. The facts are that the preparation for this hearing, and
14 participation in this hearing, have slowed down our work on this,
15 which is also highly unfortunate from our point of view, and I
16 think from the point of view of everyone concerned.
17 We have parallel efforts going on now; this hearing,
18 and the preparation of the January 1977 report, and of the envi-
19 ronmental report. This is one of the problems I've been trying
20 to bring out before, one of the criticisms we had of the delay in
21 this, which I assure the Chairman and the staff, I wasn't just
22 criticizing the staff for the sake of criticizing the staff. I
23 was saying that it was having a profound effect on the schedule.
24 CHAIRMAN JENSCH: Why don't you withdraw your applica-
25 tion, then? You won't be under that burden.

1 MR. TROSTEN: Because if we withdrew our application
2 here, then we would be faced with what I again have characterized
3 as a difficult situation. We were placed in this situation by the
4 terms of the Indian Point 2 operating license, and so it was ab-
5 solutely incumbent upon us to do what we did, which was 18 months
6 ago; to have submitted the application. And had there been a
7 prompt adjudication of that, we would not all be in this situa-
8 tion, which I characterized now as very unfortunate.
9 We're all in the situation where we're involved, let
10 us face it, in a mini-review of the material that is going to be
11 coming in shortly, and slowing this process down, which I think
12 is unfortunate.
13 CHAIRMAN JENSCH: Well, it's the nature of your pro-
14 ceeding that you ssk for an application after you file this other
15 report. And I think we all should commiserate about it. There's
16 no joy in the Board in being here, I can assure you of that. But
17 we're obligated to be here until you file the application and it's
18 decided by the Board. So, let's all struggle together and keep
19 our spirits up.
20 Do you have further questions?
21 MR. FIDELL: Yes, sir.
22 CHAIRMAN JENSCH: Will you proceed?
23 MR. FIDELL: Thank you.
24 BY MR. FIDELL:
25 Q Dr. Geckler, preparing the Final Environmental Statement

1 did the staff adopt the suggestion offered by the New York State
2 Public Service Commission, which appears, by the way, at page A-
3 25 in the Final Environmental Statement, that it review a report
4 prepared at the University of Florida?
5 A (Witness Geckler). Which page was that again?
6 Q A-25.
7 MR. SHEMIN: 24 and 25.
8 MR. FIDELL: Thank you. This was an attachment to a
9 letter from the New York Department of Environmental Conservation,
10 which also appears in the FES.
11 CHAIRMAN JENSCH: Now, what letter in particular are
12 you directing his attention to?
13 MR. FIDELL: Sir, on the left-hand side of page A-25,
14 the next to last paragraph, there's a reference to a document
15 prepared by Howard T. Odom, et al., entitled Power Plants and
16 Estuaries at Crystal River, Florida: An Energy Evaluation of the
17 System of Power Management.
18 MR. LEWIS: Mr. Fidell, you described this as an
19 attachment to this letter. Why don't you ask Dr. Geckler whether
20 or not it was an attachment? I don't know if this report was
21 attached to the letter that was referred to.
22 MR. FIDELL: No, no, no. I'm sorry. There was
23 obviously a misunderstanding. What I said was that the Public
24 Service Commission's letter was an attachment to the Department
25 of Environmental Conservation's letter.

MR. LEWIS: Okay.

WITNESS GECKLER: What was the question?

BY MR. FIDELL:

Q. The question was, did you review the University of Florida report?

A. (Witness Geckler). Not yet. I have not seen it. I presume it's available through the project manager for Crystal River.

Q. Thank you.

The Final Environmental Statement treats the preservation of some options as a benefit. For example, if you refer to Section 4.1.1, the staff's analysis would seem to indicate that at that time, preservation of an option as to the type of closed-cycle cooling system that should be installed was a benefit. Should not the preservation of the opportunity to consider whether a closed-cycle cooling system of any kind should be installed also be treated as a benefit?

A. I have stated repeatedly that my belief is that the closed cooling system is a requirement at the Indian Point site, and that it has been reviewed several times.

MR. FIDELL: Mr. Chairman, I'm going to move to strike that answer as unresponsive, and ask -- may I put my question again?

CHAIRMAN JENSCH: Please do.

MR. FIDELL: Thank you.

BY MR. FIDELL:

Q. Dr. Geckler, in view of the fact that you treat the preservation of some options as a benefit in Section 4.1.1, should not the preservation of the opportunity to have a full reconsideration of whether any closed-cycle cooling system should be installed similarly be treated as a benefit?

A. (Witness Geckler). I do not believe so.

Q. Thank you.

Is the amount of risk, Dr. Geckler, that the staff is willing to accept concerning unnecessary expenditures for a cooling tower proportional to the size of the expenditures?

CHAIRMAN JENSCH: You're saying, is there greater risk if there's more money involved?

MR. FIDELL: Yes, sir.

CHAIRMAN JENSCH: A little shorter version, Dr. Geckler.

WITNESS GECKLER: I believe I can reply to that.

BY MR. FIDELL:

Q. Your answer?

A. (Witness Geckler). Yes.

Q. Is your willingness to accept this type of risk determined by your estimate of the ultimate harm to the fishery if once-through cooling continues in the Hudson River power plants?

A. That's one factor, sir.

Q. What are the other factors?

(Pause.)

MR. LEWIS: Now, let me see if we have this straight. The other factors in a determination of the acceptable risk?

MR. FIDELL: Yes.

WITNESS GECKLER: Some of the other factors -- I'm not sure they can be all-inclusive -- include some of the legal aspects of it. A matter of scheduling actiivity is part of it. The policy enters into it, so that I agree that the expenditure -- I'm sorry.

The first factor that we mentioned, however, is the most important, in my belief.

BY MR. FIDELL:

Q Dr. Geckler, if you were forecasting a lesser impact from long-term operation with once-through cooling, would you be less willing to accept the risk of unnecessary expenditures?

MR. LEWIS: If he was forecasting a less severe long-range impact?

MR. FIDELL: Yes, sir.

CHAIRMAN JENSCH: You mean, the risk goes down with the lesser impact; is that the question?

MR. FIDELL: No, not that there's lesser impact. The question is, what effect does that have on the staff's willingness to undertake the risk that the expenditures will be unnecessary? I think Dr. Geckler probably understands my question.

WITNESS GECKLER: No, I do not.

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1 CHAIRMAN JENSCH: Give another version of it, a little
2 shorter.
3 MR. FIDELL: Let me see if I can practice some conden-
4 sation here.
5 (Pause.)
6 BY MR. FIDELL:
7 Q Dr. Geckler, clearly -- assume with me the situation
8 where expenditures are required to be undertaken by Con Edison to
9 install a cooling tower. And it's ultimately determined by the
10 Commission that the cooling tower was unnecessary --
11 CHAIRMAN JENSCH: That's a pretty rank assumption. I
12 mean, unless they made the determination, I think -- have you
13 ever seen a government, I mean --
14 MR. FIDELL: Change its mind?
15 CHAIRMAN JENSCH: Well, excuse me. I misunderstood
16 your question. Go ahead.
17 MR. FIDELL: Yes, sir. Everyone changes their mind;
18 the staff changes its mind. So hope springs eternal, Mr. Chairman.
19 BY MR. FIDELL:
20 Q So, postulate with me that, if the staff would say --
21 if this very unlikely event transpires, and the cooling tower is
22 not really required by the Commission, and that some funds have
23 been expended in what turns out to have been a wasteful exercise;
24 if your judgment as to the ultimate harm from long-term operation
25 was less, if you reduce your estimate of the ultimate harm from

1 long-term operation, would you be less willing to accept these un-
2 necessary expenditures?
3 CHAIRMAN JENSCH: Which,having been made, are not
4 irreversible. Is that part of your question?
5 MR. FIDELL: No, sir. I think my question speaks for
6 itself.
7 MR. LEWIS: It sure does.
8 (Laughter.)
9 MR.LEWIS: It would seem to me -- do you mean more
10 willing to accept the risk? I've been trying to understand the
11 question.
12 MR. SHEMIN: What he seems to be saying is that, if
13 you assume that there's a wasteful exercise; if they have to
14 build a tower, and the Commission subsequently finds that, well,
15 you didn't have to build it after all, that that possibility
16 exists that there could be a wasteful exercise, there's a risk of
17 that -- if you now decide that the risk of long-term harm is less
18 than you had previously thought it would be, does that make you
19 more inclined to change your mind about making them go through
20 with this potentially wasteful exercise?
21 WITNESS GECKLER: On the basis of the information
22 available to me at the present time, I do not see that possibility.
23 And the probability of wasteful expenditure is still low.
24 MR. FIDELL: Thank you, Mr. Shemin.
25

BY MR. FIDELL:

Q Would you be willing to put an estimate on that probability? What do you calculate that probability to be?

MR. LEWIS: Would you ask him whether or not he has calculated that possibility?

MR. FIDELL: No. I'll ask him the question that I -- do you think I --

MR. LEWIS: Yes, I think so.

MR. FIDELL: All right. We'll take it step by step.

BY MR. FIDELL:

Q Do you have an estimate of the probability that the Commission will vacate the closed-cycle cooling license condition?

A (Witness Geckler). No.

CHAIRMAN JENSCH: Do you want him to calculate that one, too? Do you want him to calculate that possibility?

MR. SHEMIN: Like a best estimate, and the staff will provide a range.

MR. FIDELL: I'm reminded of another incident in the Watergate hearings, where the witness said, "I will let the record stand as it is, whatever it is."

Mr. Chairman, I have a few more questions.

CHAIRMAN JENSCH: From Watergate?

(Laughter.)

CHAIRMAN JENSCH: We're getting a wide range here.

BY MR. FIDELL:

Q Dr. Geckler, with a May 1, 1980 completion date, is it your understanding that Con Edison will have to start construction before a license amendment to remove the closed-cycle cooling condition could possibly be granted, if an application is filed by early next year?

A (Witness Geckler). The reason I'm hesitating is that, if I recall correctly, the construction schedule was of the order of 40 months, and at least that's my recollection; which is three and a half years, roughly. And on that basis, if it does take that long to build them, and the date is 1980, my understanding is that they would have to start procurement actions early this next year.

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Q And is that prior to the time that there would be a final agency action on an application?

A Yes. I am sorry, I didn't complete my answer.

Q So, Dr. Geckler, does establishment of a May 1, 1980 date effectively close Consolidated Edison from exercising its rights to show that the cooling towers are not needed without the expenditure of substantial amounts of money?

MR. LEWIS: I consider this to call for a legal comment, and in my opinion, it does not effectively foreclose Con Edison from anything.

BY MR. FIDELL:

Q Do you agree with that, Dr. Geckler?

MR. LEWIS: I mean, if the Board agrees with me that it is a legal matter?

CHAIRMAN JENSCH: I think it is.

BY MR. FIDELL:

Q Dr. Geckler, in light of the Board's comments earlier this morning is it the Staff's intent to evaluate the loss of opportunity to -- withdrawn.

Is it the Staff's intent, Dr. Geckler, to include in its benefit-cost analysis an evaluation of the probability that the closed-cycle cooling condition would be vacated and the probability that possibly unnecessary massive expenditures will have to be incurred before a decision

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may be reached.

MR. LEWIS: Can we take those one at a time? The first probability is with respect to?

MR. FIDELL: Vacation of the closed cycle cooling.

WITNESS GECKLER: Are you talking about a modified cost-benefit picture that we will develop for the Board?

BY MR. FIDELL:

Q Yes, the one the Board directed be prepared in this proceeding.

A (Dr. Geckler) Well, --

CHAIRMAN JENSCH: I wonder if that is a legal question, as I recall the Morton case, there is a kind of a limit set on the scope of cost-benefit analyses? It is something that has some prospect of reality and it's reasonable and it can be quantified, and remote and uncertain, speculative matters need not be considered; so that every conceivable concept of either benefit or cost need not be included.

Do you recall that?

MR. FIDELL: Mr. Chairman, I believe --

CHAIRMAN JENSCH: Yes, I know. It's a legal question and the witness need not answer.

MR. FIDELL: May I have a moment, please?

CHAIRMAN JENSCH: Certainly.

(Pause.)

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MR. FIDELL: Thank you very much, Mr. Chairman. That concludes our examination.

CHAIRMAN JENSCH: All right. Attorney General? Do you want a recess?

MR. SHEMIN: I might be able to cut down on my examination if I were able to see what I was going to do?

CHAIRMAN JENSCH: How long do you want, ten minutes?

MR. SHEMIN: That is sufficient.

CHAIRMAN JENSCH: At this time let us recess to reconvene in this room at 12 o'clock.

(Recess.)

CHAIRMAN JENSCH: Please come to order.

If somebody could locate the Attorney General for the State of New York?

MS. CHASIS: Yes, sir, I think he was making a phone call. I will get him.

CHAIRMAN JENSCH: Okay.

(Pause)

MR. SHEMIN: I am sorry for the delay; I made the mistake of calling my office.

CHAIRMAN JENSCH: Will you proceed, please?

MR. SHEMIN: Yes.

BY MR. SHEMIN:

Q Dr. Van Winkle, earlier in your testimony you

1 testified about deletion of a paragraph from the FES which
2 has not quite been explained to me at page 7-7, the first
3 deleted paragraph.
4 There is a statement here about agreement, the
5 first statement about agreement of Staff and Applicant regard-
6 ing an analysis on cropping rates which could be offset
7 by compensatory response.
8 Now, in this analysis is this the analysis found
9 in the multi-plant report annexed to the Environmental Report
10 submitted by Con Ed in this application?
11 A (Dr. Van Winkle) That type of analysis, yes.
12 Q Have you listened to the testimony here relating
13 to that analysis over the last several days, since Tuesday?
14 A Yes.
15 Q Did this testimony or did data provided subsequent
16 to the initial multi-plant report indicate to you that the
17 use of a five-year lag time as done in their initial analysis
18 was not a correct procedure?
19 A As I remember from the previous testimony that
20 they had tried a number of alternative lags including what
21 sounded like something other than whole-year lags.
22 Q Yes.
23 Well, what would be the basis for using any particular
24 lag time of the type study they were trying to establish?
25 A I thik what should be the basis is the understanding

1 of what components or what age classes, what fractions of
2 various age classes are the fish that are accounting for the
3 groups you would see at some later point in time.
4 In other words, basically, those relationships.
5 Q Now, am I correct in understanding that the striped
6 bass unlike other species do not have a single year in which
7 they are fertile?
8 A There are many other species like the striped
9 bass that are -- that spawn, you know, multiple age class
10 spawns.
11 Q Given that the striped bass is a multiple age class
12 spawner and therefore the young can come from different age
13 times, how would one go about choosing what particular lag
14 time should be used in order to set down on a Ricker type
15 curve?
16 A Well, the information you would need as input to
17 that sort of analysis would be age class specific fecundity
18 meaning the number of eggs produced on the average per female
19 in each -- five year olds, six year olds, seven year olds,
20 et cetera; and you would need information on the need to
21 make an assumption or a range of assumptions on the rate of
22 mortality as you go from five year olds to six year olds to
23 seven year olds, et cetera.
24 Q Did the applicant do that in its multi-plant report
25 in the course of determining the fifth year was the proper

1 lag time?

2 A My understanding is that that was the way they

3 approached it.

4 Q Have you had any occasion to examine the fertility

5 rates of the various year classes? in the course of either

6 working on this application or in the course of working in

7 other areas of the Indian Point application?

8 A I have caused to examine the TI data, age at

9 sexual maturity.

10 Q Can you give us any idea as to whether you are

11 comfortable with any particular age class as being the

12 dominant one from the point of view of fertility?

13 A It looks to me like it probably is a combination

14 of five, six, seven year olds that are the dominant components

15 although I am anxious to review the Texas Instruments'

16 data on age at maturity because there was a shift from I

17 believe their 1973 data on this information to subsequent

18 data, and I have not completely reviewed that.

19 Q In doing this would you simply in performing this

20 type of Rickeranalysis, would you simply take the average

21 of the ages, or would you attempt to do a more refined

22 combination of fertility and mortality for the purpose of

23 including the multiple ages that would be reflective of such

24 an order?

25 A I think some sort of weighted -- in other words,

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1 some sort of weighting coefficient that together would take
2 account of maybe 90 percent or more of the eggs that are
3 going to be spawned would be appropriate.
4 In other words, just looking at five and six year
5 olds is not going -- is only going to account for 50 or
6 60 percent of the total eggs that are going to be produced,
7 then you go to the seven year olds; with the seven year olds
8 you might still be asking the question right up to 90 percent.
9 I think you would want to consider as many age classes
10 as necessary to get up to, you know, 90, 90-plus percent of
11 the eggs.
12 Q Dr. Campbell from Texas Instruments testified
13 that when they were preparing the multi-plant report they
14 also used the lag time of six years, and that in contrast
15 to the data displayed they got in the five year lag time, there
16 was no correlation, no Ricker type relationship shown.
17 What is the significance of that, do you know?
18 What conclusions do you draw from that?
19 A Well, we carried out that same analysis. We used
20 a four year lag, a five year lag, and a six year lag; and
21 we used a five year lag, and when we got a five year lag we
22 got just what they reported in the multi-plant report. When
23 you go to the four-year lag, the analysis is somewhat weaker
24 but not appreciably. And when you go to a six-year lag
25 it falls apart considerably more.

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As I remember it went from a minus, a correlation coefficient of minus-.8 -- just rather than remember, if you will give me a moment, I could look it up.

Q If you have it with you, sure.

A I think so.

(Pause.)

With the five year lag the cor relation coefficient was minus .81, as reported in Texas Instruments' multi-plant report; for the four year lag, the correlation coefficient is minus .68; for the six year lag it dropped to minus-.24.

I was somewhat concerned about this in the analysis, that the analysis in a sense fell apart that rapidly in shifting from five to six years. Undoubtedly it's the five and six year olds that are the two most important age classes.

Assuming that -- I'll just leave it there. They are the most important.

Q Do you know how the index of effort in commercial fishery was tabulated by the Applicant, what the basis was for their effort?

A Approximately, yes.

Q Let me just give you a few preliminaries, a few introductory remarks to try to set what I am trying to ask.

CHAIRMAN JENSCH: Keep your voice up.

MR. SHEMIN: Yes.

BY MR. SHEMIN:

Q The data used in this analysis was commercial fishery data over a range of years; is that true? The commercial fishery in the Hudson River?

A (Dr. Van Winkle) Yes.

Q In order to use these data in an inter-year way would it not be required to factor out the different amount of fishing effort being made by commercial fishermen from year to year?

A Yes.

Q Would you tell us your understanding of how the applicant went about this in the Ricker curve we are discussing?

Let me be more specific: was an effort basically calculated by taking certain of the square yardage of certain nets and number of legal fishing hours in a day for the different years in question, and using that as a basis of effort?

A Yes, that is my understanding.

Q Would not one have to conclude, or would not the extent to which fishermen just did or did not fish from year to year, irrespective of the numbers of yards they had licensed or the number of legal hours they could fish, would not the number of days and hours that they actually fished be the actual measure of the effort that they expended each

1 year?

2 A It would probably be a closer approximation,

3 although there are probably additional variables beyond

4 that influencing the actual effect of effort.

5 Q Have you heard any testimony to give you any idea

6 as to what the range of accuracy of the CPUE, the index

7 used in this analysis is?

8 A I am not quite sure what you mean by range of

9 accuracy.

10 Q Well, suppose as an example you were told

11 that the effort used by the Applicant were off by let's say

12 a factor of 10; and that the variability and extent to which

13 fishermen, commercial fishermen in the Hudson did or did not

14 fish in a particular year depended not so much on the amount

15 -- the yardage of nets licensed during legal fishing hours

16 but economic factors, vacations, fancy, various other things;

17 and that the catch effort method TI used was off by as much

18 as a factor of 10, because it did not include the changes

19 in fishing caused by purely a determination other than the

20 ones they input; it was off by as much of a factor of 10,

21 let us say.

22 What would that do to your estimate of reliability

23 of the type of analysis they did?

24 A Well, there are two potential types of error. If it

25 were a systematic type of error, the way they go about

relating effort, it's sort of assuming that the fishermen are out there with all the gear that is licensed every minute that is allowed, and what you are suggesting is perhaps it is not all that high, because they aren't out there all the time.

end 4

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blt 1
egin 5

Q No. What I'm suggesting is that it's variable to a certain extent and to a certain degree in terms of the limits and that it could be off by as much as a factor of 10. It might not be in a given year off by that much.

It might be correct for a given year; it might be five times as much effort as they indicate; it might be five times less.

In that situation, what would that do to the accuracy or the reliability of the analysis they performed?

A First of all, if it were regular, year after year after year, off by a given amount, it wouldn't do very much to the analysis.

If it were off a variable amount, that's going to be more damaging to the analysis, although I hasten to point out that if we had that sort of information -- or I'm sure if Texas Instruments had that sort of information -- it obviously should be factored into the analysis.

Q Do you think it would be possible through questioning commercial fishermen on the river, who number no more, I think, licensed, than a hundred or so, do you think it would be possible through interviewing those individuals to get some sort of handle as to whether or not the yardage that they had licensed at the beginning of the year or the number of fishing hours, legal, in any given year had anything to do with the amount of effort they expended in each year?

blt 2

A. I can see that being valuable qualitative type information, perhaps giving you a better feel for reliability of your data. I would be hesitant to accept recall conversations of fishermen as a basis for systematically trying to correct the old effort data to some adjusted value.

I think it's the type of sort of background information that gives you, whoever is working on the data set, a better feel for the degree of uncertainty.

Q. Have you seen anything in any of the submissions of Texas Instruments or of the Applicant or heard any testimony in this proceeding that would indicate to you that there is any reason to believe that commercial fishermen from year to year expend roughly the same amount of effort or that the amount of effort they expend in fact relates to the yardage of nets they had licensed at the beginning of the year or the number of legal fishing hours?

A. I have not seen any specific evidence one way or the other on that.

Q. Can you give me any hypothesis that you can offer as to -- to explain the rapid fall-off from the 5-year lag time correlation and the 6-year lag time correlation?

A. I don't have any immediate explanation, no.

Q. Does it contradict what you would expect to occur if the curves accurately reflected the real world, the biological situation in the river?

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A. Would you ask that question again?

Q. Yes.

Does this lack of correlation of 6-year-olds for the Ricker analysis and the correlation of 5-year-olds, does that fail to comport with your understanding of what the curves should show if they accurately reflected the river situation, what the striped bass population of the river actually were or were not doing in terms of compensation?

A. It certainly raises a question mark, yes.

Q. Are you saying that the problem with the 6-year-old curve makes you wonder whether in fact -- well, makes you wonder whether in fact the 6-year-old curve is wrong for some reason or the 5-year-old curve is wrong for some reason, which you can't determine from the available information?

A. I guess at this point all it has done is raise a question mark for me. I'd want to go back and work with the data some more myself.

Q. Why did you delete the first sentence of that paragraph I referred to in the beginning of my examination, beginning with, "The Staff agrees . . . ."?

MR. LEWIS: On page 7-7 again?

MR. SHEMIN: Yes.

WITNESS VAN WINKLE: I deleted that because, on the basis we've been doing at Oak Ridge, we decided we wanted to reserve judgment as to whether or not we felt it was

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1 possible to use a stock-recruitment analysis such as the
2 one TI had provided as the basis for defining a range of
3 problem rates which could be offset by compensatory response.
4 BY MR. SHEMIN:
5 Q. The next sentence states:
6 "However, apparently the Staff and TI are also
7 in greement that the uncertainties in the data base
8 and in the assumptions on which the stock-recruitment
9 analysis are based are so great that to develop a
10 further analysis on this foundation is scientific
11 charlatanism."
12 Why was that statement withdrawn?
13 A. (Witness Van Winkle) For two reasons. It appears
14 that in fact TI has done that type of analysis. And I guess
15 second of all, the fact that they have done that sort of
16 analysis would cause us to undertake a second look at just how
17 accurate or feasible we feel that type of extrapolation is,
18 to what extent do we feel that type of extrapolation from the
19 catch per unit effort data, to what extent you're justified
20 in carrying it to this extent.
21 Q. Are you in essence saying that, based on what you
22 saw in the multiplant report, the characterization in the
23 sentence would be correct, but before you applied it to what
24 they suggested they have done in the reports to be released --
25 you would not apply this phrase without actually looking at

blt 5

it to see if it was different than what they had originally done or whether they had improved their analysis in some manner, improved the use of the data base or the assumptions they used at the time they put out the multiplant report?

A. I'd say both.

Q. Have you heard anything in the proceeding thus far that would indicate, other than the fact that they did not use drift nets in their calculations, have you heard anything that would indicate that they have an improved data base as to the commercial fisheries, or different assumptions with respect to what they produced in the multiplant report?

A. No, I have not heard any testimony that would indicate that the basic data base had been altered, other than as you mentioned.

Q. We have been talking about, have we not, the information -- is the Ricker type of stock-recruitment analysis we've just referred to one of the things that was originally referred to "some of the most interesting new information received from the Applicant in their submission"?

A. That's correct.

Q. Now, in response to Mr. Trosten's questions several times you agreed that their research program would produce data of better qualitative value to a certain extent, and certainly better quantitative value.

What is the significance of that improvement, the

blt 6

qualitative improvement, that is? How significant has been the qualitative improvement in the data base?

A. I have trouble answering that question, either in terms of yes, significant, very significant, not significant, or even trying to translate that into some order of magnitude where it's doubled, twice as good, or some such statement.

Q. In other words, whereas you previously said that it was qualitatively better, you can't in any way say how much better?

A. I would not attempt to, no.

Q. I'm going to try to make a differentiation along the lines of something you give in the statement, because I've been confused with sone inconsistencies.

From the beginning of these proceedings, starting back with the original operating license hearings, the Staff and the Applicant have basically had the same data before them, yet the assumptions they made with respect to those data and the type of analyses they performed and the conclusions they drew have differed consistently, is that correct?

A. Yes, in places.

Q. Do those differences apply with respect to your Indian Point 3 FES? Did you still have differences with the Applicant in terms of their interpretation of data?

A. The differences there never really got highlighted in the sense that an FES was never cross-examined, and there

blt 7

1 was never a full-blown hearing at that time.

2 But I certainly sense that yes, there were still

3 areas where the Applicant was not in agreement with the

4 positions that we were taking in the Indian Point 3 Statement.

5 Q In the testimony of the Applicant at one point,

6 they assigned 79 percent of the variation in juvenile abund-

7 ance -- this is from pages 13 and 14 of the testimony --

8 they assigned 79 percent of the variation in junvenile

9 abundance to abundance of predators, egg production and

10 temperature change, rate of temperature change, and left 21

11 percent for all the other factors.

12 Hadn't the Staff previously suggested that fresh

13 water run-off would be a major factor in determining year-

14 class abundance?

15 A Would you clarify where you picked up that 70

16 percent?

17 Q Seventy-nine percent? It's the first word on the

18 last line of page 13.

19 A Okay.

20 Q Let me amplify it by stating under cross-examination

21 Dr. McFadden indicated that three components of the 79 per-

22 cent were the three most significant variables they discerned

23 among the ones they tested, which would mean that the

24 abundance of bluefish in yearling or older striped bass

25 accounted more for the variation in juvenile abundance than

blt8

1 did fresh water run-off, according to their analysis.

2 Is that what you would have expected, based on

3 the information you had seen up until this time?

4 CHAIRMAN JENSCH: I wonder if the gentleman over

5 there could stop his packing so that we can hear the question-

6 ing and the witness' answers?

7 Thank you.

8 WITNESS VAN WINKLE: I'm sorry. Could you ask

9 the question again?

10 MR. SHEMIN: Sure.

11 BY MR. SHEMIN:

12 Q. The combination of this document, pages 13 and 14,

13 and Dr. McFadden's responses to various questions lead to

14 the conclusion, based on their analysis, that predation or

15 abundance of predators, bluefish and yearling and older

16 striped bass, has a larger effect on the variation of juvenile

17 abundance of striped bass than does fresh water flow.

18 Does that coincide with what your expectations

19 would have been, or is this something that you find at odds

20 with what you would have thought?

21 A. (Witness Van Winkle) I have no strong preconceived

22 notion about how, you know, what might have fallen out of

23 that.

24 I think that the Staff, if not in writing, certainly

25 we have felt that fresh water flow was likely to be an

blt 9

important variable, although I am aware from a number of the multiple regression analyses that I have seen previously that fresh water flow did not appear to be quite as important as perhaps it has been shown to be out in the San Joaquin-Sacramento system.

Q. The statement in writing was on page V-180 of the FES for Unit 3, which indicates that fresh water run-off appears to be a major factor in determining the success of the year-class.

You mentioned the San Joaquin system. Are you referring to analyses by Harold Chadwick, which in essence said that, since the nursery grounds are geographically located in a certain area, the extent of where the salt front was and where the spawn took place would be affected by run-off, and success of the fish in getting to the nursery ground would be affected by run-off to that extent?

A. Yes.

Q. Aren't most of the nursery grounds or a very large percentage of the nursery grounds in the Hudson down in the Tappan Zee area, Haverstraw Bay?

A. That's right.

Q. Shouldn't one in fact find a similar situation in the Hudson if one investigated in that area, pursued this line of reasoning?

A. I think all the experience from the California

blt10

1 system -- the experience in the California system suggests
2 something that would cause you to certainly look for it in the
3 Hudson system, but I don't think the fact that it exists
4 there and has not shown up here is cause for undue concern.
5 Q My page mark has fallen out. If you'll excuse
6 me for one second.
7 (Pause.)
8 In the Indian Point 3 FES, the Staff reached the
9 conclusion that the Applicant's research program was unlikely
10 to answer many of the significant issues that remained in
11 dispute at the conclusion of the prior operating license
12 hearing. Is that a fair summary?
13 A I think a fairer and more complete summary is
14 given in the FES here for the 2-year delay.
15 Q Are you referring to 4.1.2?
16 A I was looking for the place where the Staff had
17 just quoted out of the Indian Point 3.
18 MR. SACK: Is that 3-8?
19 WITNESS VAN WINKLE: I don't see it. Perhaps
20 the best thing is to refer back to the Indian Point 3 State-
21 ment.
22 This came up in testimony with Mr. Trosten this
23 morning.
24 MR. TROSTEN: Do you want to quote from page
25 5-2, -10 and -11? I have it here if you want to quote from it.

blt 11

MR. SHEMIN: I have it here. I was actually looking at the nine issues listed on page 204, I think -- they're listed on 203, actually.

WITNESS VAN WINKLE: Okay.

BY MR. SHEMIN:

Q In the FES, on page 204, immediately after the listing of those criteria, the FES stated:

"It is the Staff's judgment that the nine criteria listed above provide an unrealistic and unattainable basis for assessing the impact of plant operation on the Hudson River striped bass population."

Has that judgment changed-

A (Witness Van Winkle) No, but I think it was addressed by Dr. McFadden in cross-examination back at the Holiday Inn. I don't remember who was cross-examining him at the time, but he said that some of those had not proved to be realistic or attainable.

Q Is that different from saying whether or not they were relevant?

A No, I think we're all agreed they're relevant.

Q Do you think that with two or three years' data one can accurately do the type of analysis that would be required to factor out all the occurrences going on in the river that would cause natural variations in abundance or various other events sufficient to let one make determinations

blt12

as to power plant effects?

Do you think in a 2-year period you could factor out variation factors to be able to determine the effect of Indian Point 2's operation on the river?

MR. TROSTEN: Mr. Chairman, I believe that Mr. Shemin's question is misleading. There's a premise there that you're only dealing with two or three years' data.

Perhaps he ought to explain his question a little bit more clearly to the witness so that we can all understand what we're talking about.

BY MR. SHEMIN:

Q. Is it your understanding, Mr. Van Winkle, that Indian Point 2 was not operating until fairly recently? I believe that was asked previously and answered that it's been operating for -- how many years since 1973?

A. (Witness Van Winkle) I believe Indian Point 2 operated in '74 and '75 but not in '76.

Q. The actual operation of the plant would be two years in the context of the Applicant's research program, is that correct?

A. That is correct.

Q. Now, my question was, given the variables that relate to the river and that might affect abundance of the striped bass and other indices that one might use to determine what's going on in the population of the river --

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A. What variables might you have in mind when you say that?

Q. I'm sure you can think of many more than I can, and I can think of close to half a dozen. So I'm assuming that there are a significant number.

How many would you say would be relevant in an inquiry to determine what was affecting population changes from year to year?

A. At least half a dozen.

CHAIRMAN JENSCH: Can you list them or give us something on the record for these, please? What would be, say, the half-dozen variables?

WITNESS VAN WINKLE: Temperature, fresh water flow, predators --these are the three, I believe, that fell out of one of the analyses Texas Instruments did -- position of the salt front, indices of competitors. It would be a mix of biotic variables as well as chemical and physical variables.

CHAIRMAN JENSCH: Thank you.

BY MR. SHEMIN:

Q. Let me focus in a little more on what was said in the Indian Point 3 FES.

Immediately following the judgment that the criteria were an unrealistic and unattainable basis for assessing plant impact, you give as an example the null hypothesis of operation during the striped bass entrainment

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1 season of Indian Point Units No. 1 and 2 with once-through
2 cooling in '74 and of Units 1, 2 and 3 with once-through cool-
3 ing in '75 -- in no words, no effects from the operation
4 of those plants.
5 That was your hypothesis?
6 A (Witness Van Winkle) Yes.
7 Q After analyzing various factors, you concluded
8 the Staff expects this variance. The variance is the popula-
9 tion change, I take it. Is that the variance referred to
10 there?
11 MR. TROSTEN: What line are you on, sir? I can't
12 find it?
13 MR. SHEMIN: 10.
14 MR. TROSTEN: Line 10?
15 MR. SHEMIN: That's an estimate. I think it's
16 9.
17 MR. LEWIS: He's having trouble locating it.
18 MR. SHEMIN: I'll read it exactly.
19 On page 205 you state:
20 "Since 1974 and 1975 values would provide esti-
21 mates of the mean post-operational effect --"
22 CHAIRMAN JENSCH: Go slower for the Reporter.
23 MR. SHEMIN: "-- and of the variance about this
24 mean because of the numerous uncontrolled variables
25 in this complex system, including Bowline Unit No. 2

blt 15

and Roseton Units Nos. 1 and 2 coming on-line and the strong dependence of longitudinal distribution on fresh water flow, which varies from year to year, the Staff expects this variance to be large in spite of flow variance adjustments. Thus the Staff would not be surprised if the null hypothesis --" which is no plant effects "-- were not rejected, even if in reality the operation of Indian Point with once-through cooling reduced the number of young-of-the-year surviving the first year by an average of 25 percent over these three years."

End 15

MR. TROSTEN: Mr. Chairman, just so the record can be clear, the null hypothesis as to criteria 2 and 4.

MR. SHEMIN: Yes.

Well, I read the next sentence. "For the remaining six criteria, the staff feels there will not be adequate data to test the null hypothesis with no apparent effect." So my understanding of what this is -- and correct me if I'm wrong -- is that what you're saying is that, with basically two years of operational data for the Indian Point plant, there are just too many variables to be able to determine what effect the operation of the plant would be having on the young of the year; purely empirical data-gathering.

Is that what this says, in a nutshell?

(Pause.)

WITNESS VAN WINKLE: As I remember, what stimulated this paragraph you've been reading from is somewhat theoretical treatment of the setting up of null and alternative hypotheses.

CHAIRMAN JENSCH: The question was, does his statement generally sum it up in a nutshell? Then you can explain it if you like. Is his statement a fair summary of what's represented there?

WITNESS VAN WINKLE: Yes.

CHAIRMAN JENSCH: Perhaps you could explain what stimulated it.

WITNESS VAN WINKLE: Right.

What stimulated this was the statement that appeared, I believe, in the McFadden testimony of '73, about this being able to detect a 25 percent difference with a 95 percent level of confidence. And from the time I saw that, I had serious doubts that that was attainable, and I still feel that way.

I believe your line of cross examination of Dr. McFadden yesterday, at least, suggested to me that he may feel the same way, although I don't want to put words in his mouth. But he has not pursued the documentation to that point.

BY MR. SHEMIN:

Q In the FES for Indian Point 3, I believe you raised some questions as to whether you could do extended analysis of inter-year variations using not only the data gathered in 1973, but the data gathered running back to the Krass and McCann (phonetic) study, perhaps even Rathjen and Miller; because the extent of the data gathered in those earlier studies, andthe differences in gathering techniques, made it hard to compare the data for the purpose of detailed inter-year changes. Is that correct?

A (Witness Van Winkle). Yes. Do you have particular pages in reference here?

Q My assistant here -- yes. On page V-209, you stated, "The staff believes that the application of analysis of various and multiple-regression techniques, which are used extensively by Texas Instruments in particular, are powerful tools for testing hypotheses and quantitatively characterizing your systems.

1 Nevertheless, any statistical analysis is constrained, not only
2 by the quality of the data, but by the experimental design. In the
3 present case, the major and unavoidable flaw in the design is
4 that there is no experimental replication, and no simultaneous
5 control or simultaneous alternative treatment with which to com-
6 pare the results from the research program. Rather, the Applicant
7 must rely on a baseline of prior environmental measurements going
8 back to the mid 1960's, which were collected by different people
9 and different organizations, using different techniques and diffe-
10 rent equipment with somewhat different and more limited objectives
11 in mind."
12 Does that opinion still hold?
13 (Pause.)
14 A. Yes.
15 Q. Is it important to have -- well, beach seining can be
16 conducted with different types of techniques and different types
17 of nets, and by different people. Would the results tend to vary,
18 based purely on those differences? Could they vary on those
19 differences?
20 A. Certainly, to some extent; yes.
21 Q. Do you think that you can factor out variations, those
22 variations, reliably after the fact?
23 A. It depends on what information you have on how people
24 did things in one year versus another year. If you have the ap-
25 propriate information, yes; you can attempt to make some correction

or adjustment. In other cases, you may just not have enough information. And so, there may be unknown differences that may be affecting the results.

Q So that, would the procedure you would recommend be, before you use these beach seine data for inter-year comparisons, you would first see if you could make necessary corrections? Presuming you could, you would make those corrections before you prepared the data?

A Yes.

Q And if you couldn't make the necessary corrections, you wouldn't attempt the analysis?

A You might not know --

Q You might attempt the analysis, and offer it for what it was worth, with various caveats?

A Right. Just don't forget the caveats.

Q Well, I've learned that very carefully over a series of years.

In their comments to this statement, the Applicant characterized the research program data relevant to the data gathered in earlier studies; it characterized the data from the earlier studies, my recollection is, relative to their program, as of poor scientific quality, and leading to serious errors in striped bass abundance, juvenile movements, migration, and so on and so forth.

Do you recall that at all?

MR. TROSTEN: Could you find the particular comment?

MR. SHEMIN: Yes. I gave a pretty good quote, given his memory. But it's in here somewhere.

(Pause.)

MR. TROSTEN: You're referring to Con Edison's comments in the appendix. Is that correct?

MR. SACK: On the extension proceeding?

MR. SHEMIN: Well, it's in one of the appendixes. That's the trick.

(Pause.)

MR. SACK: Are these comments on the Indian Point FES, Mr. Shemin, on the extension proceeding?

MR. SHEMIN: I'll tell you in one second, if I can find it. I think it's the FES, because I just couldn't find them on the extension. Yes, they're in the FES, on the Indian Point 3 FES, Appendix I, page I-70, commenting on pages V-79 to V-82 of the Indian Point 3. I guess it's the DES.

They stated, "Staff's position on downstream migration of these young striped bass, in relation to entrainment by Indian Point power plants, as developed in V-79 to V-82, is based upon data of very poor scientific quality compared to data now available from Applicant's ecological study."

CHAIRMAN JENSCH: Wait a minute, just a minute. Would you comment, please?

MR. LEWIS: I-70?

MR. SHEMIN: Yes, on the right-hand side, comment number 156.

MR. SACK: Is that volume 2?

MS. CHASIS: Yes, it is.

MR. TROSTEN: Give us a moment while we find that, too.

(Pause.)

I-70. And you're reading from where, please?

MR. SHEMIN: Comment number 156.

CHAIRMAN JENSCH: I guess everybody has it now, Mr. Shemin. Have you finished your reading of it?

MR. SHEMIN: Well, I was going to ask a question about it.

CHAIRMAN JENSCH: All right.

BY MR. SHEMIN:

Q The Applicant characterized the data as of very poor scientific quality, compared to their data, I assume. The relative nature of their comparison probably is the major thrust of their statement. But I'd like to refer you to your response to that comment, which is in your FES on page 12-105.

(Pause.)

Let me read what you wrote in the FES for Indian Point 3. "The staff adamantly disagrees with the Applicant that the data generated by Rathjen and Miller in 1955, and by the Hudson River Fisheries investigations, 1966 through '68, are of

very poor scientific quality compared to data now available from the Applicant's ecological study. Is that still your view?

MR. TROSTEN: Mr. Chairman, Mr. Shemin's question, I think, has an inherent confusion in this which I think we ought to clarify for the record. The document from which he is reading was published in February 1975. I think Mr. Shemin should clarify his question, so that he asks the witness to what data he is directing the witness' attention in asking for a response.

CHAIRMAN JENSCH: Whether the staff adheres to the previous staff view; that was your question, wasn't it?

MR. TROSTEN: With respect to the data available to the staff at the time this statement was written, Mr. Chairman? Is that what his question is?

CHAIRMAN JENSCH: I take it it's in reference to the Rathjen and Miller and the Hudson River Fisheries investigation, when it's meaning lack of scientific quality.

MR. SHEMIN: Mr. Trosten is suggesting, Mr. Chairman, that the data since Mr. Van Winkle made this statement has immensely improved in the ecological study program, and therefore, perhaps Mr. Van Winkle was being misled in not noting that I was referring to the excellent '74 and '75 data, as opposed to what might be not so good '73 data.

MR. TROSTEN: I simply wanted, Mr. Chairman, that the record be entirely clear, so that when people go back and read these things in the future, everybody -- including the witness

1 and Mr. Shemin, and anyone else who's reading this -- know what
2 Mr. Shemin's question was.
3 MR. SHEMIN: That was what I was trying to elicit from
4 the witness. I thought he would draw the distinction in his
5 answer.
6 MR. TROSTEN: I see. Very good.
7 CHAIRMAN JENSCH: Let the interrogation go on. If
8 you think there's some deficiency, you may pick out the item.
9 But I think it was fairly clear what the question was. Proceed.
10 Can you answer the question?
11 WITNESS VAN WINKLE: Yes.
12 BY MR. SHEMIN:
13 Q Addressing ourselves to the quality of the data, which
14 is what we're talking about here, do you think that the quality
15 of the data in the '55 and '66 through '68 studies can be charac-
16 terized as of very poor scientific quality relative to the Appli-
17 cant's data?
18 A (Witness Van Winkle). Relative to the Applicant's
19 data as of the time everyone wrote this, or as of the present?
20 I would still disagree with the Applicant. I mean, the phrase,
21 "of very poor scientific quality," I think, is not the issue at
22 stake here. The quality of the studies done in the '50s and '60s,
23 for what they were designed to do, is fine. It's a question of
24 the data that have been generated by the Applicant's research
25 program are considerably more comprehensive and extensive.

Q Are you saying, therefore, that you can use the data in those earlier years for some purposes, but not for others, such as certain inter-year comparisons with the Applicant's data? Would that be a fair synethesis of the series of questions I've asked?

A No. There may be some aspects of the Rathjen and Miller data summarized in '55, or the Hudson River Fisheries investigating data. Or you could carry over and make a comparison with the data from those years with the data collected by Texas Instruments. In other cases, it is not possible to do that.

Q In what cases was it your feeling that it wasn't correct to do that? What types of analysis?

MR. LEWIS: I think it's a very broad question.

MR. SHEMIN: Well, I think it's the reverse. It's specific. Actually, the broad question was already answered previously by reference to a quote from the Indian Point 3 FES, and elaboration on that, where it was stated that there are some things that you can't use the earlier data for for the purpose of inter-year comparisons.

But now, apparently, it's not a blanket statement that you can make. You're suggesting there are some that you can make inter-year comparisons for, and what I'm wondering is, what types of things are -- well, whichever category is broader or narrower, I don't want you to go through 99 things in one category when you can give me the one in the other category.

BY MR. SHEMIN:

Q. Could you give me an example of how you would differentiate, or explain the differentiation that you just referred to, as to what you could and could not use the data for for inter-year comparison purposes?

A. (Witness Van Winkle). Well, it's easier to name things that, presumably, there's reasonable basis for, where it is possible to compare; you know, where it has been done, and look at the spatio-temporal distributions of the spawning that occurred in those years -- say in the 1966-'67, and also '55, and compare that with '73-'74-'75.

I have not specifically looked at the Hudson River Fisheries investigation data on beach seining, so all I can say is that in TI's judgment, apparently, with some corrections, they felt it was possible to make the comparison. I don't have any independent judgment that I can offer on that at this time. Examples of aspects of the research or comparisons aren't possible. Undoubtedly, other fish species data are -- you know, the Rathjen-Miller, Hudson River Fisheries investigation studies pretty much concentrated on striped bass, so that you wouldn't be able to do analyses that involved striped bass/white perch, for instance, going back into the Hudson River Fisheries investigation data, or the Rathjen-Miller work.

Q. Based on empirical data gathered thus far during the research program that you have seen -- the data itself, and not the testimony or anything else; the data that you have seen, and

1 the analysis that you have been able to perform on that data --
2 have you, as yet, changed your mind as to your original conclusions
3 in the FES for Indian Point 3?
4 MR. LEWIS: Which conclusion are you referring to?
5 MR. SHEMIN: Well, I tend to equate the Indian Point
6 3 FES and the operating license determination for Indian Point 2,
7 and the ultimate conclusion recommended by both was that the
8 closed-cycle cooling should be installed. And I lumped 2 and 3
9 together.
10 MR. LEWIS: So, in other words, the ultimate conclu-
11 sion is what you're asking about?
12 MR. SHEMIN: Yes.
13 BY MR. SHEMIN:
14 Q Have you seen data, and been able to perform your own
15 independent analysis on that data, which would lead you to change
16 your conclusions expressed in this document by the Board at Indian
17 Point 2, and presumably by the staff there?
18 MR. TROSTEN: Now, Mr. Shemin, let's be very clear
19 about this. The ultimate conclusion in the Indian Point 3 FES
20 includes the stipulation which provides for an additional period
21 of study before closed-cycle cooling is installed. Now, let's
22 be very, very clear what it is that you're asking Dr. Van Winkle
23 to testify to.
24 Would you restate your question, please?
25

BY MR. SHEMIN:

Q Excluding this stipulation, Dr. Van Winkle, the ultimate substantive conclusion of the FES at the time it was prepared , was that barring certain developments which you could not foresee at the present time -- the present being February '75 -- closed-cycle cooling should be installed at Indian Point 3. Is that a fair --

MR. TROSTEN: What date, Mr. Shemin?

MR. SHEMIN: What date with respect to what? The document is February '75.

MR. TROSTEN: Mr. Chairman, I think this is an extremely broad question in which, number 1, I think that the conclusion of the Indian Point 3 Final Environmental Statement is a matter of record. Now, if Mr. Shemin wants to go and point Dr. Van Winkle to a particular provision in the Indian Point 3 Final Environmental Statement, and ask him whether he agrees with that particular statement, I certainly have no objection to that. But I think that it's putting the witness in an extremely difficult position, and is going to confuse and cloud the record to have some broad, general type of characterization as to what the conclusion is, which may be one thing in Mr. Shemin's mind and another thing in the witness' mind; and then, later, have something in the record that says, well, the broad, general conclusion, do you still agree with that?

I think Mr. Shemin has to be very particular about

1 this.

2 CHAIRMAN JENSCH: You can phrase your question in the
3 form you have just indicated, if you desire, at a later time. I
4 think the question and comment was, have you seen any data, since
5 the FES at Indian Point 3, which would lead to different conclu-
6 sions; and he has been asked to appraise the data there. I
7 think his question is a reasonable one, and if the witness under-
8 stands it, it's within the scope of inquiry.

9 The objection is overruled.

10 MR. TROSTEN: Mr. Chairman, may I ask if you would
11 state what conclusion, and point to a particular page?

12 CHAIRMAN JENSCH: Any one, I take it, any one; any
13 data that would affect the conclusion.

14 MR. TROSTEN: Well, I would simply ask that the wit-
15 ness' attention be directed to the page where the conclusion is
16 stated, sir.

17 CHAIRMAN JENSCH: I take it he knows what the conclu-
18 sion is. I don't think there's any question about it. I thought
19 he had worked on the FES for Indian Point 3, and I think either
20 you or Mr. Fidell said something -- you have to have shorthand
21 methods that are sometimes useful. I thought this was a short-
22 hand method.

23 BY MR. SHEMIN:

24 Q Mr. Van Winkle, is it your understanding that the
25 recommendation of the February '75 Indian Point 3 FES, putting

1 aside the legal nature of the stipulation that the substantive
2 recommendation was that after considering all the benefits and
3 costs involved, Indian Point 3 should be conditioned on the opera-
4 tion of the plant with closed-cycle cooling?
5 A (Witness Van Winkle). Yes.
6 Q Is that the basic conclusion that was reached with
7 respect to the analysis, or with respect to the Indian Point 2
8 operating license proceeding? Is that your understanding, that
9 Indian Point 2 should be operated with closed-cycle cooling?
10 A That is correct.
11 Q Now, since those events have occurred, have you had
12 the opportunity to see, or have you seen, any data and performed
13 any independent analysis of that data, which would lead you to
14 believe that those conclusions should be changed?
15 A My response to that is that the decision for closed-
16 cycle cooling at any date is a policy decision that's made by NRC,
17 and that my job is to provide the best technical, sound scientific
18 input on the aquatic impacts that I can; to work with them, and
19 to work with them in helping them to reach a decision as to what
20 they want to do.
21 Q Well, we agreed before, didn't we, that the problem
22 with the differences of opinion between Applicant and staff did
23 not relate so much to different data available, but to the assump-
24 tions made with respect to the use of that data, and the methods
25 of analysis performed, at the end of which there were differences

of opinion? Do you recall that agreement?

A. Yes.

Q. Okay.

Now, putting aside everything that you have gotten from the Applicant, either in this, as a support to their amendment request, or in the testimony which includes data that you have not seen, and analysis that they have performed on that data; and, basing your determination or your recommendation or your opinion entirely on data that you have had a chance to look at and independently evaluate -- based on that data, can you tell me what recommendation you would give at this point if you were asked for your opinion by the Commission, whether this should be changed or not changed?

MR. TROSTEN: Mr. Chairman, I object to the question on the grounds that he's asking Dr. Van Winkle for a conclusion which is not pertinent to this proceeding. This proceeding is not a proceeding to determine whether or not we should have once-through or closed-cycle cooling. It seems to me that it's improper to ask the witness that question, and it's particularly improper since the witness has already testified that the data that he has personally reviewed are data that go through the year 1973.

And, since the purpose of this proceeding is to provide additional data to Dr. Van Winkle and others on the Nuclear Regulatory Commission staff, to enable the determination to be made as to what should be done here. So I feel that it's

1 improper for Mr. Shemin to question the witness in this regard.
2 All of us -- we certainly have been attempting to avoid getting
3 into the fundamental issue. Mr. Sack explained the nature of our
4 questioning with regard to certain staff testimony, and I think
5 that Mr. Shemin should be bound by the same principles.
6 CHAIRMAN JENSCH: Well, he certainly is being bound
7 by the same principles, and I think, to the extent to which the
8 questioning goes beyond and goes into a question of whether there
9 should be closed-cycle cooling or not, it is not at issue here
10 at all. I understood the first form of his question, however,
11 when he first expressed it -- have any data been presented which
12 would indicate any change as to the damage situation in the river?
13 As I understood it, it did not relate to whether it
14 should be closed-cycle or not. That's the extent to which I
15 think the inquiry can go. I think the last form of this question
16 is objectionable, as you pointed out.
17 MR. SHEMIN: Well, let me restate it. I didn't in-
18 tend it, really, to be the broader question. The reason I crea-
19 ted this separation of analysis and data is because, as Mr. Van
20 Winkle agreed, the difference of opinion here has not been over
21 the use of the available data bases of the different parties in
22 the Indian Point 3 FES, and in the operating license proceeding.
23 Rather, it's been in the use of that data. And I want to exclude,
24 for the moment, any benefit of the doubt he may give the company
25 out of professional deference, or for whatever reason; just, in

1 fairness, not to prejudge their determinations.

2 I want him to exclude everything that they have said

3 based on data that he hasn't had the opportunity to evaluate;

4 in part because, in the past, when they evaluate data, it turns

5 out they have different conclusions. Therefore, I want him to

6 give me his opinion without benefit of the testimony of Texas In-

7 struments, and without benefit of any data referred to in their

8 environmental report submittal, which he hasn't had a chance to

9 independently evaluate.

10 BY MR. SHEMIN:

11 Q Based only on that which you have seen, and been

12 able to evaluate, does that material and that evaluation lead you

13 to change your recommendation you made in the Indian Point 3 FES?

nd t. 6 14 A (Witness Van Winkle). No.

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A No, the restriction imposed essentially means you are talking about my having worked through the 1973 data with minimal influence of anything since then.

In other words, I am just saying that I feel the position we adopted in the Indian Point 3 FES is, you know, where we in fact stood after that analysis we did at that time.

MR. SHEMIN: I have no further questions at this time.

CHAIRMAN JENSCH: Shall we take a little half-hour break for something to eat? Is a half hour enough?

MR. SACK: How about 45 minutes.

CHAIRMAN JENSCH: 45 minutes. It's going up; are there any other bids?

(Laughter)

If not, let us recess to reconvene in this room this afternoon at 2 o'clock.

(Whereupon, at 1:15 p.m., the hearing was recessed to reconvene at 2:00 p.m., this same day in the same place.)

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AFTERNOON SESSION

2 p.m.

CHAIRMAN JENSCH: Please come to order.

As I understand, the Attorney General has completed his cross-examination; is that correct?

MR. SHEMIN: Can I ask one further question.

All right, proceed.

Whereupon,

DOCTORS GECKLER & VAN WINKLE

resumed the stand as witnesses on behalf of Regulatory Staff and, having been previously duly sworn, were examined and testified as follows:

CROSS-EXAMINATION

BY MR. SHEMIN:

Q Dr. Van Winkle, could you tell me what your opinion of the Ricker curve presentation made by the Applicant is in its multiple-plant report, what the effect of adding data points subsequent to the original presentation of that curve have on your opinion of that presentation?

MR. LEWIS: Are there two questions?

MR. SHEMIN: No, just a fully stated question.

BY MR. SHEMIN:

Q Could you update your opinion of the Ricker curve based on data gathered relevant to that presentation since it was presented?

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MR. TROSTEN: Which data?

MR. SHEMIN: The commercial fishery data subsequent to 1972.

WITNESS VAN WINKLE: We did carry out that analysis and the data points for 1973, 4, and 5, using a five-year lag. The correlation coefficient dropped from minus-.81 to minus-.62. The 1973 data point was in the upper right-hand quadrant which put it sort of out in left field. It was the cause for the correlation coefficient dropping. It still is statistieally significant at the 5 percent level, but I do not right now have the exact probability level, it was not as statistically significant as it was without the addition of these three data points.

BY MR. SHEMIN:

Q Could you add those three data points for the T-plus-6 time lag?

A No, I did not.

MR. TROSTEN: Mr. Chairman, I have a few questions, just two, actually, with respect to the cross by Mr. Shemin. May I put them to the witness now rather than waiting until all further cross is over?

CHAIRMAN JENSCH: I thought you had completed your examination.

MR. TROSTEN: Mr. Chairman, when we discussed the order of cross --

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1 CHAIRMAN JENSCH: You can come back to it, but why
2 don't you wait until Hudson River gets done?
3 MR. TROSTEN: It's just two questions, Mr. Chairman,
4 and it relates to what was said immediately before lunch.
5 CHAIRMAN JENSCH: All right, go ahead, then.
6 BY MR. TROSTEN:
7 Q Dr. Van Winkle, referring to the third full para-
8 graph on page 5-209 that Mr. Shemin quoted to you from the
9 Indian Point 3 Final Environmental Statement, do you have
10 that?
11 A (Dr. Van Winkle) Just a moment.
12 (Pause)
13 Okay.
14 Q You are aware, are you not, Dr. Van Winkle, that
15 there are important elements in Con Edison's research program
16 designed to evaluate the effects of once-through cooling
17 on the striped bass population and on the ecosystem generally,
18 that do not rest on a multiple regression analysis technique
19 that is described in that paragraph; is that correct.
20 A Yes.
21 Q Now, in the sentence in which you state in the
22 present case the major and unavoidable flaw in the design
23 is that there is no experimental replication, et cetera; you
24 see that sentence there?
25 A Yes.

CHAIRMAN JENSCH: Are you referring to Indian Point 3 again?

MR. TROSTEN: Yes, I was referring to a sentence in that paragraph.

CHAIRMAN JENSCH: Okay.

BY MR. TROSTEN:

Q Do you agree, Dr. Van Winkle, that although there may be a flaw in the experimental design of the program of the character you describe that, nevertheless, the results of Con Edison's research program as presented in January could nevertheless validly be used to reassess the issue of once through versus closed cycle cooling?

CHAIRMAN JENSCH: When?

MR. TROSTEN: Let me try to explain the question.

CHAIRMAN JENSCH: If you would?

MR. TROSTEN: Mr. Shemin quoted to Dr. Van Winkle from the February 1975 FES and he quoted a sentence which reads, in the present case the major and unavoidable flaw in the design is that there is no experimental replication and no simultaneous control or simultaneous alternative treatment with which to compare the results of the research program.

And he asked whether Dr. Van Winkle was in general agreement with this. Dr. Van Winkle testified he was. And my question was: whether he agreed that although there could

be a flaw in the experimental design of the character that he has described, that on the basis of what he knows the data he has seen so far and what he has heard in testimony and seen by way of exhibits that have been introduced in this hearing that nevertheless does he believe that Con Edison's research program as it is expected to be presented in January could nevertheless validly be used to reassess the issue of once-through versus closed-cycle cooling.

CHAIRMAN JENSCH: My problem is the last part of it again, it hasn't been presented; it has not been tested. Supposing the witness answered the question and Attorney General wants to say, well, what is that thing? Then we are into something that no one can compare and have before us.

I think these unknown factors, reports not yet completed, are not the basis for proper cross-examination.

MR. TROSTEN: All right, I'll withdraw the question.

CHAIRMAN JENSCH: That's all the questions you had?

MR. TROSTEN: Yes.

CHAIRMAN JENSCH: Hudson River?

WITNESS VAN WINKLE: Mr. Chairman, if I could correct my answer to Mr. Shemin's last question as to whether we had done the calculation for the six-year lag? We have.

The correlation coefficient was minus-.22.

MR. SHEMIN: Down .02 from your previous calculation?

WITNESS VAN WINKLE: Was it minus-.24?

MR. SHEMIN: Yes.

WITNESS VAN WINKLE: Yes, it's down somewhat.

BY MS. CHASIS:

Q I would like to address this question to Dr. Van Winkle, the series of questions.

You indicated that in connection with your work on the DES and FES you reviewed the environmental report submitted by Applicant and supplements thereto; those supplements did include 1974 data; did they not?

A (Dr. Van Winkle) Yes.

Q In your opinion did the include the bulk of the 1974 data that was collected by the Con Edison contractors?

A As I remember the report it was complete in a number of areas up through September or so, but not past that time.

Q And did your evaluation of that 1974 data in addition to the 1973 data lead you to conclude that -- did it lead you to the conclusion that the earlier assessments which you had made in the Indian Point 3 FES needed to be evaluated or not.

MR. LEWIS: Needed to be evaluated?

MS. CHASIS: Reevaluated.

WITNESS VAN WINKLE: To the extent we looked at the 74 data it did not appear to differ that much from the

73 data in terms of the gross features of duration of the spawning period, where the eggs were spawned, freshwater flow, temperature regimes; there were no, you know, no major differences between 74 and 73 that caught our eye, you know, that would lead us -- that would have led us -- in the direction of saying, oh, gee, we really need to do an in depth analysis using 74 data.

BY MS. CHASIS:

Q So there is a statement in the FES I am referring to, Section 3.2.2, page 3-2, the last sentence, which related, which states the Staff has found no new information in Applicant's ER -- well does that new information include both the 73 and 74 data which was included in the ER?

A (Dr. Van Winkle) This stenence you quoted is really directed at the key input parameters to this young of the year model which are the entraining F Factor, f_c, this distributional effect which was not new information in this multi-plant report. It related to these key input parameters.

Q I see.

Now, this point maybe we've covered it before but for purposes of clarification I would like an answer:

In the Indian Point 2 licensing proceeding the Staff took the position that it was satisfied a sufficient amount of data on the striped bass existed to do a proper evaluation of this species and the impact of the power

1 plant Indian Point No. 2 on the striped bass; I would like to
2 ask Dr. Van Winkle whether or not he adheres to the position
3 the Staff took in Indian Point 2 proceeding?
4 MR. TROSTEN: What position, please, would you be
5 very specific about what position it is? Point us to a
6 section in the Indian Point FES, please.
7 MS. CHASIS: This was in the hearings of the Indian
8 Point 2 proceeding. I don't have the transcripts here.
9 MR. TROSTEN: I really must insist Ms. Chasis point
10 to a particular part, a particular conclusion; otherwise
11 the record is going to become extremely confused.
12 MS. CHASIS: I think it's the transcript of the
13 Indian Point 2 proceedings.
14 CHAIRMAN JENSCH: Can you give the transcript pages?
15 MS. CHASIS: 9315 - 9321.
16 CHAIRMAN JENSCH: Do you have copies?
17 MS. CHASIS: No.
18 CHAIRMAN JENSCH: Could you quote something?
19 MS. CHASIS: I don't have a direct quote.
20 MR. TROSTEN: We really must have the quotation.
21 CHAIRMAN JENSCH: Subject to check. Proceed.
22 You represent that this was taken from the transcript?
23 MS. CHASIS: That's right.
24 CHAIRMAN JENSCH: Proceed.
25 BY MS. CHASIS:

Q At that section it was the Staff's position in the proceedings, reflected in its statements in that section, hat a sufficient amount of data existed on the striped bass to do at that time a proper evaluation of the species and the impact of the Indian Point 2 power plant on the species.

My question is: do you adhere to that position the Staff took in the Indian Point 2 licensing hearing?

MR. LEWIS: Based upon what data now?

MS. CHASIS: That would be data which existed in the course of the Indian Point 2 proceedings.

WITNESS VAN WINKLE: No, I do not agree with that.

BY MS. CHASIS:

Q Why?

A (Dr. Van Winkle) I think in the ensuing four years, or even three years -- let's not count 76 -- that there has been enough additional information collected, and we have looked at it ourselves to the extent that we felt that a number of the positions that had been adopted at the time of the Indian Point 2 hearings in light of these new data needed to be revised.

Q Those revisions were made in the Indian Point 3 proceeding?

A That's right.

Q That constituted, did it not, a fresh look which the ALAB had --

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A Yes.

Q Now I would to refer to the Indian Point 3 impact statement, and I am referring to page 5-199 which is the discussion of Applicant's research program; and I would like to refer you to Item 3 on that page. This is a reference to a position of the Staff in the Indian Point 2 proceeding; it was that the research effort proposed by the Applicant is unlikely to conclusively demonstrate that operation of Indian Point Units Nos. 1 and 2 with once-through cooling will not have an unacceptable adverse impact on fisheries supported by the Hudson River.

Do you agree with that?

A Yes, I would agree with that statement, although I think it requires clarification of the standard conclusively demonstrated. I think we could have a research program going on for 20 more years and there would still be doubt.

Q I see.

Now, there was some discussion earlier -- I am now moving to page 5-205 of the same statement, Indian Point 3 FES; concerning what the post-operational data would be able from the Applicant's resarch program, would be able to demonstrate.

And I believe in answer to the question put by Mr. Shemin you stated the discussion at pages 5-205 were triggered in response to a prediction made by Dr. McFadden

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1 earlier which now he no longer -- he said he was not willing
2 to make it at this time in this proceeding.
3 MR. TROSTEN: I object to that, Mr. Chairman,
4 because that is not what Dr. McFadden said.
5 MS. CHASIS: Let the record speak for itself, then,
6 I don't want to mischaracterize it.
7 BY MS. CHASIS:
8 Q What I would like to ask is, putting aside
9 Dr. McFadden's proposition, in your opinion will the two years
10 of post-operational data be able to tell us whether or not
11 the impact of Indian Point 2 even if it were to reduce
12 the young of the year population by 25 percent, whether that
13 data could tell us whether that impact had occurred or not?
14 In other words, what I am trying to say is
15 are your reservations as stated here applicable whether one
16 is dealing with Dr. McFadden's hypothesis or not?
17 A (Dr. Van Winkle) Yes, they are.
18 Q And in your mind do you have any estimate of what impact
19 level would have to occur in order for the post-operational
20 data to tell us -- two years of post-operational data -- to
21 tell us whether or not an impact from the plant existed; or
22 can you make that estimate?
23 A I can give you what I have sort of used for myself
24 as a sort of intuitive feeling for what I think could be
25 detected on the basis of empirical data in this empirical

jrb13 1 modeling approach TI has used.

2 I would feel the cutoff point might be something

3 like 50 percent, that I would doubt if empirical data would

4 be collected that would demonstrate conclusively by some

5 statistical criteria, you know, 50 percent would be sort of

6 I think the margin sensitivity.

7 Q And below that 50 percent level the impact --

8 it would be demonstrated that impact below the 50 percent

9 level did not exist?

10 A I think you would have difficulty separating out

11 the variation that was due to the plants versus the variations

12 due to other potential factors that could have been affecting,

13 you know, abundance.

14 Q So the answer would be yes?

15 A Yes.

16 Q Now I have a question that relates to really what

17 has come up in the course of these proceedings, and a comment

18 which you made in the Indian Point 3 FES on these same two

19 pages, and that is it seems to have been assumed 74 and 75

20 would be post-operational years. Yet the statement is made

21 here that to turn the 1973 values, preoperational, seems

22 questionable during the 1973 striped bass entrainment season.

23 Units Nos. 1 and 2 were operating pumps for testing purposes

24 every day of the striped bass entrainment season. They were

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25 to July 31, 1973, that's running from the bottom of page

jrb14

5-204 to 5-205.

And is it your present position?

A Yes, I think all you can say is that out of the three years, 73, 74, 75, the pow er plant intake flow was lowest in 73; so in a sense you could use 73 as your reference mark for the other two years. But it should be clear that it is not a zero preoperational level.

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Q. Now, again referring to the position taken by yourself and the Staff in the Final Environmental Statement for Indian Point 3 on the Applicant's research program, I have reference to 5-209 and the statement -- I guess it's the last sentence in the second full paragraph. The statement is in fact:

"It is certain that by 1976 much of the information required for a sound evaluation will not be available."

This is a comment on the fact that, even though the large expenditures of money by Consolidated Edison are in necessary condition to begin to understand the complicated ecosystem, it is not a sufficient condition.

I'd like to ask, is that a position to which you adhere?

A. I guess I would modify the wording of that sentence to some extent to say in fact it is certain that by 1976 much of the information that would be helpful for a more sound evaluation will not be available.

I think at any point in time you can take the information you have available to you and, given that information and its limitations, you can make as sound an evaluation as possible.

Q. But you obviously feel -- okay, what you say is you feel a sounder evaluation could be made. There is

blt2

1 information which you can identify which would enable you
2 to make a sounder analysis, which is not going to be available
3 in 1976. Is that correct?
4 A. Yes.
5 Q. Now, you state on page 5-209 that if there is any
6 quantum jump in the ability to forecast the impact of plant
7 operation on the ecosystem, that quantum jump will be based
8 primarily on the 1973-74 cycle of data and analysis.
9 Could you state the basis for that position?
10 A. I believe in response to questions on the same
11 quote previously that what I had primarily in mind in writing
12 that was the information on spatial-temporal distribution of
13 young-of-the-year, which up until that time we had the
14 Rathjen-Miller and HRF, Hudson River Fisheries, investigation
15 data.
16 And, if there was going to be any major change in
17 our understanding about things like time of going to the
18 shoals or distribution in a vertical direction, that was going
19 to show up in this first intensive riverwide program of Texas
20 Instruments.
21 Q. Thank you.
22 Now, you go on in that same paragraph to state
23 that the data of the quality required for a sound and practi-
24 cal assessment --
25 CHAIRMAN JENSCH: Will you keep your voice up,

blt 3

please?

MS. CHASIS: What? I'm sorry. I'm reading from this same section.

"The data of the quality required for a sound impact assessment has proven to be more difficult than anticipated."

BY MS. CHASIS:

Q And then you cite the example of the problems with the 1973 QLM data for estimating f factors other than f_c.

And you go on to state that:

"The difficulties of obtaining adequate data on major issues in controversy casts serious doubts on the Applicant's claim, and a final conclusion with respect to the date for closed-cycle cooling at Indian Point Unit No. 3 should await collection of further empirical data."

And you do go on subsequently and talk about issues which relative data may be collected on.

But, turning back to this comment on the 1973 f factor data, what were some of the problems which you had with that data? And are any of those problems applicable to the data on f factors other than f_c collected subsequent to this statement?

(Witness Van Winkle)

A. I think a general reference in response would be a section in the Unit 3 Statement which starts on V-89 and

blt 4

extends through page 101.

Without reviewing that, I may very well miss some points, but we were rather critical of the 1973 transect data. On page 95 I commented on two of our concerns, one of which was no information such as current measurements, thermal measurements, dye studies or hydrological intake models, has been presented to support the Applicant's assumption that the intakes at Bowline, Lovett, Roseton and Danskammer would draw 100 percent of their water from the upper quadrant.

The second one was the sampling methods in the transect and in the intakes differed substantially, and no information comparing the relative deficiencies and the possible sources of bias of the two methods has been presented.

I think a third criticism I indicated the other day was the fact of the rigid 2-week scheduling from April into August, and in at least some of the cases more than 50 percent of the samples were zeros which although, as Dr. Lawler pointed out, gives you information on whether or not this life stage is out in the river at that particular time, that's not the purpose of the studies.

The purpose of those studies is to estimate the intake f factor and, if the organisms aren't there, it's for that purpose wasted time.

Q. Now, from what you have heard in the course of this proceeding, the testimony of the Applicant's witnesses,

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do the concerns which you have just expressed that are contained in the Indian Point 3 impact statement about the f factor data gathered by QLM in 1973 apply to the f factor data gathered, the method for f factor data collection, by LMS and NYU in subsequent years?

A. I was encouraged by the news that La Salle studies had been undertaken at the Indian Point intake. So, with respect to the first of the three points I mentioned, there may be new information that appears that this has already influenced the way that LMS is going about their method of calculating f factors.

To the best -- with respect to the net efficiency, it sounds as though an effort is being made there; but it also sounds as though a study specifically directed at that question has not been undertaken.

With respect to the design of the sampling schedule, it appears that they continue to use a fairly rigid 2-week sampling scheme, which again is sort of a hit or miss proposition on the quality of the data that you get.

Of course, we keep hearing there are very few juveniles and the data tend to be rather weak for eggs and yolksac larvae. Well, my response to this would be that it may be necessary to go out of your way a little more to make sure that you are, at least at one of these plants, picking out a time when they are there and you can have large enough

blt6

1 numbers of organisms so you actually have some confidence
2 in your estimates of the intake f factor.
3 I guess a fourth area, in addition to the first
4 three, which has continued to be a source of frustration to
5 me -- and it appears from the testimony as though it is still
6 a problem -- is just the lack of analyzing the data and
7 presenting the data in a way that shows not only the calcu-
8 lated values or the mean or affected value but also some mea-
9 sure of the variation uncertainty that's associated with it.
10 Q In your view, that's a critical analysis that must
11 be performed to give a true reflection of what the data shows
12 or what the data can be used to show?
13 A I think it's critical. I think we demonstrated
14 that we thought it was critical in the rather lengthy sta-
15 tistical analysis we did in Appendix B of the Unit 3 Statement,
16 which was probably three man-months worth of work that we
17 put in on analyzing those data. That was on the basis of
18 the magnitude of the variances associated with these estimates
19 that led us to the direction of just using a range of .5 and
20 1 for all life stages at all power plants.
21 Q From what you've heard from the Applicant's
22 witnesses in this hearing and the testimony they've presented,
23 does it indicate to you that they are going to undertake
24 the kind of statistical analysis that you were referring to
25 in the January 1977 report?

blt7

A. I think all I heard from Dr. Lawler was that it was being worked on. I don't have an impression one way or the other whether it's going to be in the January report, but I'm confident that with sufficient prodding it will be done.

Q. Now, referring to the entrainment mortality or f_c factor, are you confident, Dr. Van Winkle, as to whether or not the net mortality study which was carried out can be applied directly to the entrainment mortality data which has been collected at Indian Point Unit No. 2?

MR. TROSTEN: Would you mind giving a reference to the exhibit, please?

MS. CHASIS: That's Exhibit No. OT-14, Licensee's OT-14.

BY MS. CHASIS:

Q. That's the NYU study of "Mortality of Striped Bass Eggs and Larvae in Nets."

A. (Witness Van Winkle) And your question is whether or not the results of the study can be applied to the estimation of the cropping factor?

Q. That's right, directly, without further testing.

A. I'd like to reserve judgment on that until I've really looked at that report myself.

Q. Dr. Van Winkle, with respect to the issue of compensation, in your opinion has the data which you have

bt 8

reviewed -- does it allow a quantifiable measure of the amount of compensatory reserve?

In other words, does that data provide sufficient basis for quantifying the amount of compensatory reserve in the striped bass population?

A Clearly, in my opinion, the bluefish predation data and the density-dependent young-of-the-year growth data do not. And I have my reservations that anything very directly can be done with the stock-recruitment data, although, as I indicated in a slightly different context, we are reserving judgment on that.

Q Let me ask you a matter of judgment.

Is the commercial fishery data which Con Edison uses to develop its stock-recruitment relationship the kind of data you would be willing to use to base any final decision on impact?

In other words, if that were all you had and one were going to rely on a compensatory mechanism operating in the manner you describe through the use of that data, would you be willing to base an ultimate decision about the impact of once-through cooling upon that data?

MR. LEWIS: You're referring to an ultimate decision not in this proceeding but on a question, for example?

MS. CHASIS: That's correct.

blt9

BY MS. CHASIS:

Q If you have the same reservation to answering that question that you had earlier, you can so state.

A (Witness Van Winkle) No, in this case I feel, even if the analysis were much stronger or obviously much weaker, one data set and analysis all by itself is, you know, not enough for myself or for an organization like NRC to base a stand on an issue this important.

Q With respect to the issue of contribution of the Hudson River fishery to the Atlantic fishery, in your opinion do the results of the Texas Instruments study as reported in OT Exhibit 2 as unmodified by the further refinements substantially differ from the results which you reached concerning contribution in the Indian Point 3 Final Environmental Statement?

Do you have this exhibit in front of you?

A. No. I remember the numbers.

MR. TROSTEN: May I be sure I understand? Are you asking whether these results are different from the results in the Indian Point 3 FES?

MS. CHASIS: I asked him if he considered them to differ substantially from the estimates that were made in the Indian Point 3 Final Environmental Statement.

WITNESS VAN WINKLE: The estimates for the outer zone contained in that report are in the -- approximately in

blt10

1 the middle of the interval that we hypothesized for the outer
2 zone, which was 10 to 50 percent.
3 With respect to the inner zone, I believe the
4 value in that report is 30 something.
5 BY MS. CHASIS:
6 Q. 30 percent, I believe. I don't have it here.
7 A. (Witness Van Winkle) As I remember, it was 31.9.
8 These are significant numbers, so I tend to --
9 Q. Yes.
10 A. What we had said in the Indian Point 3 Statement was
11 a majority of the fish in the inner zone, so this is less than
12 a majority of the fish.
13 When we went to the economic cost-benefit aspects
14 of the Indian Point 3 Statement, we translated "the majority"
15 into "90 percent," and this is clearly less than 90 percent.
16 Q. Right.
17 Would you consider that 23 percent contribution
18 to the Atlantic fishery, which is their figure in this report,
19 to alter your basic conclusion in the Indian Point 3 pro-
20 ceeding? And I'm not talking about your finding on contri-
21 bution to the Atlantic fishery. I'm talking about how this
22 would affect -- this 23 percent contribution figure would
23 affect an ultimate conclusion.
24 Would you think it would alter --
25 MR. LEWIS: Which fishery is the 23 percent?

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1 MS. CHASIS: That's the Atlantic, Cape Hatteras
2 to Maine specifically.
3 MR. TROSTEN: Let's be sure what conclusion it
4 is, now. You said it was not the conclusion on contribution,
5 but you say the ultimate conclusion is the ultimate con-
6 clusion that closed-cycle cooling should eventually be required
7 for Indian Point 3?
8 MS. CHASIS: Well, the once-through --
9 MR. TROSTEN: That once-through cooling over the
10 long-term should not be allowed at Indian Point 3?
11 MS. CHASIS: That's right.
12 BY MS. CHASIS:
13 Q Would you expect this to alter that conclusion?
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1 A. Let me answer by saying that, based on the information
2 that's in the December version of their analysis, that that dif-
3 fers in no major way from where we were in the Indian Point 3 FES,
4 to the extent that that component of our analysis was influential
5 in our decision reference requiring the cooling towers. It would
6 not, in my opinion, require reconsideration.
7 (Pause.)
8 Q. By the way, Dr. Van Winkle, there is reference in the
9 Indian Point 3 Final Environmental Statement, I believe, to tag-
10 ging programs being conducted by the Department of Environmental
11 Conservation, and the power authority of the State of New York.
12 Do you know the status of those programs?
13 A. I do not. Perhaps somebody from Texas Instruments
14 might. But my general impression is that as far as I know -- and
15 I think if they had produced a report, I would know about it --
16 they have not produced any written report.
17 Q. Now, in the Indian Point 3 impact statement, you dis-
18 cuss the stocking program of the Applicant. And I have reference
19 now to page 11-47, and subsequent discussions. And you state that
20 you set forth in Item 3 (a) through (d) the criteria which should
21 be used to monitor the success, or lack of success, of the stock-
22 ing program. Is that correct?
23 A. Yes.
24 Q. Now, in your opinion, must these criteria be assessed
25 before one can make a judgment as to whether or not a stocking

1 program is viable, or is not viable?

2 MR. TROSTEN: Ms. Chasis, I object. Could Ms. Chasis

3 clarify the meaning of the term, "viable?" I'm just not certain

4 that that term is sufficiently definite in terms of --

5 MS. CHASIS: Success?

6 MR. TROSTEN: No, the term "viable;" is that the term

7 you used?

8 MS. CHASIS: Yes. If I substitute "successful," will

9 that --

10 MR. TROSTEN: No, really, I don't think so. Because

11 I think the term "successful," or the term "viable," as used by

12 one person, particularly as used by one person, might not mean

13 the same thing to Dr. Van Winkle. We just have to define our

14 terms a little bit more.

15 CHAIRMAN JENSCH: Would you be happy with "achieving

16 significant results?" It would seem to be quite part of your

17 language of significance, or something. Would "significant re-

18 sults" fit your anticipated needs?

19 MR. TROSTEN: What would your question be?

20 CHAIRMAN JENSCH: Would the collection program, or

21 whatever it is, achieve significant results? Would that remove

22 your problem?

23 MR. TROSTEN: I think that would help.

24 CHAIRMAN JENSCH: All right.

25 MS. CHASIS: Okay. Maybe I ought to restate it to the

1 witness.

2 BY MS. CHASIS:

3 Q Would the stocking program be able to achieve signi-
4 ficant results? Would one be able to measure whether the stocking
5 program had or had not achieved significant results unless those
6 criteria set forth were met?

7 A (Witness Van Winkle). It's criterion (d) that causes
8 the problem. The criterion (d) reads, "At age 5 to 7 years for
9 the females, and at age 3 to 4 years for the males, when they are
10 recruited to the reproductive stock."

11 In the long run, in order to be an acceptable miti-
12 gation measure, based on the context of a closed system, the
13 stocked ones would have to show that they would come back and
14 spawn in the Hudson River. The entire issue of the strength of
15 this homing instinct somewhat makes this issue more fuzzy, and a
16 little harder to address, and it would appear that criteria (a)
17 and (b) -- survival during the weeks immediately following stock-
18 ing in the fall, and survival the following spring as yearlings --
19 have, to some extent, been satisfied. It's a matter of degree.
20 But at least all the hatchery fish aren't dead in the first winter.

21 So, your question really boils down to, would it be
22 essential if criteria -- in order for the stocking hatchery pro-
23 gram to be an acceptable mitigation measure, would it be essential
24 for criterion (d) to be satisfied? Certainly, in the long-run
25 sense, yes; I think the answer would have to be yes.

(Pause.)

MS. CHASIS: I'm sorry for the slowness. I'm trying to filter through questions which have already been asked and answered.

CHAIRMAN JENSCH: All right.

While you're doing that, I might indicate to the parties that, as was very obvious to you all a few minutes ago, Dr. Daiber, in order to meet previously arranged co-mitments, had to leave. We anticipate terminating today at 3:30, and under the rules, we're supposed to post a notice or make an announcement of some kind. I don't think we have to put it in the press or put badges on the door. But we're under some sort of a quorum arrangement.

Is there any objection by the parties to continuing with the absence of Dr. Daiber? Regulatory staff, Licensee, Hudson River Fishermen, Attorney General, Atomic Energy Office of the State of New York, Village of Buchanan?

(No response.)

(Pause.)

I take it that sufficient notice for the public -- I don't know whether there are any members of the public here. They all seem to be part of the crew of one organization or another. We're glad to have them; if they qualify for the public, all the better. It might be a coincidence if they do.

Do you have any further questions?

MS. CHASIS: Yes. I'd like to address this to Dr. Geckler.

BY MS. CHASIS:

Q If, Dr. Geckler, your conclusion had been that the two-year extension request should be granted because the Commission should await the receipt of the January 1977 report, would you estimate that the review and completion of both evaluation and review of that study could be accomplished within the extension period requested?

MR. TROSTEN: I object, because I think the question is vague. Also, I believe, the auestion has already been asked, and ruled out of order. But it's also vague.

CHAIRMAN JENSCH: What has been ruled before? I thought this was a new question. The question is, with further review -- it almost sounded like reading a script of the 1973 hearings; so that at that time, we only needed two more years to complete it. Now they're saying two more years now. Is there any greater assurance that two more years are going to do any better than the last two years?

Is that about what your question is? Did you think the review by the Applicant can come up with anything better?

MS. CHASIS: No, that really wasn't it. The question really was --

BY MS. CHASIS:

Q If a decision were made that the January '77 report

1 should be reviewed, and hearings held on the material contained
2 within it, is it your estimation that those steps could be com-
3 pleted within the two-year extension period requested by the
4 Applicant?
5 MR. TROSTEN: That is, do you mean by May 1, '81?
6 Is that what your question is?
7 MR. SHEMIN: Yes.
8 MR. TROSTEN: That's what I'm trying to understand.
9 BY MR. CHASIS:
10 Q Is that correct? Or even by next year at this time,
11 when Con Edison would have to start construction activities if
12 it were to meet the May '81 date? Isn't it really a year that
13 we're talking about?
14 A (Witness Geckler). I'm confused by the comments.
15 Q Do you want me to repeat?
16 A Yes.
17 Q The question is that, if you decided that, in fact,
18 the January 1977 report should be awaited, and the extension
19 period granted to the Applicant, do you think that the period
20 that has been requested -- namely, the two-year extension -- is
21 really adequate to complete this review?
22 MR. LEWIS: I think I'll object to the question. I
23 think Mr. Trosten is correct that what he was seeking to get from
24 the staff is an estimate of time. We object, and we consider it
25 just simply too conjectural, not knowing what the submittal would

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1 be. And I think that is still the case.

2 CHAIRMAN JENSCH: Well, I understood the previous

3 question from Mr. Trosten had to do with how long you say it's

4 going to take to go through the '77 report. I didn't understand

5 this que-tion was related to the '77 report, but it related to

6 the kind of data that probably has been accumulated here as

7 sufficient to justify.--

8 MR. LEWIS: I think the question is based on the '77

9 report.

10 MS. CHASIS: I think Mr. Lewis is correct. My con-

11 cern, and what I'm trying to draw out, Mr. Jensch, is that I don't

12 think we're really dealing with a two-year request here. I think

13 it really is a three or a four-year request, because I think the

14 reality is that the review procedure would not be completed in

15 sufficient time even to meet the May 1981 date. So, in a sense,

16 this is really an exercise in unreality.

17 CHAIRMAN JENSCH: I think I detected joy in the eyes

18 of the Applicant when you made your statement.

19 MS. CHASIS: Well, I think it should be recognized

20 for what it is. They're trying to make it out, well, we're only

21 asking for a one-year extension. In reality, I think that that's

22 not the case.

23 CHAIRMAN JENSCH: If your statement is related to the

24 '77 report, I think it had been previously considered and decided,

25 and an objection would be sustained.

1 MR. SHEMIN: Mr. Chairman, along these lines, perhaps
2 in terms of the re-evaluation of the benefit/cost balance, it
3 might be appropriate to inquire at this point as to whether, if
4 a benefit is to be considered, that there will be enough time to
5 go through this whole thing and make a determination prior to
6 construction. If we give them the extension, it will be appro-
7 priate to consider whether, in fact, that is the case.
8 In other words, if one could not accomplish that
9 within the extension period, then it is not a benefit of the ex-
10 tension period. And if that's the case, if it would take three
11 or four, then the costs would have to be examined in terms of
12 can the fisheries sustain, not just a two-year extension, but a
13 four-year extension?
14 My problem is, if you say yes to the two years, and
15 the two years are granted, you're done at that point. And then
16 you have to give them another extension. This piecemeal extension
17 with each incremental cost not necessarily being significant
18 would result in a total cost that might have been found signfi-
19 cant if the initial determination were made to -- well, look at
20 it, and say well, how long is this really going to take? And in
21 view of that, do you want to take the first step down the road?
22 I'm just wondering whether that is an appropriate
23 consideration in the re-examination that you recommended or re-
24 quested for the benefit/cost balance.
25 CHAIRMAN JENSCH: Well, I think we'll let the staff

decide that, see how it looks when they come out with it. If they haven't included it, you'll probably want to inquire why. If they have included it, Mr. Trosten will say, why did you do it? So I don't think we can resolve that at the moment.

MR. SHEMIN: Okay.

MS. CHASIS: I have a few more questions respecting the Final Environmental Statement in this proceeding, and they're directed at Section 3, particularly 3.2.2.1, and the subsequent sections.

BY MS. CHASIS:

Q And I'd like to ask Dr. Van Winkle the basis for their choice, or his choice, of the number of years relative yield was less than .75 to .50, as the two indices of risk of irreversible effects on a striped bass population.

(Pause.)

MR. BRIGGS: Is this something that one proposes to test here; whether this is a good thing, and is reasonable or unreasonable?

MS. CHASIS: Well, I think this was the criterion which was used in assessing whether or not the effect of the two-year extension was long-term negligible or not.

MR. BRIGGS: The problem that bothers me is, it seems to me it was also used as a criterion for deciding whether one should have closed-cycle cooling, or should not have closed-cycle cooling. And this is something that's never been tested,

1 the staff's position on that particular criterion.

2 CHAIRMAN JENSCH: Would this be a convenient place to

3 interrupt your examination? If we're contemplating closing at

4 3:30, the Board has some matters it would like to take up with

5 the parties. And perhaps we'll need 15 minutes to do that.

6 First of all, has the staff had an opportunity to

7 talk with your office to see what your estimate of time would be

8 for a revised cost/benefit analysis?

9 MR. LEWIS: The answer to that is yes. We've talked

10 to Oak Ridge National Laboratory, and the problem is that I don't

11 really have a very good feeling to give -- I've been given some

12 estimates of how long it will take, and I myself haven't had a

13 chance to talk to people and really ascertain exactly. But I

14 know the Board has indicated this coming January is the first

15 time of availability.

16 Now, perhaps what we could do, since we're all here

17 together now, is try to set a tentative date in January. And

18 perhaps if that date -- if, upon getting back to the office,

19 there is some reason why that date does not appear achievable,

20 I could so indicate to the Chairman. Or, similarly, I could

21 confirm with the Chairman that that date is reasonable.

22 I think that's probably the way I'd have to leave it.

23 CHAIRMAN JENSCH: We're hanging on edge for that date.

24 MR. LEWIS: Yes. Well, I only have a 1976 calendar.

25 (Pause.)

1 MR. SHEMIN: January 1 is a Saturday.

2 MR. LEWIS: Oh, that sounds like a good date. Well,
3 let's see.

4 (Pause.)

5 Maybe the week of the 10th of January.

6 MR. TROSTEN: That's acceptable to us, Mr. Chairman.
7 The earlier the better is fine with us.

8 MS. CHASIS: That would be acceptable to us as well.

9 CHAIRMAN JENSCH: Well, let's not make any definite
10 arrangement. We've got to have a target date. Perhaps it will
11 coincide with the release of the 1977 fishery report. In any
12 event, we'll contemplate some time during the week of January 10.
13 If that doesn't seem to be feasible, we'll try and indicate
14 when we get back to the office; our own schedule would better
15 indicate it there.

16 MR. SHEMIN: Mr. Lewis, is that the suggested date
17 for the release of the revised FES, or the suggested date for
18 the reconvening of the hearing, or both?

19 MR. LEWIS: I was thinking of that as the date for
20 the hearing. But it is true that the week starting January 3
21 would be the first complete week back after the vacation.

22 CHAIRMAN JENSCH: Correct.

23 MR. LEWIS: I think maybe you have a good point. I
24 think maybe the hearing would have to be the week of the 17th.

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25 MR. BRIGGS: You indicated that you would tell us

whether you could or could not meet the week of January 10. Isn't that right?

MR. LEWIS: Yes. But I think Mr. Shemin -- I was not mindful of the fact that the week preceeding that is the first week back. I would probably need, at a minimum, until the end of the week of January 3, which is January 7 or 8, whatever it is, to finalize the testimony and file it. And I think probably, on that kind of filing schedule, probably the week starting the 17th would be the first feasible.

CHAIRMAN JENSCH: Well, let's keep the 17th in mind. Are all hands agreed?

MR. LEWIS: I think that would probably be more likely.

MR. TROSTEN: Mr. Chairman, one thing I would like to ask here. We have certain information that we want to be able to provide to the Board through Dr. Lawler, in response to questions that have already been raised. Could time be made available? It would take about three minutes, I think, to have Dr. Lawler do this, and he wouldn't have to return unnecessarily.

CHAIRMAN JENSCH: Well, let us just go ahead with the one further matter about the selection of a termination date. As I understand the discussion this morning, there's a feeling that, while it may be implicit in the presently issued amendment to the license, which was issued on December 1, it should be made clear that May 1, '80, is the termination date for the operation of once-through cooling. And I take it that while Applicant may

1 not feel that the if factor -- as contrasted to Dr. Lawler's f-
2 factors -- but the if factor has been fully considered.
3 And if, however, the if factor is sufficiently consi-
4 dered, you have no objection to the May 1, 1980 date. Is that
5 correct, Mr. Sack?
6 MR. SACK: I don't understand that preceeding sen-
7 tence.
8 CHAIRMAN JENSCH: The if factor, whatever that if
9 factor is.
10 MR. SACK: If the if factor is included, I have no
11 objection.
12 CHAIRMAN JENSCH: Well, we'll assume that it is inclu-
13 ded. So all governmental approvals have been received, and we'll
14 see how the Appeal Board and the courts handle the exceptions.
15 MR. SACK: Will the Board consider the question of
16 the winter lag as an outstanding issue?
17 CHAIRMAN JENSCH: Well, no one has really raised the
18 winter lag, and I thought that when the original schedules were
19 put up in the Indian Point 2 proceedings, and also the Appeal
20 Board reviewed,that winter lag was implicitly a part of that.
21 And so, there's nothing new about it. Everybody's known that
22 winter comes in New York; take a trip outside today, it'll con-
23 firm your thoughts in that regard. So there isn't anything new
24 about winter lag; everybody's agreed about it.
25 MR. SACK: That's been my understanding. But the

1 concept I asked a ruling on will be incorporated in any schedule
2 that this concept applies, and has to have an adjustment, depending
3 upon what the appropriate starting point of the schedule is.
4 CHAIRMAN JENSCH: It's true, it would be implicit
5 as long as May 1, 1980 is the date for the end of the once-through
6 cooling, and you could go test your winter schedule, and put your
7 winter lag fore or aft, whichever way you like it. But just keep
8 that one date in mind, May 1, 1980.
9 MR. SACK: The problem doesn't arise on May 1, 1980.
10 It arises with other alternative dates.
11 MR. BRIGGS: Well, on the basis that, as we see it,
12 there has been a partial initial decision, in the sense that all
13 approvals have been obtained ,and the license amendment was issued
14 on December 1, I believe it was, of this year. And so, the
15 schedules are those that are based upon this date.
16 Now, you've taken exception to that, and it seems to
17 me that if the Appeal Board agrees with you, then they will have
18 to establish some other date, or they'll have to send it back to
19 the Board to establish some other date. In which case, if there's
20 a question of winter lag, then the question of winter lag can be
21 brought up.
22 MR. SACK: I was hoping to resolve it in one proceeding.
23 But we will have to reserve a future time.
24 CHAIRMAN JENSCH: If you're filing a motion of one
25 more year, two more years, expect it to come up every time you

1 file your amendments.

2 MR. BRIGGS: We think it has been resolved in this

3 proceeding, in that winter lag is not an issue at the present

4 time.

5 MR. LEWIS: Mr. Chairman, is it the Board's intention

6 to issue a brief initial decision to this effect?

7 CHAIRMAN JENSCH: Well, it would include the fact

8 also that we want to be sure that we understand correctly. The

9 bird monitoring thing is going to be worked out, and that's no

10 longer at issue, as we understand.

11 MR. LEWIS: That is correct. Do we owe the Board

12 anything on that?

13 CHAIRMAN JENSCH: You can give us a letter, if you

14 will, expressing what I understand either Mr. Sack or Mr. Trosten

15 saying. I think Mr. Sack thought it would work out satisfactorily,

16 and I guess that takes care of --

17 MR. BRIGGS: Excuse me, Sam.

18 Mr. Sack, let me make one more point. It seems to

19 me that if one were to consider winter lag, you have to consider

20 the entire schedule and the details of all parts of the schedule.

21 You can't just talk about ehe winter lag detail. And in the

22 absence of any issue raised by any other party, or any of the

23 parties on winter lag, it just doesn't seem appropriate to consi-

24 der that alone as part of this proceeding.

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25 CHAIRMAN JENSCH: Well, we have three minutes for Dr.

1 Lawler. You said three minutes, didn't you?

2 MR. TROSTEN: Yes.

3 CHAIRMAN JENSCH: Starting now.

4 (Laughter.)

5 Whereupon,

6 JOHN P. LAWLER

7 resumed the stand, and having been previously duly sworn, was

8 examined and testified further as follows:

9 DIRECT EXAMINATION

10 BY MR. TROSTEN:

11 Q Dr. Lawler, Chairman Jensch requested information on

12 the status of the 1974 Central Hudson Gas and Electric report.

13 Would you please respond?

14 A Yes, Mr. Jensch. That report has been submitted in

15 draft to the client. The initial client review was complete in

16 all sections of the report. All sections of the report have been

17 revised where appropriate, and returned to the client for his

18 final review, with one exception; and that's the exception of the

19 impingement section. That is awaiting computerization of all the

20 impingement data. When that's completed, that section will be

21 rewritten and submitted for final review. We expect the report

22 to be finalized in April.

23 CHAIRMAN JENSCH: Thank you.

24 BY MR. TROSTEN:

25 Q Mr. King requested information on percentage reduction

of the striped bass population in the river due to the operation of the plant. Would you respond, please?

A. Yes. The information I gave you yesterday, Mr. King, I find upon review refers primarily to the entrainment losses. When I include impingement losses as well, for the case of the long-term operation of the plant, the estimate of 1 to 4 percent should be changed to 5 to 7 percent.

Q. During the staff cross examination, you were asked, Dr. Lawler, to provide the number of organisms found in the post-yolk sack larval stage reported on in table E-1 of the December 7 testimony offered by Con Edison in this proceeding. Would you comment on that, please?

A. Yes. You'll recall we were referring to the post-yolk sac larval stage, where I indicated that we had sufficient data to do a statistical analysis. I'll give you the numbers by plant.

At Roseton, the total number of post-yolk sac larvae captured and analyzed were 272. At Bowline, the total number were 252. In both cases, these were captures of live and dead animals on the larval table. At Indian Point in 1974, the total number was 1,057; and at Indian Point in 1975, the total number was 1,849.

(Pause.)

MR. TROSTEN: That concludes our response to the three questions, Mr. Chairman.

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1 CHAIRMAN JENSCH: Thank you very much.

2 MR. TROSTEN: Mr. Chairman, with regard to the bene-
3 fit/cost analysis, could we have an understanding here that the
4 staff will advise us next week as to the date of availability of
5 this? Because really, events have come about so that the hearing
6 has to be put off till January. And we really need to look at
7 this benefit/cost analysis at the earliest possible time.

8 CHAIRMAN JENSCH: Well, I inferred that's why he
9 thought that would be out by the 10th, and have the week of the
10 10th to review it before the hearing on the 17th. Is that cor-
11 rect?

12 MR. LEWIS: That would be my intention, yes.

13 MR. TROSTEN: But that's really, if I may say so, sir,
14 an incredibly long time for the staff to do this amount of work.
15 With all respect, I really think that the staff could produce
16 this benefit/cost analysis earlier than that.

17 CHAIRMAN JENSCH: If we could have a taping on that,
18 and you'd just turn it around and listen to it yourself, and the
19 1977 report, I think that you'd all be happy, because it fits
20 both places pretty well. And I think the staff could be expected
21 to proceed as expeditiously as they can, with due consideration
22 to the rights of the parties, and fairness to all considerations.
23 That's the end of the script.

24 Is there any other matter we can take up before we
25 adjourn?

1 MS. CHASIS: Mr. Chairman, where are the hearings
2 going to take place; here, or in Washington?
3 CHAIRMAN JENSCH: Well, if we had our druthers, we'd
4 say Washington. How do you folks feel about coming down to --
5 well, after all, wait a minute, here. We've got the inauguration
6 to take care of. The 17th; did you really mean the 17th?
7 MR. LEWIS: I did. What is the date of the inaugura-
8 tion?
9 CHAIRMAN JENSCH: Well, it's the 20th, unless they've
10 changed it along with Thanksgiving, too. I don't know.
11 MR. LEWIS: We'll have to get through fast, so we can
12 all attend.
13 MR. TROSTEN: We would prefer it here, Mr. Chairman.
14 MS. CHASIS: I would complain.
15 MR. SHEMIN: In view of the inauguration, I think
16 it's impossible. Because my hotel budget is low as it is, and I
17 suspect it's going to be totally pre-empted when everybody starts
18 pouring into Washington for the inauguration.
19 CHAIRMAN JENSCH: Pouring in the liquid sense for the
20 affair?
21 MR. SHEMIN: I didn't do it with that in mind.
22 CHAIRMAN JENSCH: We'll meet here, I guess. We'll
23 work it out.
24 Is there any other matter we can take up before we
25 recess? We'll have to leave subject to a formal order. However,

later -- we won't make a firm commitment now. We'll await further word from the staff, but we'll endeavor to issue a formal order which could be given general public distribution, including publication in the Federal Register.

Is there anything else that we can take up?

MR. KING: Excuse me, Mr. Chairman. Am I correct that we will conclude the hearings in January, the cross examination of the NRC staff, and then have redirect from both the staff as well as the Applicant's witnesses?

CHAIRMAN JENSCH: Well, whoever wants to put on redirect will open it for everything.

Is there anything else?

(No response.)

CHAIRMAN JENSCH: Let us recess, subject to call, this proceeding, to the issuance of a formal order.

(Whereupon, at 3:30 p.m., the hearing was recessed, subject to call of the Chair.)

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[redacted]

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