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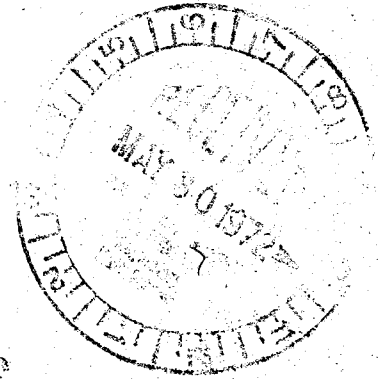
UNITED STATES ATOMIC ENERGY COMMISSION

IN THE MATTER OF:

50-247

CONSOLIDATED EDISON COMPANY  
OF NEW YORK, INC.

(Indian Point Station, Unit No. 2)



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Place - Croton-on-Hudson, New York

Date - May 19, 1972

Pages 5577 - 5757

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UNITED STATES OF AMERICA

ATOMIC ENERGY COMMISSION

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In the Matter of: :

CONSOLIDATED EDISON COMPANY OF : DOCKET NO. 50-247  
NEW YORK, INC. :

(Indian Point Station, Unit No. 2)  
----- :

Springvale Inn  
Croton-on-Hudson, New York

Friday, May 19, 1972

BEFORE:

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

MR. E. B. BRIGGS, Member.

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1 CHAIRMAN JENSCH: Please come to order.  
2 Citizens' Committee, do you have further  
3 interrogation?

4 MR. VOIGT: Mr. Chairman.

5 CHAIRMAN JENSCH: Yes.

6 MR. VOIGT: Could I once again take a moment of  
7 the Board's time to deliver a further report on the matter  
8 of the production of documents?

9 CHAIRMAN JENSCH: Yes, please.

10 MR. VOIGT: Last evening I delivered to Mr. Koisman  
11 copies of three additional documents which the Applicant  
12 has discovered concerning the matter of the welding work that  
13 was done on the reactor vessel support ring. These are a  
14 quality control inspection report of UE&C bearing date of  
15 August 9, 1968; a second quality control inspection report  
16 of UE&C bearing date of August 12, 1968; and a copy of a  
17 letter dated July 12, 1968, which is referred to in the  
18 second document that I have just identified.

19 I have just handed copies of these documents to the  
20 Board. I have additional copies here for the other parties  
21 to the proceeding.

22 In addition, Mr. Chairman, we have received from  
23 UE&C headquarters in Philadelphia the original design  
24 calculation sheets with respect to the reactor ring girder  
25 and the steam generator shoes and also we have now a copy of

1 the supplemental calculation performed under Mr. Slotterback's  
2 direction at the specific request of the Compliance Division.  
3 The latter document is one sheet and it bears the date of  
4 4/12/72. At the moment I have only two copies of these  
5 design documents. I would propose to give one to Mr. Roisman  
6 and have the other set reproduced as quickly as possible so  
7 that the Board may have copies, perhaps by the recess this  
8 morning.

9 CHAIRMAN JENSCH: Very well. Thank you.

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1 MR. VOIGT: Mr. Chairman, the applicant, in  
2 accordance with the Board's order, has endeavored to search  
3 the file documents of itself and its contractors. I should  
4 point out that we have not had access to the files of  
5 Pennsylvania Engineering Corporation except to the extent that  
6 they produced certain documents in response to the Board's  
7 subpoena.

8 We have, on the other hand, had the cooperation of  
9 the other contractors and subcontractors.

10 Based upon the search that has been made, I believe  
11 that we have now produced all of the documents that we have  
12 in response to the Board's order.

13 CHAIRMAN JENSCH: Very well. Thank you.

14 Are we ready to proceed with further interrogation?

15 MR. ROISMAN: I just have a question. Of course, I  
16 haven't seen these documents that were made available this  
17 morning. Are the original and final stress analyses -- well,  
18 we have the final, if that's all there was that you had  
19 provided at an earlier time. Are the original stress analyses  
20 included in this?

21 MR. VOIGT: It is my understanding, Mr. Roisman,  
22 that these are the design load and stress analyses. I  
23 should perhaps point out that there is not in existence any  
24 lengthy formal analytical report on these matters. These are  
25 simply the original engineering calculations that served as

BWT2  
1 the basis for the design drawings. They are in fact all that  
2 we have from United Engineers and Constructors.

3 MR. ROISMAN: Is the basis for the use of the  
4 fraction that the F figure is multiplied by in doing stress  
5 analyses included in this?

6 MR. VOIGT: I would prefer you address that question  
7 to one of the witnesses, Mr. Roisman.

8 MR. ROISMAN: Mr. Slotterback, do you remember we  
9 had talked about this on the first day?

10 MR. SLOTTERBACK: Yes.

11 MR. ROISMAN: I can't remember. Maybe yesterday.

12 MR. SLOTTERBACK: We talked about it but it isn't  
13 in the package, Mr. Roisman. That was information that was  
14 coming from Westinghouse. I'd like to defer to Mr. Berkowitz.

15 MR. BERKOWITZ: Would you please hold for just a  
16 moment?

17 MR. ROISMAN: Yes.

18 MR. WIESEMANN: Mr. Roisman --

19 MR. VOIGT: Identify yourself, please.

20 MR. WIESEMANN: Robert Wiesemann, Westinghouse.

21 I believe it was yesterday that Mr. Voigt identified  
22 Table A3-1 which appears in Appendix A, I believe --

23 MR. ROISMAN: In the FSAR?

24 MR. WIESEMANN: In the FSAR, yes. That section of the  
25 report in the appendix, together with that table, identified

BW+3  
1 the basis for the allowable stresses in the supports. I  
2 don't know whether you had an opportunity to study that.

3 MR. ROISMAN: No.

4 MR. WIESEMANN: I'd be happy to answer any  
5 particular questions you might have regarding that. But that  
6 is where the allowable stresses were derived.  
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1 MR. ROISMAN: In other words, that explains the  
2 basis of using the fraction that half is multiplied by in  
3 determining --

4 MR. WIESEMANN: Not in that sense. It explains  
5 the basis for the criteria in the sense that it explains what  
6 the objective of the design is, in other words, what  
7 limitations that the supports are called upon to impose upon  
8 the structure and gives the limiting considerations. The  
9 stresses being assumed at yield or a fraction of yield are  
10 more restrictive than the allowance given in the FSAR.

11 MR. ROISMAN: Thank you.

12 CHAIRMAN JENSCH: Are we ready to proceed then with  
13 cross-examination?

14 MR. ROISMAN: Yes.

15 CHAIRMAN JENSCH: Proceed, please.

16 MR. ROISMAN: Mr. Slotterback or whoever would be  
17 knowledgeable about the actual work done with regard to doing  
18 the repair work, I have some questions regarding the quality  
19 control inspection report with regard to the work that was  
20 done on the reactor support ring. That inspection report  
21 indicates in a section near the bottom -- Do you have a  
22 copy of that?

23 MR. WHITEHOUSE: Right. Can I see the document and  
24 compare it?

25 MR. ROISMAN: Yes.

1 MR. WHITEHOUSE: Yes, sir.

2 MR. ROISMAN: Thank you. The next to the last  
3 sentence in the first paragraph states, "No peening, pre-  
4 heating, postheating or stress relieving was done."

5 Now was that sentence meant to indicate that none  
6 of it was done with respect to the new welds that were made  
7 or the new build-up of weld material that was made?

8 MR. WHITEHOUSE: I was not the originator of this  
9 document and I would only have to take an assumption on  
10 whatever I said.

11 MR. ROISMAN: Do you know whether or not stress  
12 relieving was done for the new welds that were made on the  
13 reactor support ring, that is welds made in the "repair process"?

14 MR. WHITEHOUSE: No.  
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1 MR. ROISMAN: You do not know?

2 MR. WHITEHOUSE: There was no stress relieving done.

3 MR. ROISMAN: Mr. Slotterback, can you tell me am  
4 I correct in my assumption that on the original welds  
5 stress relieving was required?

6 MR. SLOTTERBACK: Yes, sir, on the total ring section.

7 MR. ROISMAN: That's right. The stress relieving  
8 was something in the neighborhood of 1150 degrees Fahrenheit.

9 MR. SLOTTERBACK: I don't recall the numbers but  
10 I think that is not the same.

11 MR. ROISMAN: Thank you.

12 ~~Looking at quality control inspection report 200299CD~~

13 do you have that in front of you?

14 MR. WHITEHOUSE: Yes, sir.

15 MR. ROISMAN: And that report states, "Grinnel  
16 Corporation satisfactorily magnetic particle-inspected all  
17 repair welds accomplished by Todd Shipbuilding Company and  
18 found no objectionable indications. Do you see that statement  
19 in there?"

20 MR. WHITEHOUSE: Yes, sir.

21 MR. ROISMAN: Now Mr. Slotterback, can you tell me  
22 is that the method of inspection of welds that was used for  
23 purposes of the original construction of the reactor support  
24 ring?

25 MR. BERKOWITZ: Mr. Branting will answer that question.

1 MR. ROISMAN: Thank you.

2 MR. BRANTING: We had the option of using that type  
3 of inspection, yes, sir.

4 MR. ROISMAN: What kind was in fact used?

5 MR. BRANTING: Magnetic particle inspection.

6 MR. ROISMAN: Was any other type of inspection used  
7 on the welds, also?

8 MR. BRANTING: I believe not.

9 MR. ROISMAN: Which one of you gentlemen would be  
10 able to tell me anything about the Todd Shipbuilding Company  
11 welders? In particular I am interested in finding out the  
12 welding procedures, those required by the American Welding  
13 Society, and were the Todd Shipbuilding Company welders  
14 qualified under those requirements?

15 MR. BERKOWITZ: Mr. Cunningham will answer that one.

16 MR. ROISMAN: Thank you.

17 MR. CUNNINGHAM: Would you repeat the question,  
18 please? I am sorry.

19 MR. ROISMAN: Yes. According to the specifications  
20 for the fabrication of the reactor support ring, and I am  
21 referring now to specifications number 9321-01-12-3, it  
22 states on page two thereof, "All welding shall conform to  
23 the latest tradition of the American Welding Society Code.  
24 Welders shall be qualified in accordance with the standard  
25 qualification procedure of the American Welding Society Code."

1           Now my question is, was the work that was done by  
2 Todd Shipbuilding Company done by welders who were qualified  
3 in accordance with the standard qualification procedure of  
4 the American Welding Society Code?

5           MR. CUNNINGHAM: The specific question I cannot  
6 answer directly. The welding engineer, Tom Nader, who was  
7 responsible for this job and reported to me on the site,  
8 reported back to me that he was satisfied that Todd Shipyard  
9 was properly qualified and the welders were properly  
10 qualified to perform the repair work. I can't answer directly  
11 whether they were or not. I have to answer it in this manner.

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1 wt1 1 MR. ROISMAN: Did you understand him to mean that  
2 they were properly qualified within the meaning of the  
3 standard qualification procedure for the American Welding  
4 Society or really that in his judgment, regardless of what  
5 procedure they may have been qualified to, he felt they  
6 could do the job?

7 MR. CUNNINGHAM: In his judgment it met all of the  
8 specifications that he considered applicable for this repair  
9 work.

10 MR. ROISMAN: But you don't know whether he con-  
11 sidered this --

12 MR. CUNNINGHAM: I don't.

13 MR. ROISMAN: Do you know whether or not the welding  
14 was done in conformity with the latest revision of the  
15 American Welding Society Code, or does any member of the panel  
16 know that?

17 MR. CUNNINGHAM: I don't know, again.

18 MR. ROISMAN: Referring now to the letter dated  
19 July 12, 1968 to Mr. Sam Howe from R. Lander of the Pittsburgh  
20 Bridge & Iron Works.

21 MR. VOIGT: Excuse me. I think the gentleman's name  
22 is Nawe, but I don't blame you for not being able to read it.

23 MR. ROISMAN: All right.

24 Mr. Branting, do you have a copy of that letter in  
25 front of you?

1 MR. BRANTING: Yes, sir.

2 MR. ROISMAN: It indicates on the bottom of the  
3 second paragraph that, "All repair welds are to be checked  
4 by magnetic particle or dye penetrant inspection in accordance  
5 with the original contract specification."

6 Can you tell me, what is the practical difference  
7 between the dye penetrant or the magnetic particle test, and  
8 what factor would enter into a choice to use one or the other  
9 for the purposes of inspecting the weld?

10 MR. BERKOWITZ: Mr. Roisman, Mr. Beer will answer  
11 that question.

12 MR. ROISMAN: Thank you.

13 MR. BEER: The difference between the two, in the  
14 effects of using one versus the other, that liquid penetrant  
15 detects only those defects which come completely to surface.  
16 Magnetic particle does detect defects some depths down into  
17 the material.

18 MR. ROISMAN: Can you tell me roughly how far down?

19 MR. BEER: It varies depending on the material and  
20 the method. In the neighborhood of a quarter inch.

21 MR. ROISMAN: You mean that it would detect that  
22 even if on the surface there was nothing visible?

23 In other words, it would detect a defect of any  
24 kind within that quarter-inch distance that was covered over  
25 at the surface and wouldn't be visible from the surface?

1 MR. BEER: That's correct, within the sensitivity  
2 of the method.

3 MR. ROISMAN: Thank you.

4 Maybe Mr. Whitehouse is the one, but can you tell me  
5 in doing the repair welds of the reactor support ring, how  
6 much weld material was deposited before any test for defects  
7 was made? Do you know?

8 MR. WHITEHOUSE: There was a very small amount of  
9 weld material. I cannot tell you exactly how much was put on.  
10 It was a very small amount, though.

11 MR. ROISMAN: Is there anyone on the panel that  
12 would know. I thought someone knew the exact quantity.

13 Mr. Slotterback, you, I understand, have done a  
14 drawing which is dated May 18, 1972, designed to indicate the  
15 closest distance to the edge of the vertical gusset support  
16 in the generator support shoe. Let me just ask so we will  
17 get the figures into the record.

18 If you take a look at this and tell me if I am  
19 correct in indicating that the distance, the shortest distance  
20 is two and eleven-sixteenths inches from the center line of  
21 the pin, and that that is the distance which is perpendicular  
22 to the side of the gusset which is nearest to the generator,  
23 please.

24 MR. SLOTTBACK: That's correct.

25 MR. ROISMAN: Thank you.



1 If I may, I'd like to ask Mr. Lofy a question.

2 MR. LOFY: Yes.

3 MR. ROISMAN: Mr. Lofy, I am going to return to you  
4 so that you can look at it, reference B7, which is a  
5 Westinghouse Electric Corporation sketch sheet. It is marked  
6 at the bottom, EDSK-232021, Revision 1, 4/2/66.

7 On this drawing that you gave me, which is a photo-  
8 copy of an original, presumably, there are several penciled-  
9 in numbers. I wanted to ask you about those.

10 For the record, I would state that I have made no  
11 marks on this document. I ask you with regard to these  
12 penciled references what they mean.

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1 MR. LOFY: Yes.

2 MR. ROISMAN: The first one is a penciled reference  
3 which has not been erased at all. It says Z direction or  
4 appears to say Z direction. Could you tell me what they  
5 represent?

6 MR. LOFY: Well, that is merely the direction that  
7 the analyst has identified for purposes of his analysis,  
8 X, Y and Z, the vertical and the two horizontal directions.

9 MR. ROISMAN: What is moving in that direction?  
10 Is there anything that moves in that direction? In other  
11 words, is that indicated the direction of a stress?

12 MR. LOFY: I think that we determine, through  
13 conversations with Mr. Slotterback at this point, that the  
14 tangential load T was applied for purposes of analysis here  
15 in Z, the horizontal direction, and two Es or two support pads,  
16 one on either side of the vessel. This was the subject of  
17 our conversation that was associated with these markings.

18 MR. ROISMAN: On the same drawing there is another  
19 line which has been erased. It is still possible to see it  
20 is at a forty-five degree angle to the Z direction, and it,  
21 too, was initially marked Z direction, and that portion of it  
22 has been erased, also.

23 Do you know what the reason for the change was, or  
24 whether that represented some uncertainty in terms of what  
25 direction that load would be received?

1 MR. LOFY: I can't answer that directly. It appears  
2 that the analyst first assume that the orientation was at  
3 forty-five degrees, and that it was perpendicular to the  
4 axis between two support pads. Possibly Mr. Slotterback could  
5 clarify this. I'm assuming that the loads are omni-directional,  
6 can act in any direction. But for purposes of analysis, we  
7 have to apply them at one point.

8 MR. ROISMAN: Do you know whether the particular  
9 direction that was assumed was the one that applied against  
10 the coldest, weakest portion of the support ring?

11 MR. LOFY: What?

12 MR. ROISMAN: That portion of the support ring that  
13 was least likely to withstand the stress.

14 MR. LOFY: I don't believe it would make any  
15 difference.

16 MR. ROISMAN: On the top of the page there is a chart  
17 divided into columns A, B, C and D, and beneath each column  
18 it indicates that there is a load factor associated with that  
19 particular item that it identified for columns A, B, C and D.  
20 Then the load factor is applied for different types of  
21 stresses.

22 Can you tell me, am I correct in my interpretation  
23 of that chart, that at no time is it assumed that the load  
24 to which the support ring will be subjected will be the  
25 combination load of earthquake and a pipe break?

1 MR. LOFY: I'm not able to answer that.

2 MR. ROISMAN: These figures that are written up  
3 above the chart in pencil, .9F and 1.33F, what do these  
4 represent?

5 MR. LOFY: These represent the allowable stresses  
6 for the individual cases. .9 times yield for the pipe break  
7 case, .9 times yield for pipe break case three, and one and  
8 one-third yield for the earthquake.

9 MR. ROISMAN: Do you know, what does this one and  
10 one-third mean? Does it mean the allowable stress is a third  
11 higher than the yield point of the material?

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1 MR. LOFY: I believe so.

2 MR. ROISMAN: Do you know in your analysis whether  
3 or not the amount of load to which the support ring would  
4 be subjected as a result of an earthquake was in any case  
5 higher than the yield point, although still below the  
6 allowable?

7 MR. LOFY: I can't answer that in terms of the  
8 earthquake case. We checked the worst loading condition  
9 given to us and determined that stress levels in general were  
10 very low. They did not approach these limits, and it appears  
11 that the ring is designed more for structural stability than  
12 allowable stress as a limiting criteria.

13 MR. ROISMAN: I notice at one point here you have  
14 also the upper part of the page the following D.L., and there  
15 is some unusual-looking sign, and then E.Q., and the figure  
16 22,000, and beneath one and one-third, it looks like it may  
17 be F.Y. with an arrow pointed up. Can you tell me what does  
18 that little set of symbols mean, if you know?

19 MR. LOFY: I don't know directly what these symbols  
20 mean.

21 MR. ROISMAN: Thank you.

22 MR. LOFY: I'd like to correct something.

23 MR. ROISMAN: Yes.

24 MR. LOFY: I think I stated that the one and one-  
25 third was one and one-third times yield. I believe we mean

1 one and one-third times F with F being 22,000 for the steel.

2 MR. ROISMAN: What is the difference between F and  
3 yield?

4 MR. LOFY: F would be a conventional design allowable  
5 stress.

6 MR. ROISMAN: So this is one and one-third times the  
7 conventional allowable stress rather than one and one-third  
8 times yield?

9 MR. LOFY: That is correct.

10 MR. ROISMAN: Now am I correct that the information  
11 that's contained in here regarding the yields and the F figures  
12 comes from or was obtained as the result of telephone conver-  
13 sations between Mr. Foley of your office and Mr. Slotterback  
14 of UE&C that is recorded on May 4, 1972, in a document which  
15 was a portion of -- Well, it's a portion of one of your  
16 references and right now I can't find which reference number  
17 it was.

18 MR. LOFY: I believe it was D.14.

19 MR. ROISMAN: Yes, that's correct. Is that where  
20 the information was contained that's penciled in on this  
21 sketch sheet that you just looked at? You want to look at  
22 the memorandum of the telephone conversation?

23 MR. LOFY: From this telephone conversation we  
24 verified that for some loading conditions the design  
25 criteria allowed .9 times yield. For others we used one and

1 one-third F per AISC. To get the actual allowable stress  
2 we went to the AISC for the material.

3 MR. ROISMAN: Thank you.

4 Now Mr. Slotterback, do you remember this telephone  
5 conversation on the 4th of May, 1972, in which Mr. Foley  
6 asked you some questions regarding the stresses with regard  
7 to the reactor support ring? And I will show you the  
8 memorandum of the phone conversation to see if it refreshes  
9 your memory.

10 MR. SLOTTERBACK: Yes, sir.

11 MR. ROISMAN: Can you tell me from the drawing that  
12 is referred to as E.B.S.K.-323021, revision 1, dated  
13 April 2, 1966, what does pipe break case two and pipe break  
14 case three refer to? What are those cases, if you know?  
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1 MR. SLOTTERBACK: The description on there in this  
2 case is between the pump and the elbow on the reactor nozzle.  
3 Case 3 is at the steam generator inlet.

4 MR. ROISMAN: Now do either of those involve the  
5 rupture of the largest pipe in the primary coolant system?

6 MR. SLOTTERBACK: As far as I know they both do.

7 MR. ROISMAN: And in your opinion would those be the  
8 ones which would produce the highest loads in terms of a load  
9 in the reactor pressure vessel in the event of a rupture?

10 MR. SLOTTERBACK: I assume so, but without looking  
11 at a detail -- maybe somebody from Westinghouse could respond.

12 MR. ROISMAN: Okay.

13 While we are waiting to get the person up maybe I  
14 can go on and ask you, the FY, the F figures that are on that  
15 chart that Mr. Lofy has indicated were obtained by his company  
16 from telephone conversations with you, can you tell me what  
17 is the support for the use of those particular figures, the  
18 .9 figure and the 1.33 figure?

19 MR. SLOTTERBACK: The support for the .9 is as I  
20 stated the other day, based on a criteria from Westinghouse  
21 that for the pipe break conditions we could design to .9FY.  
22 The 1.33F is based on the allowable stress, and the AISC code  
23 permits you to increase your stresses by one-third for  
24 seismic wind and extenuating loads that are not continuous.

25 MR. ROISMAN: Can you tell me is the use of the



1 figures that are there when you used them you based it upon  
2 Westinghouse in terms of the .9 figure and not upon any  
3 independent judgment on your part, is that correct?

4 MR. SLOTTERBACK: I guess so, yes.

5 MR. ROISMAN: Is Mr. Wiesemann the gentleman who is  
6 going to answer the earlier question?

7 MR. BERKOWITZ: Yes, I believe so.

8 MR. ROISMAN: I see he is just coming into the room.

9 Mr. Wiesemann, just to sort of bring you up to date,  
10 this has to do with the figures that have been used for pur-  
11 poses of stress analysis of the reactor support ring loadings,  
12 and the question which I had asked Mr. Slotterback was whether  
13 or not the pipe break cases 2 and 3 which are used in that  
14 chart on the sketch sheet that we have been referring to  
15 represent the most severe possible loadings that could occur  
16 on the reactor pressure vessel that are postulated for pur-  
17 poses of this plant.

18 There is, according to Mr. Slotterback, on the sheet  
19 a description of where those pipe breaks are assumed to occur.

20 MR. WIESEMANN: Give me a moment to look at it,  
21 please.

22 MR. ROISMAN: Yes.

23 MR. WIESEMANN: I would like to have an opportunity  
24 to check some other information before I answer that.

25 MR. ROISMAN: Do you need the sheet in order to do

1 the checking?

2 MR. WIESEMANN: I will need it again. I don't need  
3 it at the moment.

4 MR. ROISMAN: I just thought that I'd complete my  
5 cross-examination with regard to all but that. Was this some  
6 checking that you would be able to do in the next few  
7 minutes or was it something you wanted to do over a period of  
8 time and report back in some written manner?

9 MR. WIESEMANN: I think it's probably best if I --  
10 I have to get some reference material which I think is in the  
11 room here, but I don't know how long it will take to find what  
12 I am looking for. Perhaps I could do it after a break, when-  
13 ever that is.

14 MR. ROISMAN: Well, if it's all right with your  
15 counsel here we will just defer it and you could report back  
16 to us and indicate whether or not before we end the session  
17 today you'd be able to answer it, and if not we will try to  
18 work out some other method to get the answer into the record.

19 MR. VOIGT: Mr. Roisman, if we can obtain the  
20 answer before the end of the session that will be agreeable.

21 If there is any difficulty in obtaining the answer,  
22 then I have some objections to lodge with the Board.

23 MR. ROISMAN: That's fine.

24 Mr. Slotterback, could I see the sketch sheet again,  
25 please.

bt4

1 Mr. Slotterback, the decision that Mr. Lofy referred  
2 to that is implicit in this document, namely that the loading  
3 that would be considered would only be the loadings involving  
4 the reactor vessel weight itself and a pipe break and not the  
5 reactor vessel weight, a pipe break and an earthquake  
6 simultaneously, is that a decision that you in any way  
7 participated in, or is that something which is simply accepted  
8 from someone else?

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1 MR. SLOTTERBACK: That was accepted from someone else.

2 MR. ROISMAN: From where did that decision come?

3 MR. SLOTTERBACK: I'm not sure. Someone from

4 Westinghouse should respond.

5 MR. ROISMAN: Mr. Berkowitz?

6 MR. BERKOWITZ: Just hold for a moment.

7 MR. TROSTEN: Read the question. (Question read.)

8 MR. ROISMAN: Mr. Wiesemann, the question was,  
9 Mr. Slotterback indicated that Westinghouse advised him that  
10 the proper computation of the maximum load to which the  
11 support ring could be subjected should include the reactor  
12 vessel weight and either a pipe break or an earthquake, but  
13 not a pipe break and an earthquake at the same time; that that  
14 was a Westinghouse determination; is that correct?

15 MR. WIESEMANN: That information was provided to  
16 United Engineers by Westinghouse. The requirement, however,  
17 was an AEC requirement at the time. I believe if you will  
18 check the Staff's safety evaluation -- I think it is covered  
19 in other places in the application. In the Staff safety  
20 evaluation, this particular item is addressed and is pointed  
21 out that at the time this plant was designed that was the  
22 requirement of the AEC. Since that time the requirement has  
23 changed.

24 This plan has been reviewed from the standpoint of  
25 whether or not it is adequate from that standpoint based upon

1 analyses that have been formed for another unit. I think I  
2 could locate that in the Staff safety evaluation if that  
3 would be helpful to you. The requirement is a requirement  
4 that was developed. I believe Indian Point Unit 2 was the  
5 first reactor, first or second reactor to have the requirement  
6 of imposing the consideration of blowdown forces.

7 In other words, taking into account some design  
8 criteria to prevent blowdown forces from resulting in further  
9 failure of the coolant system.

10 Probably all the plants that are designed can  
11 tolerate that. But it was the first time that it became a  
12 specific requirement. Subsequently it was decided to combine  
13 the two. I think it is fair to say that the contribution  
14 from blowdown forces is by far the dominant factor. Loads  
15 are extremely large from the blowdown forces, whereas from  
16 the earthquake forces they are fairly small multiples of  
17 the mass of the component.

18 MR. ROISMAN: I'm not sure what those qualitative  
19 words mean, but the chart reference, B.7, the sketch sheet  
20 indicates that in terms of pounds, the loading of pipe case  
21 break would have 523,000 pounds; earthquake, 395,000 pounds.

22 MR. WIESEMANN: It is almost double.

23 MR. ROISMAN: And in the torsion situation, the  
24 pipe break case two would have been 866,000 pounds and the  
25 earthquake would have 969,000 pounds.

1 MR. WIESEMANN: That's correct.

2 MR. ROISMAN: In that case the earthquake would  
3 be the dominant force in terms of torsion or tangential load;  
4 is that correct?

5 MR. WIESEMANN: In that restricted sense, yes. In  
6 the overall sense it is not.

7 MR. ROISMAN: But the current requirement would  
8 be the total load pipe break and earthquake together on  
9 plants currently now seeking construction permits; is that  
10 correct?

11 MR. WIESEMANN: As determined by a dynamic analysis,  
12 which is different than taking the equivalent static loads  
13 and simply adding them together.

14 MR. ROISMAN: I understand. But that type of  
15 analysis was not done, to your knowledge, with regard to the  
16 reactor support ring modifications to see if it would meet  
17 that dynamic stress load combination; is that correct?

18 MR. WIESEMANN: An analysis was performed, not  
19 specifically on Indian Point Unit 2, but on the same type of  
20 design where it would show that you would not expect a  
21 problem with respect to the combined loads. I think that's  
22 the point I was referring to in the Staff safety evaluation.

23 MR. ROISMAN: But on the other unit there have not  
24 been modifications on the reactor support ring that have been  
25 made here, or was there?

1 MR. WIESEMANN: There is no connection between the  
2 modifications you are talking about here and the structural  
3 integrity of the support.

4 MR. ROISMAN: That is what the hearing is about,  
5 of course.

6 MR. WIESEMANN: I understand that, but there is no  
7 connection between them. Nothing has been done to the girder  
8 that affects its ability to withstand the loads.

9 MR. ROISMAN: I understand your judgment on that.

10 My question, though, was in the other plant that  
11 has had this analysis done with dynamic loads, was the  
12 reactor support ring constructed exactly as this one with  
13 the same problem with regard to warping and the requirements  
14 to machine the splice plates and the other deviations that  
15 have been discussed here and modifications that were made?

16 MR. WIESEMANN: I have no knowledge of what  
17 deviations might have existed. I only know that the deviations  
18 in this particular plant have no bearing on the effect of the  
19 structure.

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1 MR. ROISMAN: We are always pleased to have your  
2 judgment, Mr. Wieseemann. Thank you.

3 Mr. Lofy, turning back to the stress analyses that  
4 were done for purposes of the reactor support ring integrity,  
5 were you here yesterday when I believe the gentleman -- we  
6 had a discussion about the Bujliard method of computing  
7 stresses, a method used for intersecting cylinders and the  
8 problems dealing with safety valve header ruptures.

9 MR. LOFY: Yes, I was here.

10 MR. ROISMAN: Can you tell me, was the Bujliard  
11 method of computing stresses, would that have been appropriate  
12 for any of the stress loadings associated with the reactor  
13 support rings?

14 In other words, do you have a situation in which  
15 there were intersecting cylinders in the context of that  
16 method?

17 MR. LOFY: No.

18 MR. ROISMAN: Were the methods of stress analysis  
19 that were used, the A. D. Little stress analysis in terms of  
20 the types of loads that were considered and the directions in  
21 which they might go, and the detailed analysis?

22 MR. LOFY: I understand A. D. Little is the piping  
23 flexibility program. I don't think it would be directly  
24 applicable here.

25 MR. ROISMAN: Is the type of stress analysis that was



1 done here the most sophisticated in terms of attempting to  
2 appropriately predict and compute the loadings as the result  
3 of, say, blowdown forces from a pipe break, or was it a more  
4 simplified version than the most sophisticated might be?

5 MR. TROSTEN: Excuse me, Mr. Chairman. I don't  
6 understand the question. Are you referring to the analysis  
7 that Mr. Lofy performed?

8 MR. ROISMAN: Yes.

9 MR. LOFY: Our analysis was certainly not the most  
10 sophisticated.

11 MR. ROISMAN: In terms of the blowdown, do you know  
12 whether or not there would be forces acting in conceivably  
13 many different directions, some of which were not considered  
14 in the course of your analysis of the stresses to which the  
15 support ring would be subjected?

16 MR. LOFY: I cannot answer that. The forces we  
17 used were those that were tabulated on that particular  
18 specification sheet.

19 MR. ROISMAN: Mr. Slotterback, would you know if  
20 there were forces that would be likely in the event of a pipe  
21 break other than the ones that are tabulated on this  
22 reference B7, the sketch sheet we have been talking about?

23 If you like, I will hand it back to you.

24 MR. VOIGT: Mr. Chairman, I have been sitting here  
25 very patiently this morning listening.

1 CHAIRMAN JENSCH: I'd like to compliment you, but  
2 go ahead and say what you had in mind.

3 MR. VOIGT: -- listening to Mr. Roisman pursue this  
4 tedious line of inquiry concerning the original design values.  
5 I really submit to you, sir, that that is irrelevant and  
6 immaterial and beyond the scope of this hearing.

7 If Mr. Roisman had questions about the original  
8 design of the plant, they obviously would have been  
9 appropriate during the original hearings.

10 The purpose of this hearing, as I understand it,  
11 is to explore the effect, if any, with certain modifications  
12 on the components that it may have had on the integrity and  
13 safety of the plant.

14 I really must object to any further inquiry con-  
15 cerning the original design values unless there has been some  
16 foundation showing on Mr. Roisman's part that the modifica-  
17 tions have resulted in a departure from those values. I  
18 do not believe that it is appropriate at this stage of this  
19 hearing, which has been reopened to consider the limited  
20 issues raised by Mr. Brill's allegations, to go back and  
21 rehash all of the original design numbers.

22 I would ask for a ruling. I would ask that I have  
23 a continuing objection, and I would ask for a ruling on that  
24 subject by the Board.

25 CHAIRMAN JENSCH: Would you care to speak to this

1 matter?

2 MR. ROISMAN: Yes.

3 The original stress analyses, so far, at least in  
4 the sense that the drawing you have looked at and are just  
5 now looking at, have not been compared to the current stress  
6 analyses to indicate that there would not be higher loadings  
7 on the reactor support ring as the result of the modifications  
8 which took place.

9 In fact, I believe that there is some evidence from  
10 Parameter, Inc., which indicate there will be some changes.  
11 Therefore, I think it is pertinent, if this reactor support  
12 ring is in any way less strong, if you will, than the original,  
13 to find out whether or not the original limit, so-called  
14 allowable limit or the method of computing the ability of the  
15 reactor support ring to withstand forces, is accurate.

16 That is why the current question outstanding is an  
17 attempt to find out whether or not the computation of the  
18 stresses to which the reactor support ring would be subjected  
19 is a computation which validly includes all of the appropriate  
20 stresses.

21 We can't measure the strength of this ring as  
22 installed without knowing whether or not the formulae used for  
23 those stress analyses were appropriately conservative and  
24 covered all of the reasonably predictable forces. That has  
25 been the subject of the discussion for the last ten or

1 fifteen minutes with Mr. Lofy and Mr. Slotterback.

2 MR. VOIGT: Mr. Chairman, what Mr. Roisman has just  
3 said is a complete non sequitur. It is entirely possible and  
4 arguably appropriate to compare any increase in stress as a  
5 result of these modifications with the original allowables.  
6 It is, I submit, inappropriate to go back and question the  
7 original allowables at this point in time. That is what Mr.  
8 Roisman has just admitted he has been doing for the last  
9 fifteen minutes.

10 I ask that you rule that this is irrelevant and  
11 out of order and beyond the scope of this portion of the  
12 hearing, and that he be directed to proceed to establish the  
13 comparison with what exists and what was designed, and to  
14 desist from re-examining and rehashing the original design,  
15 which I submit is not in issue here.

16 CHAIRMAN JENSCH: Can the reporter find the pending  
17 question?

18 (Question referred to was read by the reporter.)  
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1 MR. ROISMAN: Mr. Chairman, I have located the  
2 reference I was referring to regarding the effect on the  
3 load-carrying ability of the support ring in a Parameter, Inc.  
4 study. On page eleven of the summary of the study it states  
5 under paragraph III-B, subparagraph 1, "Elongation of the  
6 anchor bolt holes does affect the load-carrying capability  
7 of the support ring."

8 CHAIRMAN JENSCH: In one respect, of course, if  
9 that is the predicate of your question, the interrogation should  
10 be directed to Mr. Lofy. But I think one thing that we  
11 must keep in mind in this proceeding, there hasn't been a  
12 reopening -- I think it would be helpful, I appreciate,  
13 Mr. Voigt, you have just come in the hearing, but until you  
14 see an order from the Board closing a portion of the record,  
15 you may assume that the record is open, and I think it gives  
16 you an impression that there has been some special dispensation  
17 granted in the reopening which has certain limits.

18 Radiological safety matters will be under  
19 consideration in this proceeding until it is closed, and you  
20 may be informed in that regard when you see an order from  
21 the Board.

22 Now in one sense this question of the support ring  
23 has just been placed in sharp focus by the transmittal by  
24 the Regulatory Staff of a letter from Mr. H. K. Brill.

25 As you know, Mr. Voigt, the Commission has suggested

1 that there not be de novo reviews in every particular of an  
2 FSAR unless there is some sort of a contention or issue  
3 developed in reference to a matter, and I think your  
4 associate counsel, Mr. Trosten, has indicated that several  
5 times, that parties should be careful not to go over too much  
6 of the FSAR unless there is some particular issue.

7 Now this whole question of the support ring has had  
8 a different context since the letter of Mr. H. K. Brill.  
9 The Board has been concerned about the statements that  
10 Mr. Brill made, and we have his views presented by his  
11 deposition and also by his statement here. His views, of  
12 course, are not necessary conclusive, except insofar as he,  
13 as a responsible engineering contractor, raised some questions.

14 Now this matter of the support ring has been  
15 subjected to very intensive analysis by both the Applicant  
16 and the Staff, and in the way it was not presented in the  
17 FSAR because there was no specific contention raised in  
18 reference to the matter prior to the Brill letter. But the  
19 Brill letter has put an entirely different character on this  
20 whole situation. I think to the extent that the interrogation  
21 is directed to a Parameter predicate, the interrogation is  
22 more properly directed to Mr. Lofy.

23 Did you have a statement?

24 MR. KARMAN: Yes, Mr. Chairman. I have just been  
25 advised by Mr. Lofy that there is a typographical error on

1 page eleven which we would like to correct at this time.

2 CHAIRMAN JENSCH: Is this going to change some of  
3 the contentions?

4 MR. KARMAN: Yes it will change it, but only to put  
5 it in accord with one of the other parts of the report itself.

6 CHAIRMAN JENSCH: Proceed then.

7 MR. KARMAN: On page eleven of the summary under  
8 Roman numeral III-B, the first sentence under number one  
9 should read, "Elongation of the anchor bolt holes does not  
10 affect the load-carrying capabilities."

11 A slight change, Mr. Chairman, which is supported  
12 by sheet number four of the attachment to said report, called  
13 Attachment Number Two, and this is page four of twenty-two  
14 pages, and I read from the last paragraph of said attachment.

15 "From the considerations presented, it is safe to  
16 conclude that structural integrity of the support ring is  
17 not affected by the elongated anchor bolt holes."

18 CHAIRMAN JENSCH: Well, Mr. Brill had to use --

19 MR. KARMAN: No, Mr. Chairman, we have one view.  
20 The typist may have had another one.

21 CHAIRMAN JENSCH: Well, since the predicate for  
22 the interrogation seems somewhat removed now by this correction,  
23 perhaps we can approach it differently.

24 We will sustain the objection to the pending question  
25 and without prejudice to reexamination of the subject matter

1 in the course of interrogation. Will you proceed, Mr. Roisman?

2 MR. ROISMAN: Yes.

3 Mr. Lofy, without getting into how does became does  
4 not, can you tell me, the thing that has bothered me in the  
5 attachments is that it appeared to be subject to the  
6 interpretation that you were using qualitating judgment words  
7 rather than words -- In other words, you concluded that the  
8 structural integrity of the support ring is not affected.  
9 What I was unclear about, you mean that the support ring is  
10 just as strong as it would have been if it had been  
11 constructed without any of these modifications having to take  
12 place? Was that your conclusion?

13 MR. LOFY: That is the general conclusion that we  
14 come to on page twelve of our report.

15 MR. ROISMAN: What do you mean by using the  
16 qualifying term "general"? Is there a specific way in which  
17 the support ring is not as strong?

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1 MR. LOFY: No. I mean as it applies to all four  
2 modifications investigated.

3 To be specific, we have to talk about one modifica-  
4 tion or another.

5 MR. ROISMAN: But in other words, going down each  
6 one of the modifications, the result of your study, unlike,  
7 if I may compare it, the result of your study of the support  
8 shoes, where you did find that the modifications, for lack  
9 of a better word, weakened the support shoes, didn't weaken  
10 it to the point where it was a safety problem. Here your  
11 judgment is that the modifications did not weaken the support  
12 ring at all.

13 MR. LOFY: That is correct.

14 MR. ROISMAN: And that is proper comparison. I mean  
15 it was your conclusion that the support shoes were weakened  
16 but not weakened to a point where in your judgment it in-  
17 volved a safety risk?

18 MR. LOFY: Yes.

19 MR. ROISMAN: Thank you.

20 I am sorry, Mr. Chairman. I, too, had operated  
21 under the assumption that that statement meant what it said.  
22 For purposes of the record is this going to be officially  
23 amended like direct testimony, Mr. Karman, or what?

24 MR. KARMAN: I thought I had just done that. If  
25 you would like Mr. Lofy to state it --

1 MR. ROISMAN: All I am concerned about, I will be  
2 very honest with you, is the transcript goes into the Public  
3 Document Room and someone reading it will read that statement  
4 and obviously come to the same conclusion that I did.

5 MR. KARMAN: The transcript has to be read as a whole,  
6 Mr. Roisman.

7 CHAIRMAN JENSCH: I think that the documentary  
8 evidence should be corrected since it's still within the range  
9 of correction, and the Staff is requested to correct the  
10 officially filed documents.

11 MR. VOIGT: Excuse me, Mr. Roisman.

12 Mr. Wiesemann has indicated that he would like to  
13 see again the document that you had asked him a question  
14 about.

15 MR. ROISMAN: Mr. Slotterback, do you know if with  
16 regard to any of the stress analyses that were done on the  
17 parts that were subject to modification support shoes or  
18 support ring, whether the stress analyses that were initially  
19 done and the stress analyses which were done subsequently, in  
20 other words, recently, whether the same criteria and  
21 standards were used for both sets of stress analyses, same  
22 vectors assumed, and so forth?

23 MR. SLOTTBACK: As far as I know, yes.

24 MR. ROISMAN: Did you personally have an opportunity  
25 to look at the earlier ones and the later ones?

1 MR. SLOTTERBACK: I didn't go back and review all  
2 of the old computation sheets, no. We related it to the  
3 original stresses based on the original loads that we com-  
4 puted.

5 MR. ROISMAN: Thank you.

6 Mr. Chairman, with the exception of the responses  
7 that Mr. Wieseemann has and with the exception of having an  
8 opportunity to read the documents that were provided this  
9 morning, and ascertain whether they raise any additional  
10 questions, I have no further questions at this time with  
11 regard to the subject of Mr. Brill's allegations.

12 CHAIRMAN JENSCH: Very well. Does that bring us up  
13 to a consideration of our request, the Board's request for  
14 some discussion by and among the attorneys in reference to  
15 the testing license?

16 MR. ROISMAN: Mr. Chairman, there is still two out-  
17 standing items. One, the question that the Board had asked  
18 in a letter sent to the parties regarding the resolution of  
19 the problem of document references for iodine removal fraction,  
20 and I don't know if the Board still wishes to have some  
21 resolution of that.

22 CHAIRMAN JENSCH: Yes, yes, we do. I didn't under-  
23 stand whether that was going to be submitted by way of a  
24 written reponse or oral response. We could take some time now  
25 to do that.

1 We did address a letter to the parties in reference  
2 to those two documents, one of which was an ORNL document,  
3 and the other being a Battelle Northwest Laboratory document.  
4 There was a consideration at an earlier session as to whether  
5 it might be advisable to request the authors of those reports  
6 to be present, and the Board concluded that if the parties,  
7 the author were present, he would probably say that they con-  
8 ducted the experiments that the report states that they  
9 conducted. So it may not assist to have their oral presenta-  
10 tion in that respect.

11 So the first question is is there any question in  
12 the mind of any of the parties as to the authenticity of  
13 those documents, and if those persons were to be sworn that  
14 they would testify as the reports indicate?

15 Applicant, I think you made a more substantial  
16 objection regarding the matter.

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1 MR. TROSTEN: Mr. Chairman, as far as the authenticity  
2 of the documents in the sense that the authors, if they were  
3 sworn, would say that, yes, they prepared the documents or  
4 the documents were prepared under their supervision, we are  
5 not questioning the authenticity in that sense. The basic  
6 objection of receipt into evidence of these documents has  
7 been stated in various papers. We feel that the documents  
8 contain a great deal of data that are not relevant to the  
9 concerns expressed here. The position of the parties has  
10 been expressed in sworn testimony by the Applicant and by  
11 the Staff, and for that reason we have objected to the Board's  
12 taking official notice of the portions of the documents or  
13 the entire documents which Mr. Roisman referred to.

14 CHAIRMAN JENSCH: Did you indicate, I don't know,  
15 I have in mind particularly those portions to which you  
16 objected saying that they were not relevant to the inquiry  
17 on the iodine releases. Did you specify sections?

18 MR. TROSTEN: Mr. Chairman, we have not specified  
19 particular sections. We have testified, Mr. Wiesemann has  
20 testified on page 2130 and 2131 of the transcript concerning  
21 the views of the Applicant with respect to the releases which  
22 were reported in ORNL 4635. I can refer the Board to that,  
23 if the Board wishes.

24 CHAIRMAN JENSCH: My question is dealing with  
25 documents. We understand that Mr. Wiesemann expressed his

1 views. I was dealing in my inquiry, particularly did you  
2 endeavor to specify those portions of the documents which  
3 you felt contained irrelevant matter?

4 MR. TROSTEN: No sir, we haven't gone through the  
5 entire document to specify which portions we consider to be  
6 irrelevant. We assumed that the Chairman's inquiry was  
7 directed principally to the Staff or to the Intervenor.

8 CHAIRMAN JENSCH: Well, you have made an objection  
9 to the official notice, have you not?

10 MR. TROSTEN: Yes, sir.

11 CHAIRMAN JENSCH: We wondered whether you had just  
12 given us the blanket irrelevant objection or whether you had  
13 something specific in mind. I take it it was the former?

14 MR. TROSTEN: It was a general objection, Mr.  
15 Chairman.

16 CHAIRMAN JENSCH: Does anybody else desire to speak  
17 to this matter?

18 MR. KARMAN: Mr. Chairman, our position has not change  
19 with respect to this. We have had three or four briefs on the  
20 official notice problem and I don't think there really has  
21 been anything which would change the position of the Regulatory  
22 Staff on that. Official notice is not the proper vehicle for  
23 getting these documents into the record.

24 CHAIRMAN JENSCH: Assume that for the moment. Is  
25 there any basis for stipulation?

1 MR. KARMAN: We will stipulate only to the effect  
2 that as far as we are concerned we stipulate as to the  
3 authenticity of this thing, that if the gentlemen were brought  
4 to testify they would say that, yes, this was their work.

5 CHAIRMAN JENSCH: And they are qualified to  
6 express the conclusions so indicated in their reports, is  
7 that correct?

8 MR. KARMAN: Yes, that is correct. But we certainly  
9 will not yield as to the validity of the --

10 CHAIRMAN JENSCH: You are entitled to have your  
11 views but the evidence that you have adduced is in support  
12 of your views entirely proper, but the question that we really  
13 have is that first of all a great problem with this form of  
14 the official notice regulation. First it says you may take  
15 official notice of those matters that are generally recognized  
16 in the Federal Courts, but if anybody desires to disagree with  
17 that they will have a chance to prove the contrary. So I  
18 would assume that there would be some conflict on matters.  
19 But aside from that, the inquiry that the Board is now making,  
20 is there a basis for stipulation, and as to that we raise  
21 the foundation inquiries of the parties.

22 First, are the authors of the reports with  
23 sufficient qualifications to express an opinion and to report  
24 the data from the experiments they have undertaken? And I  
25 take it both the Applicant and the Staff, you recognized that

1 these authors are qualified individuals. Now you may disagree  
2 with their views.

3 MR. KARMAN: They may be qualified, but I am not  
4 quite sure they are qualified with respect to the particular  
5 item that they -- You see, Mr. Chairman, we have a basic  
6 problem here, and the basic problem is the getting into the  
7 record of these matters by way of official notice.

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1 CHAIRMAN JENSCH: Try stipulations. That's what  
2 we are trying to do.

3 MR. KARMAN: No. We have gone through this route  
4 before and this is no different than the myriad of other  
5 items which Mr. Roisman requested. The Chairman discussed  
6 the possibility of bringing these gentlemen to the hearing.  
7 Mr. Roisman wrote a letter to me in which he requested that  
8 we bring them to the hearing. I have responded that as far  
9 as we were concerned, the evidence with respect to this was  
10 in the record, and we had no intention of bringing them as  
11 our witnesses.

12 Allowing the inference that Mr. Roisman wants,  
13 he could ask for that. We did not feel it necessary to bring  
14 them here. But the basic question of official notice still  
15 lies, and the Board has not ruled on this.

16 CHAIRMAN JENSCH: And we are still pondering that.  
17 Put that aside now. We have two problems here. One is  
18 official notice and one is a possibility of stipulation.  
19 Let us put the official notice aside. We will talk about the  
20 possibility of stipulation. The admissibility of the  
21 evidence, as to that we will have a question of the foundation  
22 and the adequacy of the experimental work.

23 I take it both the Applicant and the Regulatory  
24 Staff recognize these people have qualifications to undertake  
25 experiments of the kind indicated; is that right?

1 MR. TROSTEN: Mr. Chairman, we are not prepared to  
2 stipulate as to the reliability of the authors' conclusions.

3 CHAIRMAN JENSCH: I am not reaching that point yet.  
4 I am just asking, do you recognize that these individuals are  
5 qualified in the field of which they have undertaken these  
6 experiments?

7 MR. TROSTEN: In a general way, Mr. Chairman, but  
8 I believe for example --

9 CHAIRMAN JENSCH: Was your answer yes?

10 MR. TROSTEN: I'm afraid I can't give you an  
11 unqualified yes, no, sir.

12 CHAIRMAN JENSCH: How far can you go on it?

13 MR. TROSTEN: I think these gentlemen have  
14 qualifications, Mr. Chairman. I believe that some of the  
15 testimony, for example, that the emergency core cooling system  
16 rules making proceeding raises some substantial questions.

17 CHAIRMAN JENSCH: I didn't want to try that one here.  
18 Let's stay with the iodine releases, please.

19 MR. TROSTEN: I think there is some substantial  
20 question concerning some of the conclusions expressed, for  
21 example, expressed by Mr. Rittenhouse. We are not prepared  
22 to stipulate generally as to the reliability of these  
23 conclusions.

24 CHAIRMAN JENSCH: I am not asking that. I am just  
25 asking, do you recognize that these persons are qualified

1 persons to undertake experiments of this kind, and while you  
2 may disagree with the conclusions as perhaps other people  
3 disagree with the conclusions that you have introduced,  
4 nevertheless they recognize the validity of the qualifications  
5 of the persons to undertake experiments and express  
6 conclusions. Do you not likewise recognize that these authors  
7 of these two reports by experienced and trained and  
8 qualified people, are sufficiently valid for the experiments  
9 they have undertaken, and to express conclusions? Whether  
10 you agree or disagree is a secondary matter for the moment.

11 MR. TROSTEN: Mr. Chairman, I am simply not  
12 prepared to stipulate to that point at this stage.

13 CHAIRMAN JENSCH: You would then prefer that this  
14 matter be handled either by way of deposition or calling  
15 these witnesses to --

16 MR. TROSTEN: No, I do not prefer that, Mr. Chairman.

17 CHAIRMAN JENSCH: It is one or the other. It seems  
18 to me we have to resolve that. You can't be halfway about it.  
19 Either you recognize these people as qualified now or we  
20 may have to ask to have them brought here on the record. This  
21 is one of the problems that would expedite the proceeding or  
22 call it a delay and disaster and destruction that is going  
23 to befall and we may have to take our chances. You should be  
24 able to, in your experience, arrive at a conclusion as to  
25 whether these authors are qualified individuals just like

1 any one of these persons for whom you have submitted  
2 statements of qualification. If there is anything about  
3 Messrs. Rittenhouse and the others for the ORNL report,  
4 we will be glad to get a statement of qualifications to bring  
5 to the record and have you analyze them, just as you have  
6 brought in your statements and asked us to analyze statements  
7 of your witnesses. Aren't you able to do that?

8 MR. TROSTEN: Mr. Chairman, there is a question  
9 beyond the point which you are raising as well.

10 CHAIRMAN JENSCH: Let us stay with the first one I  
11 am making. Then we will have the next one.

12 MR. TROSTEN: I'm afraid we have to look at the  
13 second point, too. That is what is the very specific point  
14 that the Intervenor or the Board wishes to be considered in  
15 evidence? This point has not been carefully established as  
16 yet in my view.

17 MR. BRIGGS: Mr. Trosten, we do have a problem in  
18 that the Intervenors put some calculations into their findings  
19 and conclusions. Of course, you have pointed out that those  
20 calculations aren't evidence. But I believe we also have  
21 introduced into evidence some -- Let me say further.  
22 Apparently those calculations were based on information that  
23 was in these reports. We also seem to have in evidence,  
24 though, some letters that went back and forth between the  
25 Intervenors and Dr. Morris. As I read those letters, I think

1 the letter says that we have reviewed those calculations;  
2 we have done some using the same information; we get the same  
3 results. So we don't disagree with your calculations. We  
4 disagree with these numbers.

5 Of course, Dr. Morris put some information in showing  
6 why he disagrees with these numbers. One of the references  
7 that was used with one of these reports, that is. It does  
8 seem reasonable to us that these two reports can be put in  
9 evidence in some way so that the Board can consider them, can  
10 consider what Dr. Morris says in the evidence, and can  
11 consider the basis that Westinghouse uses for its information  
12 on organic iodine, and the basis that the Staff uses.

13 But it seems also to us that there is no reason to  
14 bring these people here if we are just going to have them sit  
15 here and say, I wrote the report, and then have the Staff say,  
16 we have no questions, and have the Applicant say, we have no  
17 questions, and then send them home. We have the alternatives  
18 of taking official notice, possibly, or the alternatives of  
19 you people saying, yes, we accept these reports as AEC reports;  
20 we don't accept everything that the authors say, but this  
21 information has been used. So let's let it in.

22 MR. TROSTEN: Mr. Briggs, I full understand the  
23 concern that you are expressing. We have been endeavoring  
24 sincerely to meet it. The problem that we have is that there  
25 is a tremendous amount of information in these reports. For

1 example, 4635 has absolutely nothing to do with the iodine  
2 release situation. Excuse me, sir.

3 MR. BRIGGS: Can one decide between the lawyers  
4 that what the Intervenor is interested in is the iodine  
5 information, and there are certain things in there that we  
6 accept?

7 MR. TROSTEN: We have made efforts to do that,  
8 Mr. Briggs. Mr. Roisman has narrowed the scope of his request  
9 to some degree. He has identified particular portions of the  
10 two documents, but those particular portions of the two  
11 documents contain a great many or contain certain generalized  
12 conclusions. He wishes to have official notice taken of these.  
13 We simply cannot accept these generalized conclusions as being  
14 evidence in this proceeding.

15 If the matter came down to more specific items,  
16 if they were particular points that the Board wishes to  
17 consider, that the Board considered to be significant, that  
18 it wished to have stipulations developed on, perhaps something  
19 could be developed, Mr. Briggs. I don't know because I am  
20 frankly at somewhat of a loss. I do disagree, Mr. Briggs,  
21 with the full report coming in, because I really feel that  
22 that would be an inappropriate thing to do in this proceeding.  
23 But if they were a very particular statement of facts that  
24 you were interested in or the Board were interested in,  
25 perhaps there would be some basis for a stipulation. I simply

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am not in a position to say that yet because I don't really know exactly what the problem is in your mind. I do know that we have been unable to come to agreement with Mr. Roisman on this, although in other cases we have been able to reach stipulations as to admission of documents in evidence.

1 MR. BRIGGS: I don't have any problem with it. It  
2 seems to me the problem is between you people and whether you  
3 want to cross-examine the authors or whether you don't want  
4 to cross-examine the authors.

5 Possibly the Intervenors could be more specific on  
6 what paragraphs they want put in. If that could be done,  
7 that will be fine.

8 CHAIRMAN JENSCH: I think that certainly would be  
9 a start.

10 MR. ROISMAN: Mr. Chairman --

11 CHAIRMAN JENSCH: Excuse me just a moment.

12 I think we ought to bear this in mind in reference  
13 to Applicant's counsel's statement that you can't stipulate  
14 as to conclusions. If the witnesses were called and if  
15 qualifications were established, adequate, for example to  
16 express conclusion, then it wouldn't be necessary for you  
17 necessarily to agree to the conclusion.

18 If the witness is qualified on the stand to express  
19 a conclusion, you may continue to disagree, but the conclusion  
20 would seem validly given and be a part of the record.

21 MR. TROSTEN: Yes, but --

22 CHAIRMAN JENSCH: By way of oral presentation, they  
23 may arrive at the same situation whether you accept the con-  
24 clusions or not.

25 MR. TROSTEN: Yes, that's true, Mr. Chairman. But



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1 if they expressed a conclusion, after being properly qualified  
2 to do so, there might well be cross-examination with respect  
3 to that conclusion.

4 CHAIRMAN JENSCH: You are entitled to that, if that  
5 is the purpose. Then I think that raises the question of  
6 what is it you would like to have cross-examined in reference  
7 to particular sections of these two documents that the  
8 Citizen's Committee should identify.

9 MR. TROSTEN: Mr. Chairman, I really don't believe  
10 it is appropriate, sir, for the burden to be cast upon the  
11 Applicant to decide what portions of these documents it  
12 wishes to object to. There are portions of the --

13 CHAIRMAN JENSCH: Hopefully, if the portions are  
14 specified by the Intervenor then you don't object to Section  
15 A, B, C, D, down to X, Y, Z, we will assume that A, B, C and  
16 D are without objection and would be admissible, and the  
17 burden is on an attorney appearing for a party to say yes or  
18 no about certain sections when they are offered in evidence.

19 This could be done orally with a witness on the  
20 stand. If you could not accommodate yourself to doing it  
21 through analysis of the record, we may have to go back to  
22 the old tried and true method of calling the witnesses or  
23 getting some oral presentation.

24 MR. ROISMAN: Mr. Chairman, I think Mr. Trosten has  
25 distorted to the point of really criminal distortion of the

1 record with regard to this matter. We have been remarkably  
2 specific particularly with the document in BNWL 319. We  
3 have not requested that the entire document be received in  
4 evidence in this proceeding. We have identified the portions  
5 of it.

6 In fact, many of those portions we actually pro-  
7 duced and put into our proposed findings so the Board would  
8 have it handy and directly before it. It consists primarily  
9 of a few paragraphs of Mr. Mishima's conclusion. The chart  
10 appears on Page 17 of the document.

11 Insofar as 4635, the ORNL document is concerned,  
12 we have focused only on the portions that deal with the  
13 iodine release that showed the metal iodine to be 6.7 per cent,  
14 and requested that the Board take official notice or some  
15 other appropriate procedure for bringing that data in.

16 Mr. Trosten had never once stated, other than his  
17 conclusion, which he is excellent at stating. He never once  
18 stated what part of any of those identified portions he even  
19 finds to be objectionable in general. He has never pointed  
20 to a paragraph. He has never called me on the telephone and  
21 said to me, remove this paragraph, and it is okay with me, or  
22 remove that portion of the chart. He has continued to make  
23 general vague blanket objections without giving any specificity.

24 Yet, he turns and screams to the Board, if we don't  
25 specify after Applicant produces information, what portions

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1 of that information we disagree with or choose to cross-  
2 examine. Now he says, with a straight face, that no burden  
3 of proof rests with the Applicant to identify the portions of  
4 the documents with which they disagree. That is an incredible  
5 misinterpretation of the obligation of an attorney.

6 We have identified with great specificity and we  
7 do not feel it is necessary to further identify. We have  
8 whittled down to the barest essentials the information in  
9 BNWL 319 and the information in all ORNL 4635 related to the  
10 metal iodine with which we are concerned, and the Applicant  
11 has not as yet told us in any specificity whatsoever what they  
12 object to.

13 With regard to the questions of Mr. Rittenhouse and  
14 Hobson, I would say that Document 4635 is one of the three  
15 hundred or so documents that were produced by the Staff in the  
16 course of the ECCS hearings. Doctors Rittenhouse and Hobson  
17 were called as witnesses by the Staff in that proceeding. They  
18 were accepted as qualified by the Applicant operating through  
19 its representative there, a utility unit of which the  
20 Applicant is a member. They were accepted by Westinghouse as  
21 experts, and they have been subjected to cross-examination  
22 now both by the representatives of intervening groups and the  
23 representatives of the Intervenor, including Westinghouse,  
24 and no one has objected that they were not qualified with  
25 regard to the document 4635.

1 I would say that it is fairly well established that  
2 they are qualified to express the opinions they expressed  
3 there.

4 If the Applicant disagrees with those opinions, it  
5 has had plenty of opportunity to introduce contrary evidence.  
6 The Staff has chosen that opportunity and has introduced what  
7 it considers to be contrary evidence. But the idea that the  
8 only portion of the record that should be available is the  
9 portion that agrees with the Applicant and the Staff, is some-  
10 thing to which we cannot agree. We believe that we have been  
11 sufficiently specific and think that it is incumbent upon the  
12 Applicant or the Staff to identify what they don't agree with  
13 in detail.

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1 MR. TROSTEN: Mr. Chairman, I will let the record  
2 speak for itself with regard to Mr. Roisman's inordinately in-  
3 temperate characterization of my remarks and my previous  
4 dealings with him.

5 CHAIRMAN JENSCH: Let's get at least one stipulation  
6 here. Nobody is going to call the other fellow a bad name or  
7 anything. Let us just talk about what the issue of the  
8 discussion is.

9 MR. TROSTEN: I completely agree with that, Mr.  
10 Chairman.

11 CHAIRMAN JENSCH: All right. Consider those portions  
12 stricken. We will suggest that the parties do some conferring,  
13 maybe even orally, face to face, if the telephone hasn't  
14 worked it out before.

15 By June 1 the parties report to us what you have  
16 accomplished. If you don't have something reached by then,  
17 we will develop some ruling in this regard and move the  
18 situation along. It appears that that is one reason why the  
19 radiological matters were never closed on a consideration of  
20 the case.

21 We are going to suggest that the parties consider  
22 what their obligations are as attorneys and what the obliga-  
23 tions the Board will expect to be performed with reference to  
24 an endeavor to reach a decision about something.

25 If these people are qualified witnesses, you may  
continue to disagree with their conclusions, but the

1 important thing is, are the qualifications sufficient to  
2 permit them to express their conclusions.

3 With that, are we ready to take perhaps a recess  
4 and then come back and consider the discussions about the  
5 operation?

6 Mr. Voigt.

7 MR. VOIGT: Mr. Chairman, we have brought here  
8 today a large number of witnesses. They have been with us  
9 for three days. One of them, Mr. Whitehouse, is an independent  
10 businessman. He is no longer associated with the Applicant or  
11 any of the contract companies.

12 CHAIRMAN JENSCH: What is the distinction you made?  
13 Isn't Westinghouse an independent organization?

14 MR. VOIGT: Yes, sir.

15 CHAIRMAN JENSCH: If you want to release your  
16 witnesses, you can release them.

17 MR. VOIGT: Sir, it is not my purpose to release them  
18 until after the recess. I simply wanted to suggest that we  
19 take a recess of fifteen, twenty minutes, give Mr. Roisman an  
20 opportunity to put his ducks in a row so we can, at the con-  
21 clusion of the recess, promptly conclude the examination of  
22 these witnesses and then release them, sir.

23 CHAIRMAN JENSCH: Whatever be your desire with respect  
24 to your witnesses, you may arrange by yourself. We will  
25 accommodate our schedule to the convenience of the parties in

1 this proceeding and to the attorneys and the witnesses.

2 MR. ROISMAN: Mr. Chairman, I want to say it took  
3 the Applicant two months to get their ducks in a row on the  
4 Brill matter. I will not do it in twenty minutes. I will  
5 look at the documents on the break while the other attorneys  
6 go out and relax. If I think I have completed an analysis  
7 of them sufficiently to release the witnesses for my purposes,  
8 I will. If not -- and I don't think there is time today to  
9 finish the documents -- then I will indicate that on the  
10 record.

11 Mr. Voigt is not going to put my ducks in a row for  
12 me in twenty minutes.

13 CHAIRMAN JENSCH: We better have a little longer  
14 recess than we generally take. At this time let us recess  
15 to reconvene in this room at eleven o'clock.

16 (Recess.)  
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1 CHAIRMAN: Please come to order. Have we concluded  
2 all the interrogation in reference to the Brill letter?

3 MR. ROISMAN: I guess this would have to be for  
4 Mr. Slotterback.

5 MR. SLOTTERBACK: I am going to show you a document  
6 that was provided to me this morning by Mr. Voigt. The  
7 subject is reactor ring girder. The document is entitled  
8 Job Order No. 9321-01. It's dated 4/12/72. It's compiled  
9 by, the initials W.H.R. At the bottom there is a conclusion  
10 which states, "Slotting of girder flange anchor bolt holes  
11 in accordance with field info does not stress contact drawing  
12 area of nut beyond acceptable limits. Calculations ignore  
13 help of washer under nut."

14 Would you look at the whole sheet and also at that  
15 conclusion and then I'd like to ask you a question about it,  
16 please. Can I just have it back for a second.

17 Is the implication intended to be of that statement  
18 that the stress contact area of the nut is increased by the  
19 proposed modification of the anchor bolt hole but not increased  
20 beyond acceptable limits?

21 MR. SLOTTERBACK: Yes, sir.

22 MR. ROISMAN: Mr. Lofy, I'd like to show you the  
23 same item and ask you if you have previously seen this  
24 document. I would add that this was not one of the documents,  
25 Mr. Lofy, that I received from you, although I don't know that



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it's not one of your references.

MR. LOFY: No, I have not seen this previously.

1 MR. ROISMAN: Does the statement that Mr. Slotterback  
2 just made, namely that there would be some increased stress  
3 as a result of the modification on the nut, although it wouldn't  
4 exceed the allowable in any way, persuade you to change your  
5 judgment regarding whether or not the modifications to the  
6 reactor support ring would change the less strong, if you  
7 will, or not as strong as its original although still within  
8 safe limits?

9 MR. LOFY: No.

10 MR. ROISMAN: Thank you.

11 I have no further questions based upon the documents  
12 that have been produced so far. I think Mr. Wiesemann had  
13 still not answered the earlier question. Can he answer that  
14 now?

15 MR. VOIGT: Mr. Wiesemann is prepared to answer your  
16 question, Mr. Roisman. I will hand you back the sheet you  
17 handed to us previously.

18 MR. ROISMAN: Thank you.

19 MR. WIESEMANN: The answer to the question is yes.

20 MR. ROISMAN: Would you refresh my memory by telling  
21 me what question you are answering yes.

22 MR. WIESEMANN: The one you asked me.

23 MR. ROISMAN: If you want to keep playing games, I  
24 can ask the Reporter to look back at the transcript. As I  
25 remember the question --

1 MR. WIESEMANN: You asked me something about the  
2 cases there. I would hesitate to rephrase the question. As  
3 I recall the question you asked, the answer is yes.

4 MR. ROISMAN: I would be curious to know -- The  
5 question I asked you --

6 MR. WIESEMANN: Excuse me, Mr. Roisman. If you  
7 are going to play games about the question, let's get the  
8 question out here and we can deal with it. I got the answer  
9 to the question and I have given my answer, which is yes.

10 MR. ROISMAN: Okay. Just for the record, I would  
11 make it clear what my question was. My question was, did  
12 Westinghouse ignore any significant stresses in the preparation  
13 of this sheet. I have another question for you, Mr. Wiesemann.

14 In the preparation of this sheet, did Westinghouse  
15 select the worst pipe break case for purposes of pipe break  
16 cases two and three for purposes of determining the maximum  
17 possible load on the reactor pressure vessel?

18 MR. TROSTEN: Mr. Chairman, Mr. Roisman's rephrasing  
19 of that question is obviously objectionable, and I suggest  
20 that we ask the Reporter to strike that portion from the record.

21 CHAIRMAN JENSCH: I think more importantly  
22 Mr. Wiesemann had the question in mind when he investigated  
23 the matter and has come to a conclusion, and that answer  
24 will have to be related to the first statement of the matter  
25 in the record.

1 MR. BRIGGS: Could I ask a question? Where are  
2 these pipe breaks located that we are talking about in case  
3 one and two or two and three?

4 MR. ROISMAN: Mr. Wiesemann has the sheet which  
5 states it on the sheet on the right-hand side. I will either  
6 read it, or if you would like to read it. If nobody is going  
7 to read it, will somebody hand it to me so I can answer  
8 Mr. Briggs' question?

9 Mr. Briggs, on this document which is Reference B.7  
10 by the Parameter, Inc., the right-hand side indicates that  
11 pipe break case two is between pump and L on reactor nozzle,  
12 and pipe break case three is at steam generator inlet.

13 CHAIRMAN JENSCH: Could we see the document that  
14 you have?

15 MR. ROISMAN: Yes.

16 CHAIRMAN JENSCH: I will hand it back to you in  
17 just a minute.

18 MR. WIESEMANN: I was intending to answer the question.  
19 I want to set Mr. Roisman straight. I was just getting a  
20 diagram from the FSAR that will help.

21 In the volume of the safety analysis report which  
22 contains answers to questions, and in particular, question 1.5  
23 which was answered by the Applicant, there is an illustration  
24 Figure 5.1-1 which was provided.

25 In the upper view, plan view of the system, there is

1 a section of piping designated by a line with arrows at either  
2 end, marked 3. A pipe break is taken in that section which  
3 corresponds to the case designated in the sheet that  
4 Mr. Roisman has been referring to as between the pump and  
5 the reactor vessel. This diagram shows the nature of the L  
6 that exists at the inlet nozzle.

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1 CHAIRMAN JENSCH: That is this diagram, that one  
2 that you identified from FSAR.

3 MR. WIESEMANN: I'm sorry. What is the question?

4 CHAIRMAN JENSCH: When you say "this diagram", you  
5 referred to the diagram shown in the FSAR, which you identi-  
6 fied.

7 MR. WIESEMANN: Yes, sir.

8 CHAIRMAN JENSCH: Thank you.

9 MR. WIESEMANN: The other break referred to in the  
10 diagram referred to by Mr. Roisman is shown in the FSAR  
11 diagram, occurs in the section of pipe which is identified  
12 by a line with arrows at each end with the Figure 1, and the  
13 break is assumed to occur in that line between the steam  
14 generator and the reactor vessel. And those breaks in those  
15 locations do result in the maximum loads that can be imposed.

16 CHAIRMAN JENSCH: Thank you.

17 MR. ROISMAN: Mr. Wiesemann, is the load in any way  
18 affected by the place along that piece of pipe where the break  
19 occurs?

20 In other words, whether it's nearer to the steam  
21 generator or nearer to the reactor vessel in the one case,  
22 or nearer to the reactor, nearer to the pump, or nearer to  
23 the reactor nozzle in the other case?

24 MR. WIESEMANN: Not in any significant manner for  
25 the purpose of load calculation.

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1 MR. ROISMAN: Are there pipe restraints on those  
2 pipes between those two points?

3 MR. WIESEMANN: No. The supports of the reactor  
4 coolant system piping are provided by the supports to the  
5 major components of the system, the pressure vessels in the  
6 system, and the pumps.

7 MR. ROISMAN: In the drawing that you showed from  
8 the FSAR, and I don't know whether that was intended to be  
9 to scale, but for instance if in pipe break case number 2  
10 if the pipe were to break nearer the pump and therefore at  
11 some distance, at the maximum distance away from the reactor  
12 nozzle that that particular piece of pipe could be, would  
13 there be any tendency to increase loading on the nozzle and  
14 therefore on the reactor support ring beneath the nozzle due  
15 to the pipe whipping?

16 MR. WIESEMANN: I don't believe so.

17 MR. ROISMAN: I'm unclear about the use of the  
18 term believe. You mean of you present knowledge you don't  
19 know for sure, or you just haven't made that calculation  
20 but it's your opinion, you think that's the way it would come  
21 out?

22 MR. WIESEMANN: Well, the loads are calculated for  
23 two types of breaks. You are asking about the situation which  
24 results from the case which produces the maximum loads. Also  
25 considered in arriving at the maximum loads are slot-type

1 breaks in the piping, and we are talking here about breaks  
2 that were of the guillotine type break, which I do not believe  
3 would produce any significant whipping effects that would cause  
4 these loads to be significantly higher or these breaks.

5 We had analyzed the situation for slot-type breaks  
6 where the loads are imposed in a different manner.

7 MR. ROISMAN: I'm sorry. Do you mean that, when you  
8 say you have analyzed the loads for the slot-type break, the  
9 type break that you analyzed for on reference B7, this  
10 document EDSK 323021, were those guillotine type breaks?

11 MR. WIESEMANN: Those I believe result from a  
12 guillotine break.

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1 MR. ROISMAN: Now you use the term that it would  
2 not significantly increase the load. Could you give me some  
3 bounding for that term significant in terms of poundage?  
4 Would you expect a 100,000 pound change in the load or  
5 fifty or what? Just a rough figure.

6 MR. WIESEMAN: No, I couldn't give you a figure in  
7 a quantitative sense. These pipes are very thick, I think  
8 in the neighborhood of two or three inches thick, stainless  
9 steel, and we are speaking of pipes which are relatively  
10 short and stubby pipes, and I guess in the engineering sense  
11 you would call them short columns and are quite stiff, and  
12 from a standpoint of the possibility of deflections resulting  
13 from eccentricity of loads, which is the type of situation  
14 that you are suggesting.

15 MR. ROISMAN: Thank you, Mr. Wiesemann.

16 Mr. Chairman, I think it would be helpful if the  
17 record included this drawing. The copy I have, which as  
18 far as I know is the only one in precisely this form with  
19 the penciled numbers on it that we discussed earlier, belongs  
20 to Mr. Lofy and it's the only copy that he has. I would  
21 introduce it by Mr. Lofy indicating that it is a document  
22 that was relied upon in the preparation of the Parameter, Inc.  
23 study. But I wonder whether I could have waived for the  
24 moment the requirement to produce the copies for the Reporters  
25 and the other parties and ask Mr. Lofy if I could get one copy

1 of this that I will duplicate and distribute to the parties  
2 subsequent to the conclusion of the hearing.

3 CHAIRMAN JENSCH: Would you show the document to  
4 opposing counsel?

5 MR. ROISMAN: Yes.

6 Let me point out that I have received the document  
7 from the Applicant this morning, which is the same as that  
8 document with the exception of the penciled notations on  
9 there, that were made by Mr. Lofy, and the reason that I  
10 would like that one in is because Mr. Lofy and I did discuss  
11 the penciled notations in the course of cross-examination  
12 earlier this morning.

13 MR. VOIGT: Mr. Chairman, I have no objection to the  
14 introduction of this document. I do want to express some  
15 concern about its legibility and I am wondering if perhaps  
16 Mr. Lofy would undertake to put his notes in ink for  
17 Mr. Roisman before Mr. Roisman attempts to make copies,  
18 because we may later want to be able to read those notes.

19 CHAIRMAN JENSCH: Yes. I think legibility is an  
20 important matter.

21 Could that be done, Mr. Lofy? Could you ink that?

22 MR. LOFY: Yes, sir.

23 CHAIRMAN JENSCH: Let's give an exhibit number to  
24 it and when copies are available I think is all right.

25 MR. ROISMAN: Yes. I would now request that the

1 Board have the document marked as Exhibit II of Citizens'  
2 Committee for the Protection of the Environment and that it  
3 be received in evidence to my subsequent delivery of copies  
4 of the document to all parties.

5 CHAIRMAN JENSCH: Has the document caption been  
6 given sufficiently so that we may know --

7 MR. ROISMAN: I can do it, Mr. Chairman. It's a  
8 document, the top of which says, Westinghouse Electric  
9 Corporation and it's identified in the right-hand corner by  
10 the notation, it says, "Reference (B.7)", which is a  
11 reference number by Parameter, Inc., and on the bottom the  
12 document is identified as EDSK-323021, Revision-1, April 2, 1966.

13 CHAIRMAN JENSCH: The document to which Citizens'  
14 counsel has just referred may be marked for identification  
15 as Citizens' Committee Exhibit II, and having thus been  
16 identified and having been previously offered is there any  
17 objection?

18 Regulatory Staff?

19 MR. KARMAN: No objection, Mr. Chairman.

20 CHAIRMAN JENSCH: State of New York?

21 MR. MARTIN: No.

22 CHAIRMAN JENSCH: Hudson River Fishermen's  
23 Association?

24 MR. MACBETH: No.

25 CHAIRMAN JENSCH: Applicant?

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MR. VOIGT: No objection.

CHAIRMAN JENSCH: Exhibit II is received in evidence.

(Exhibit II as previously described is marked in evidence, to be forwarded to the parties at a later date.)

MR. ROISMAN: Mr. Chairman, that takes care of our ducts for right now.

MR. TROSTEN: Mr. Chairman, yesterday Mr. Roisman asked a question concerning the reporting of deviations and the quality assurance program requirements that were in effect. I told him I would undertake to determine if there was something more specific than appears in the FSAR dealing with this matter. I have done this and there is nothing more specific on this matter than appears on page B.11 of the final safety analysis report, and this is the answer to the question that I would proffer to Mr. Roisman.

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CHAIRMAN JENSCH: Thank you.

Is there any other matter that we can consider before we proceed to a discussion and argument about the testing matters?

MR. VOIGT: Mr. Chairman, it may be that other counsel or the Board have questions to direct to the Con Ed panel. In the event that they do not, I have one or two questions on redirect.

CHAIRMAN JENSCH: Will you proceed.

Does any attorney have any question of the Applicant's panel in this regard?

MR. KARMAN: No questions.

MR. MACBETH: No questions.

MR. MARTIN: No questions.

CHAIRMAN JENSCH: Very well. Proceed.

MR. VOIGT: Mr. Berkowitz, at Page 5223 of the transcript for May 17, you were asked certain questions by Dr. Geyer, who unfortunately is not here.

CHAIRMAN JENSCH: It should be noted that a prior commitment compelled Dr. Geyer's absence today and the last hour of yesterday.

MR. VOIGT: The first question was:

"It is certainly required to support the steam generator. It must be under stress. How can you hold a 200-ton thing there without it being under stress?"

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1 Then there was a subsequent question:

2 "I understand that perfectly. I don't understand  
3 how such material out there can avoid being stressed when you  
4 load that lug."

5 Then at the bottom of that page, the Chairman stated  
6 that he would like for you to advise the Board at a subsequent  
7 time if you wished to supplement your answers to Dr. Geyer's  
8 questions.

9 I now ask you whether you do wish to supplement your  
10 answers to those questions?

11 MR. BERKOWITZ: Yes.

12 MR. VOIGT: Would you give you supplemental informa-  
13 tion.

14 MR. BERKOWITZ: The material at the intersection  
15 between the lug on the steam generator and the bottom channel  
16 of the steam generator is, of course, stressed. There was,  
17 however, excess material there. The stresses would be well  
18 within allowable limits.

19 As our testimony showed, there was also excess  
20 material on the steam generator support shoes. Excess  
21 material could have been removed either from either component  
22 without exceeding allowable values.

23 It is pertinent to note that it was proved to remove  
24 the excess material from the steam generator support shoes  
25 rather than from a pressure vessel in the reactor coolant

1 pressure boundary, thereby precluding any possibility of  
2 affecting its integrity.

3 MR. VOIGT: Does that complete your supplemental  
4 response, Mr. Berkowitz?

5 MR. BERKOWITZ: Yes, Mr. Voigt.

6 MR. VOIGT: Thank you.

7 I'd like to address one other subject matter.

8 Is it correct that the shim plates which are set in  
9 the shoes for the reactor vessel feet are part of the original  
10 Westinghouse design for those shoes?

11 MR. BERKOWITZ: Yes.

12 MR. VOIGT: When the reactor is heated up, is there  
13 a radial thermal extension of the reactor vessel?

14 MR. BERKOWITZ: Yes.

15 MR. VOIGT: As the result of that expansion, do the  
16 reactor vessel shoes move?

17 MR. BERKOWITZ: No.

18 MR. BRIGGS: Could you state what does happen when  
19 the vessel expands?

20 MR. BERKOWITZ: Yes, sir. The reactor vessel feet  
21 slide on top of the shim plates and move radially outward.

22 MR. VOIGT: Is that why it is important to have a  
23 very careful and accurate measurement of the surface contact  
24 between the top surface of the shims and the bottom surface of  
25 the shoes?

1 MR. BERKOWITZ: Yes.

2 MR. VOIGT: Thank you.

3 Mr. Chairman --

4 CHAIRMAN JENSCH: Is there some difference between  
5 feet and shoes here? You referred to heated shim plates and  
6 shoes for the reactor vessel feet. The shoes move but the  
7 feet slide. It sounds like the shoes are too big. I have  
8 had that difficulty myself.

9 MR. BERKOWITZ: Mr. Chairman, if it would help, we  
10 could put a large sized copy of one of the illustrations in  
11 our testimony on the board. This would make it somewhat  
12 easier for you to see.

13 CHAIRMAN JENSCH: I would appreciate that. Would  
14 you do that. I don't understand how you have that movement  
15 that way.

16 MR. BERKOWITZ: Figure 6.

17 This illustration is a large size version of the  
18 figure in our testimony that I believe is Figure 6. This  
19 illustration shows the reactor vessel support ring in a  
20 developed view showing the cooling pad on top of the main body  
21 of the ring with the support shoe on top. It shows the  
22 leveling screws which were used to level the reactor vessel  
23 prior to the taking of the precise measurements for the shim  
24 plate. It shows the shim plate on which the reactor vessel  
25 feet slide, and it also shows some side shim plates that are



1 also provided but do not affect the levelness of the reactor  
2 vessel.

3 Up above on the top part of the figure which show  
4 the seating surface of the reactor vessel internals, and the  
5 bottom flange of the reactor vessel.

6 MR. BRIGGS: You haven't indicated the foot yet.

7 MR. BERKOWITZ: I'm sorry, sir. This is the reactor  
8 vessel foot.

9 CHAIRMAN JENSCH: And that slides over the shim  
10 plate?

11 MR. BERKOWITZ: Yes, sir.

12 CHAIRMAN JENSCH: Is that within a confined boundary  
13 of movement?

14 MR. BERKOWITZ: Confined in what sense, sir?

15 CHAIRMAN JENSCH: To limit the extent of the movement.

16 MR. BERKOWITZ: I believe the shoe and so on are  
17 designed to accept the radial expansion of it and the  
18 dimensions are properly determined for that purpose.

19 CHAIRMAN JENSCH: I understand that. Do you have  
20 some confined boundary for the movement or not?

21 MR. BERKOWITZ: I don't know, sir.

22 CHAIRMAN JENSCH: Thank you very much, Mr. Berkowitz.  
23 Is there any further interrogation?

24 Mr. Voigt; have you completed?

25 MR. VOIGT: Yes, sir.

1 CHAIRMAN JENSCH: Is there any further interrogation?

2 MR. ROISMAN: I just had a question for Applicant's  
3 counsel.

4 They kindly provided me with a copy of Page B11 of  
5 the FSAR that includes the quality assurance program with  
6 regard to nonconformity of parts. It has the statement in  
7 it, all details pertinent to the nonconformity are shown on  
8 applicable forms. Later on in the same page they refer to  
9 reports of nonconforming material which are to be maintained.

10 Have I now received a copy of all of those written  
11 materials, mainly, all details pertinent to nonconformity  
12 on the applicable forms and all reports of nonconforming  
13 material?

14 MR. VOIGT: To the best of my knowledge, that's  
15 correct.

16 MR. ROISMAN: Thank you.

17 CHAIRMAN JENSCH: Is there anything further?

18 MR. VOIGT: Mr. Chairman, if there are no further  
19 questions for these witnesses, I now respectfully request  
20 that they be excused and discharged from further attendance  
21 in connection with this testimony.

22 CHAIRMAN JENSCH: Any objection?  
23 Regulatory Staff.

24 MR. KARMAN: No objection.

25 CHAIRMAN JENSCH: State of New York.

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MR. MARTIN: No objection.

CHAIRMAN JENSCH: Hudson River Fishermen's Association.

MR. MACBETH: No objection.

CHAIRMAN JENSCH: Citizen's Committee.

MR. ROISMAN: I'm not sure of the significance of Mr. Voigt's last phrase, discharged from further testimony. I take it the Board's previous position of the record being closed would not mean that they would be foreclosed from being called back if cause were shown. I am not suggesting that I have any good cause, but I would assume that the Board might conceivably have that in mind. I didn't want Mr. Voigt's statement to indicate, or my assent to it to indicate that I have thought that the right to call them back if good cause was shown was being waived.

CHAIRMAN JENSCH: I think each of those matters would have to be considered when presented. Discharge of the witnesses does not close the record. It just relieves them from further attendance at the proceeding and production of testimony. Any other matters will keep the record open.

1 MR. VOIGT: That is my understanding, sir.

2 CHAIRMAN JENSCH: If there is no request at this  
3 time for further interrogation, the witnesses may be excused.

4 Is there any other matter we can consider before  
5 we proceed to a discussion of a motion for a testing license?

6 MR. TROSTEN: Yes, Mr. Chairman. There is one  
7 further matter.

8 At this time, Mr. Chairman, I would like to submit  
9 to the Board and the parties pursuant to the Chairman's  
10 direction yesterday to submit any further views concerning  
11 the ninety percent operating license in writing Applicant's  
12 motion for reconsideration of the Board's ruling on  
13 Applicant's motion for a ninety percent power operating license.

14 CHAIRMAN JENSCH: You may submit the matters and  
15 we will review them. We will take up any discussion now,  
16 however, the discussion in reference to the motion for a  
17 testing license up to a maximum of fifty percent.

18 MR. TROSTEN: Yes. We certainly can do that,  
19 Mr. Chairman. I just had something else I would like to say  
20 with regard to this.

21 We have received from Mr. Macbeth a request for an  
22 evidentiary ruling. We will respond in writing in opposition  
23 to that request. Our basic position with regard to this is  
24 that insofar as it deals with the requirements which must be  
25 included in the final detail statement, it is improper to submit

1 this request to the Board. Further, the request is too  
2 generalized and that it is contrary to the requirements of  
3 NEPA. As I say, we will file a written response setting forth  
4 our position in detail.

5 CHAIRMAN JENSCH: What answer to that do you have,  
6 Hudson River Fishermen's Association? If you desire to file  
7 a reply we will entertain the reply.

8 MR. MACBETH: Thank you.

9 MR. TROSTEN: I further wish to say, Mr. Chairman,  
10 with regard to our motion for reconsideration of the Board's  
11 ruling that we incorporate by reference herein our previous  
12 submissions to the Board setting forth our position concerning  
13 the Board's authority under Appendix D. Thank you,  
14 Mr. Chairman.

15 CHAIRMAN JENSCH: Will you proceed now with  
16 reference to the testing license? Do you think you have made  
17 out a case for a testing license?

18 MR. TROSTEN: Yes, Mr. Chairman. The Applicant  
19 most certainly considers that it has made out a proper case  
20 for the testing license.

21 By way of background, the Applicant and the Intervenor  
22 agreed to seek an expedited schedule for the fifty percent  
23 testing license. There is no opposition to this license from  
24 either the Environmental Defense Fund or the Hudson River  
25 Fishermen's Association. Only the Citizens' Committee for

1 the Protection of the Environment opposes the issuance of  
2 this license.

3 The testing license was sought by the Applicant in  
4 order to enable the Applicant to obtain necessary data concerning  
5 the operation of the plant as quickly as possible, to put  
6 Applicant in a position to operate the plant when the testing  
7 has been completed in order to supply power needed for this  
8 area.

9 We have submitted, Mr. Chairman, a radiological  
10 case which, in our view, justifies operation at 100 percent  
11 of full power, and we are essentially relying on that case  
12 for the issuance of a fifty percent testing license. In  
13 certain limited respects we have submitted additional  
14 testimony for the Board's consideration which pertains  
15 specifically to fifty percent operations.

16 Now Mr. Chairman, the record in this proceeding at  
17 the present time is well over 12,000 written pages, including  
18 the exhibits, and the original submissions, and during the  
19 course of the eighteen months of this hearing the issues have  
20 been fairly sharply defined as far as radiological safety  
21 matters are concerned. In our view the Applicant has  
22 presented clear evidence that postulated accidents have been  
23 properly analyzed and that proper measures have been provided  
24 to safeguard them, that the emergency core cooling system for  
25 the facility satisfies the Atomic Energy Commission's

1 applicable regulations, the interim acceptance criteria, and  
2 further that proper security and emergency plans have been  
3 provided in accordance with the Atomic Energy Commission's  
4 regulations.

5 In addition, we have demonstrated that the need for  
6 power from this facility, however pressing it may be, will  
7 not in any way compromise the safe operation of this facility.

8 What Applicant has basically done here, Mr. Chairman,  
9 in our view, is to demonstrate by convincing evidence  
10 presented orally at this hearing, and in writing through  
11 dozens of witnesses who have been available for cross-  
12 examination and interrogation by the Board, that the rigorous  
13 requirements of the Atomic Energy Act and the Atomic Energy  
14 Commission's regulations pertaining to nuclear safety have  
15 been satisfied. The Applicant has satisfied its burden  
16 of proof in the face of lengthy cross-examination by the  
17 Intervenor and searching interrogation by the Board. The  
18 Applicant is therefore entitled to a license under the  
19 Commission's regulations, having satisfied that burden of  
20 proof.

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1 Moreover, there is nothing really that the Intervenor  
2 the Citizen's Committee for the Protection of the Environment  
3 has stated, which truly attacks the safety of the Indian Point  
4 facility itself, as opposed to an attack on nuclear power  
5 reactors in general.

6 CHAIRMAN JENSCH: May I interrupt a moment?

7 MR. TROSTEN: Yes, sir.

8 CHAIRMAN JENSCH: Before you consider the opposition  
9 situation would you tell us a bit more by way of perhaps re-  
10 freshing recollection? I know I have a statement here from  
11 Mr. Cahill about the outline of your proposed testing  
12 operation, and we will keep that in mind, but if you will  
13 just summarize briefly the time involved, the steps you have  
14 involved and your statement talked about radiological safety.

15 In your opinion is there any NEPA considerations  
16 involved here?

17 MR. TROSTEN: Oh certainly, Mr. Chairman. Would  
18 you care to have me address that first?

19 CHAIRMAN JENSCH: I thought before you dealt with  
20 the opposition you would tell us what your affirmative case  
21 is.

22 MR. TROSTEN: Yes.

23 CHAIRMAN JENSCH: Thank you.

24 MR. TROSTEN: Certainly we have submitted to the  
25 Board as required by the Commission's regulations, a case



1 which justifies the interim operation, that is the testing  
2 of the facility in accordance with Section D2 of the  
3 Commission's Regulations.

4 We have presented this case in our written testimony  
5 dated October 19, 1971, which was supplemented during hearings  
6 in December and January. We have presented a case indicating  
7 the anticipated environmental impact, both radiological and  
8 otherwise, concerning the testing operations. We have  
9 described the testing operations, what it is that we plan to  
10 do, what the expected environmental impact will be during  
11 the period of those operations.

12 We have demonstrated, we believe, Mr. Chairman,  
13 by convincing evidence, that the environmental impact is  
14 insignificant, and in any event is overbalanced by the very  
15 pressing need to have this facility available to produce  
16 power.

17 As far as the scope of the testing activities them-  
18 selves, Mr. Chairman, which you inquired about particularly  
19 on Page 1 of your October 19 testimony, we described what  
20 it is that we planned to do, the general steps which are  
21 involved in taking this plant from criticality up through 50  
22 per cent power testing level.

23 We have described the period of time involved, which  
24 indicates that approximately seven days of testing would be  
25 involved in going to 20 per cent power, and an additional

1 forty-two days in order to test up to 50 per cent of power.

2 We have indicated that this estimate represents a  
3 best circumstances goal for the testing and we have con-  
4 servatively estimated that it could take as long as twice  
5 this period of time to complete this phase of our testing  
6 operation.

7 Mr. Chairman, as far as the environmental impact  
8 of this facility is concerned, we believe that it is as  
9 important from an environmental point of view for the testing  
10 license to be issued as it is from the radiological point of  
11 view.

12 We believe that very valuable data will be obtained  
13 concerning the operation of this facility if the Applicant  
14 is permitted to commence the testing operation. It is  
15 expected that these data will be available and will be  
16 provided to the Staff in accordance with the technical  
17 specifications and that these data will prove of great value  
18 in the further stage of this proceeding.

19 CHAIRMAN JENSCH: May I inquire, would you just  
20 give us a reference again to the amount of chlorine and what  
21 other chemicals will be released? During the testing only.

22 MR. TROSTEN: Yes, Mr. Chairman.

23 CHAIRMAN JENSCH: Presently do I understand you  
24 probably won't have a necessity of cleaning your steam  
25 generator? You may not have any chlorine moving during this

1 testing period, is that correct, Mr. Cahill?

2 MR. CAHILL: Sir, I don't think it can be stated  
3 that definitely. The period of time that we are running is  
4 limited, but there may be some need for maintaining the  
5 condenser cleanliness during the period.

6 We can say that we are not going to use chlorine  
7 during this period.

8 CHAIRMAN JENSCH: Thank you.

9 Will you proceed, Mr. Trosten.

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1 MR. TROSTEN: Yes, Mr. Chairman. I might add  
2 with regard to the Chairman's questions that the particular  
3 testimony on expected chemical discharges during the period  
4 of time is contained on pages 37 through 39 of our testimony  
5 of October 19th, 1971.

6 In addition, I would respectfully refer the  
7 Chairman to the findings and conclusions, proposed findings  
8 and conclusions, part two, which were filed on February 8th  
9 which have specific references to the transcript and to our  
10 proposed testimony for the expected chemical discharges, sir.

11 CHAIRMAN JENSCH: Thank you.

12 MR. TROSTEN: Mr. Chairman, once this plant has been  
13 tested to the fifty percent power level it will be possible  
14 for the plant at that point to commence steady state operation  
15 at that power level and to provide needed power for this area.  
16 In general, it is Applicant's position that we should be given  
17 this opportunity to test this facility, that the tests will  
18 provide vital information, and that the plant will then be  
19 available to serve the needs of this area.

20 Mr. Chairman, Applicant requests that the Board  
21 issue its initial decision with regard to radiological safety  
22 issues and that pursuant to Appendix D Section D.2 certify  
23 the entire record with regard to the environmental issues to  
24 the Commission for its determination.

25 As we have pointed out in previous correspondence

1 to the Board, specifically our letter of January 28th --  
2 Excuse me, February 8th -- we believe, Mr. Chairman, that  
3 the proper interpretation of the supplemental notice  
4 appearing in this proceeding and of the Commission's  
5 regulations is that in this situation where the Applicant has  
6 requested authority to test beyond twenty percent of power,  
7 that is to fifty percent of power, that the most appropriate  
8 thing to do and the most consistent approach to follow in  
9 light of the supplemental notice in the Commission's  
10 regulations for the Board's initial decision to deal with  
11 the radiological safety issues on the 50.57A of 10 CFR  
12 part fifty, and to refer the entire environmental record to  
13 the Commission for its determination.

14 CHAIRMAN JENSCH: Did the Commission consider that  
15 possibility in the Palisades case?

16 MR. TROSTEN: I don't believe that it did,  
17 Mr. Chairman, and I think the fundamental difference between  
18 the Palisades case and this case is that we are seeking a  
19 testing license here rather than an operating license.

20 CHAIRMAN JENSCH: That may be, but what you seek  
21 and what the regulations provide may have two different realms  
22 for consideration, and the fact that you have asked for  
23 something may not be fully consistent with the applications  
24 under the outstanding regulations.

25 MR. TROSTEN: Mr. Chairman, I would be the first to

1 admit that the Commission's regulations and the supplemental  
2 notice of hearing on this specific point are not entirely  
3 clear. What we are suggesting to you, Mr. Chairman, is that  
4 our interpretation of this is the most logical and rational  
5 one and we believe most consistent with the intent of the  
6 Commission in this respect.

7 CHAIRMAN JENSCH: Well, there has been the  
8 impression, I think, in some circles that the Board was looking  
9 for an initial determination by Boards that the Commission  
10 was looking up to the twenty percent level as to which the  
11 Boards are authorized to act, and upon the basis of that  
12 the Commission would have that determination for its  
13 consideration for any higher level power which it alone can  
14 offer.

15 MR. TROSTEN: Yes.

16 CHAIRMAN JENSCH: What you are suggesting is  
17 the Commission doesn't want a Board to give the benefit of  
18 a record, a determination of the record, to the Commission  
19 up to the twenty percent limit. Is that your view?

20 MR. TROSTEN: No, it really isn't that, Mr. Chairman.

21 CHAIRMAN JENSCH: That accounts for that.

22 MR. TROSTEN: I don't really think so, Mr. Chairman.

23 CHAIRMAN JENSCH: Why doesn't it?

24 MR. TROSTEN: The reason I think there is a  
25 difference here is that I feel in a situation such as this

1 whereas I have just described the testing operation lasts  
2 for seven days, up to the twenty percent level, and then  
3 there is an additional forty-two days going from the twenty  
4 percent level to the forty-nine percent level, that it seems  
5 to me to make a great deal more sense for the Board to refer  
6 this entire matter to the Commission in order for the  
7 Commission to see the whole thing in context rather than for  
8 the Board just to deal with this limited period.

9 This is no effort, Mr. Chairman, to take this matter  
10 away from the Board.

11 CHAIRMAN JENSCH: Look at it from the Commission's  
12 point of view, if we can all assume that prerogative for  
13 the moment. But a Board has been appointed to consider  
14 radiological and NEPA considerations.

15 MR. TROSTEN: Yes.

16 CHAIRMAN JENSCH: The Commission will expect the  
17 Board, I think it's the obligation that devolves upon the  
18 Board in proceeding to a case, to scrutinize the entire  
19 record.

20 MR. TROSTEN: Yes.

21 MR. CHAIRMAN: If I may use the term, they have lived  
22 with the record, they have worked with the witnesses and the  
23 attorneys and the parties, and I think that aside from our  
24 personal involvement in this case, that as a general  
25 consideration of the matter, that a Commission which is under

1 greater responsibility in many, many areas may find it  
2 difficult itself to recreate in its mind the problems that  
3 will be reflected by the record, with no intention to  
4 disparage their capability in any respect, but there is a  
5 certain physical limit of it that any human being must  
6 consider, and it may be that the Commission would have to take  
7 a great deal of time to go through these, did you say 12,000  
8 pages with exhibits? But there is about 5,000 pages of the  
9 transcript, or a little more, and a Commission may take --  
10 Well, if they can read the transcripts in the evening, you  
11 know, a couple of hundred pages would just about do it for  
12 an evening, and they may have some other, you know,  
13 arrangements that they made, and their days now, I am sure,  
14 are full with a limit of twelve hours of duty and responsibility,  
15 and I just wonder what you envision the time schedule would  
16 be for the Commission to thoroughly review the record and  
17 not have the benefit of all views not only of the attorneys  
18 and the parties and the witnesses but the Board which was  
19 appointed to come up with something?

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1 CHAIRMAN JENSCH: (Continuing) Radiologically you  
2 indicate that the Board will go into official position on  
3 radiological matters. I think the time element obviates  
4 the application of the usual administrative process.

5 You say, we don't really intend it, but that's the  
6 way it works out. Depends how you look at it. It kind of  
7 amounts to the same thing.

8 Just supposing these seven days as kind of a common  
9 denominator. But supposing it happens that these seven days  
10 that the plant was in operation, there was the greatest  
11 release of chlorine and sulfates. Maybe I use some terms that  
12 Mr. Macbeth used. This was the crucial time for striped bass  
13 to be spawning or they were coming down the river, and they  
14 caught it all.

15 Then you say seven days isn't that much. Then  
16 there won't be any more fish. It will take three or four  
17 years for them to come back. Maybe those things don't work  
18 out that way. So I don't know that the time element that you  
19 propose to operate necessarily excludes the application of the  
20 law or the administrative process as ordinarily undertaken.

21 MR. TROSTEN: Mr. Chairman, we are not suggesting  
22 that we are circumventing the law or the administrative  
23 process. I want to say, also, that the time element, the  
24 seven-day period of testing is not the only reason why we  
25 feel it makes more sense to interpret the regulations as we

1 are suggesting.

2 CHAIRMAN JENSCH: Where do you find that language?  
3 I'd like to see where it is. I just don't see it. It says  
4 that the Board shall consider, after a consideration and  
5 balancing on the record all the factors described below.  
6 Then they enumerate three factors.

7 They say, anything above 20 per cent, that has to  
8 go to the Commission.

9 The inference may well be that a commission wants  
10 a balancing by the Board for you folks to even get 20 per  
11 cent. You are saying that the Board shouldn't go for the 20  
12 per cent at all because we give the commission the thousands  
13 of pages of testimony, and we hope they will have it out in  
14 a week. I think it is not only unrealistic but contrary  
15 to the tenor of the regulations.

16 MR. TROSTEN: Mr. Chairman, first with respect to  
17 the rationale for our position, and then to turn to the notes  
18 of hearing as well as the regulations.

19 In addition to the short period of time involved  
20 here, which I really believe was not within the contemplation  
21 of the commission when it set this 20 per cent level in the  
22 regulation, there is also the fact that if the Board were to  
23 follow the procedure first dealing with 20 per cent and then  
24 certifying the matter to the commission, then the commission  
25 would then have to look at much the same matter again, and it

1 would have to interpret the evidence in a somewhat strained  
2 way as dealing with testing from 20 per cent to 50 per cent.

3 CHAIRMAN JENSCH: They did that in Palisades. I  
4 don't think I have seen any criticism from the applicant in  
5 that case or any other applicant, with the decision rendered  
6 by the commission. I don't think it would strain at all.

7 MR. FROSTEN: Again, if you were dealing with a  
8 situation where you were operating at 20 per cent for some  
9 specific period of time, Mr. Chairman, it is a lot easier to  
10 see the sense of then referring this to the commission with  
11 regard to operations, steady state operations beyond 20  
12 per cent up to the 60 per cent level as in the case of  
13 Palisades.

14 CHAIRMAN JENSCH: I don't know that Palisades had  
15 20 per cent more than seven days. I don't know that you will  
16 be able to get 20 per cent in seven days or stay there for  
17 seven days. You may have to come back down when you get to  
18 20 per cent. I don't know. I am just worried about the time  
19 projections that should limit the application of the rules or  
20 regulations in any way without seeing something specific in  
21 here.

22 That is within reasonable specificity we are looking  
23 for now.

24 MR. FROSTEN: The other point, Mr. Chairman, is the  
25 language on Page 5 of the original version of the supplemental

1 notice of hearing, which I will read now for you. It says  
2 that:

3 "If a license is one which requires the specific  
4 approval of the Commission, the Board will certify directly  
5 to the Commission for the determination without ruling there  
6 on the matter of whether operation beyond 20 per cent of full  
7 power should be authorized."

8 I'd like to emphasize that contrary to what the  
9 Intervenorers have suggested, that somehow this is an effort on  
10 the part of the Applicant to circumvent the regulations or  
11 circumvent the Board or do anything of the sort. That is  
12 simply not the case. It is our interpretation of what is  
13 most logical under the terms of the regulations.

14 The decision on this clearly will be made by the  
15 Board. We submit that what we are saying is more rationale  
16 and a better approach for the Board to follow.

17 In any event, you have asked for our position on it,  
18 Mr. Chairman.

19 CHAIRMAN JENSCH: Thank you.

20 MR. TROSTEN: Mr. Chairman, in light of the time  
21 requirements that you set, I would --

22 CHAIRMAN JENSCH: We are running a little ahead of  
23 time. For the first time in this case, I think we have run  
24 ahead of time and we have more time now for you.

25 MR. TROSTEN: What I would prefer to do is to reserve

1 the balance of my time, following Mr. Roisman's presentation.

2 CHAIRMAN JENSCH: Could you tell us what it is about  
3 Mr. Roisman's presentation that is objectionable in your view?

4 MR. TROSTEN: How much time did you say we had,  
5 Mr. Chairman?

6 CHAIRMAN JENSCH: Five minutes here and there won't  
7 make a great deal of difference. Go ahead.

8 MR. TROSTEN: Fundamentally what I object to about  
9 Mr. Roisman's position, Mr. Chairman, is that it really amounts  
10 to a presentation that nuclear power reactors are simply too  
11 unsafe to be built. When you strip away all of the other  
12 elements of it, Mr. Roisman and his client came into the  
13 hearing convinced that all nuclear power reactors are too  
14 unsafe to be built.

15 I'm afraid, notwithstanding our efforts, we haven't  
16 convinced him otherwise. They still believe this.

17 I'm really not sure whether anyone could ever  
18 convince either Mr. Roisman or his clients that nuclear power  
19 reactors are safe enough to build. At least I don't think  
20 it could be done within this century.

21 So, on that basis, it is rather difficult to really  
22 find ways in which you would be able to solve the concerns  
23 that have been expressed by the Intervenor.

24 The problem with that position, fundamentally, is  
25 that it is not consistent with the applicable legislation or

1 the applicable regulations. Perhaps Mr. Roisman's clients  
2 would like to see the basic legislation amended so that it  
3 would not be possible to build either Indian Point 2 or any  
4 other nuclear power reactor because there is not enough  
5 information which is available. But a basic policy decision  
6 has been made that provided enough information of sufficient  
7 quality, backed up by sufficient data, and if it is presented  
8 to the Board, this Board can make the decision that this  
9 facility is safe enough to be built and operated.

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1 CHAIRMAN JENSCH: Excuse me for interrupting. Will  
2 you define -- And it may be helpful for his argument later  
3 on. What do you mean by reasonable assurance that the  
4 facility can be operated without undue risk to the health  
5 and safety of the public in contrast to -- I don't know  
6 whether the statement was made in the earlier part of this  
7 proceeding that there be a guarantee of absolute safety.

8 ~~MR. TROSTEN: Mr. Chairman, I don't believe that~~  
9 the phrase, "reasonable assurance of the safety of the plant"  
10 is equivalent to the concept of a guarantee of absolute safety.  
11 There is no guarantee of absolute safety that could be given  
12 with regard to a nuclear power reactor or with regard to  
13 anything else that we live with in this world.

14 A decision has been made that provided data be  
15 presented, provided expert opinions are presented, and these  
16 data and opinions are presented to a Board, this Board, which  
17 is able to exercise informed judgment on the basis of the  
18 evidence presented, and then this Board is in the position  
19 to determine, in the exercise of its expert judgment, that  
20 this plant is safe enough to be built; that enough evidence  
21 has been presented to assure that the public health and  
22 safety will not be in danger.

23 We submit, Mr. Chairman, that if those 12,000 pages  
24 of transcript, and with all the dozens of witnesses who have  
25 been here who have testified before this Board in this public

1 hearing, that the record is fully adequate to satisfy the  
2 requirements that the public health and safety have not been  
3 endangered, and that this Board is in a position to determine  
4 that the Atomic Energy Act's requirements have been satisfied  
5 and that this license should be issued.

6 CHAIRMAN JENSCH: It is your view that the direction  
7 from the Congress as well as the scope of the regulations as  
8 issued by the Atomic Energy Commission provide an adequate  
9 framework within which the parties and the Board can arrive  
10 at the determinations required by the statute and the  
11 regulations, is that your view?

12 MR. TROSTEN: Yes, sir, that is correct.

13 CHAIRMAN JENSCH: Have you concluded?

14 MR. TROSTEN: I have concluded.

15 MR. BRIGGS: I have just a question here. It seems  
16 to me that my records show that the State of New York opposes  
17 the testing license. Has that situation changed?

18 MR. TROSTEN: Mr. Chairman, the State of New York  
19 had opposed -- That is the Attorney General of the State of  
20 New York had opposed a testing license while the matter of  
21 the Department of the Environmental Conservation of the State  
22 of New York's outstanding order prohibiting the operation of  
23 these circulating water pumps was still outstanding.

24 Excuse me just a moment. What I would characterize  
25 as a consent order has been agreed to or has been entered by



1 the State. We have not yet received it, I am advised. But  
2 we have been authorized to start the circulating water pumps  
3 by the Department of Environmental Conservation.

4 MR. BRIGGS: But the Attorney General hasn't sent  
5 out any letters saying that he has withdrawn his opposition?

6 MR. TROSTEN: I have seen no such letter, Mr.  
7 Chairman, although that was the statement that he made on  
8 the record.

9 MR. BRIGGS: The statement that he made on the  
10 record?

11 MR. TROSTEN: The statement that was made by the  
12 representative of the Attorney General of the State of New  
13 York, Mr. Proudfit, I believe it was, was that the Attorney  
14 General's opposition was related to the existence of the  
15 outstanding order.

16 I would have to go back and check the transcript on  
17 this, Mr. Briggs, but I am reasonably certain that that was  
18 what he said.

19 MR. BRIGGS: I think it would be more helpful if  
20 we had a letter from the Attorney General saying that he no  
21 longer opposes the granting of the testing license, if that  
22 is the case.

23 MR. TROSTEN: Yes, Mr. Briggs.

24 CHAIRMAN JENSCH: Do you desire to reserve some time?

25 MR. TROSTEN: Yes.

1 CHAIRMAN JENSCH: Does the Regulatory Staff desire  
2 to speak to this matter?

3 MR. KARMAN: Yes. May I have a few moments?

4 CHAIRMAN JENSCH: Yes.

5 MR. KARMAN: Pursuant to the Atomic Energy Act and  
6 rules and regulations and criteria, the Regulatory Staff has  
7 reviewed the application of the Applicant for an operating  
8 license over the course of several years now. This hearing  
9 has been going on since December of 1970.

10 I am going to restrict my comments to the fifty  
11 percent testing license which is now before the Board, although  
12 the Regulatory Staff has indicated by way of safety evaluation  
13 and other documents, that it is considered that the application  
14 for the plant for 100 percent can reasonably be granted.

15 However, for this fifty percent license the Board  
16 has before it much testimony as comprehensive findings and  
17 responses thereto. In addition, in January the Regulatory  
18 Staff presented, by way of evidence at this hearing, an impact  
19 statement pursuant to Section D.2 of the Appendix D to  
20 Part 50 of the Code of Federal Regulations, wherein it was  
21 the conclusion of the Regulatory Staff that this testing  
22 license could be and should be granted. Since that time there  
23 have been several matters which have come before the Board,  
24 and we have had continued hearings, as if evident by the  
25 three days which we just completed now, based upon the

1 allegation by the President of the PECOR Division, the  
2 Pennsylvania Engineering Corporation, which I'm certain the  
3 Board was -- And rightfully so. -- interested in having  
4 decided before it could issue any operating license because  
5 of the possibility of a safety related item.

6 With respect to the findings, the Regulatory Staff  
7 cannot agree with the Applicant's position on the findings  
8 and submission by the Board to the Commission, as was  
9 indicated in our responses of March 10 and March 15th. We  
10 do feel that the Board should make the proper balancing under  
11 Appendix D, make the findings up to twenty percent which  
12 Appendix D contemplated, and then refer, for the balance of  
13 the thirty percent request, to the Commission for its  
14 determination.

15 CHAIRMAN JENSCH: Very well. Does the New York  
16 State Atomic Energy counsel desire to speak to this matter?

17 MR. MARTIN: Yes, Mr. Chairman.

18 CHAIRMAN JENSCH: Proceed.  
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1 MR. MARTIN: Mr. Chairman, the New York State  
2 Atomic Energy Council is taking the position that with respect  
3 to this application, that it does not oppose the application  
4 on environmental grounds, and it also takes the position that  
5 the need for power in New York State from this plant is such  
6 that they hope the Board would consider the granting of the  
7 motion favorably.

8 That as contrasted with the Attorney General, the  
9 New York State Atomic Energy Council is a group, established  
10 by law, that is charged with responsibility of developing a  
11 coordinated point of view. On behalf of the agencies of the  
12 government of New York State, they are concerned with atomic  
13 power.

14 At the time that this application was made by the  
15 Applicant, the Council met. Among the members of the Council  
16 represented at that meeting were the designee of the  
17 Commission of Environmental Conservation and the Public  
18 Service Commission. At that time the position the council  
19 would take with respect to this application was discussed.  
20 It was resolved that the need for power was of such a nature  
21 that the Council would express its desire that this applica-  
22 tion be granted, and also that the situation with respect to  
23 Department of Environmental Conversation was such that there  
24 was no reason to oppose the application.

25 Since that time and since that meeting was held,

1 there has been no communication from the Department of  
2 Environmental Conservation indicating that the Council should  
3 in any way need to consider changing their view, although  
4 there has been a communication informally, not at a meeting  
5 concerning this problem of circulators. I cannot speak for  
6 the Attorney General's office on what his position is.

7 It is my recollection that Mr. Trosten's recollec-  
8 tion as to the nature of their opposition, that is pending  
9 a resolution of the undetermined consent order that would be  
10 entered, and it is my recollection that that is correct, that  
11 the Attorney General took the position, so long as there was  
12 any unresolved question that Con Edison would agree upon.  
13 If they have reached agreement, I haven't been informed of  
14 that.

15 On behalf of the Atomic Energy Council, our position  
16 is still that we support the application with respect to the  
17 need of power from this plant for the State of New York, and  
18 we do not oppose it upon any environmental ground.

19 CHAIRMAN JENSCH: Is there some coordinating you  
20 were going to undertake to get the Attorney General's view in  
21 line with the Conservation Department or on the circulator pump?  
22 Is that the main coolant pump you are talking about?

23 MR. MARTIN: Yes.  
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1 CHAIRMAN JENSCH: You say you haven't been informed  
2 about it and it may be resolved. It is your view that the  
3 Attorney General feels the matter of the coolant pump should  
4 be resolved before he will withdraw his objection; is that  
5 correct?

6 MR. MARTIN: Of course, it is here and it is on the  
7 record what his position is. It was their objection at the  
8 time they made the objection to this application was based  
9 upon the lack of resolution of that matter.

10 MR. TROSTEN: May I just read from the transcript?  
11 I think it would clarify the issue.

12 CHAIRMAN JENSCH: Let me ask one thing. Mr. Martin,  
13 if Mr. Madsen could hold it, please.

14 Could you get a letter from the Attorney General?

15 MR. MARTIN: I can ask him. The Attorney General is  
16 a separate party to this proceeding. As an elected official,  
17 he has that right to make himself a party. He is not a  
18 member of the Atomic Energy Council and I don't represent his  
19 office in any way.

20 CHAIRMAN JENSCH: We recognize you can't commit  
21 him. Will you ask for a statement on his position on this  
22 matter?

23 MR. MARTIN: Yes, I will.

24 CHAIRMAN JENSCH: Thank you.

25 MR. TROSTEN: Mr. Chairman, may I read the statement?

1 This is on Page 4786, representing the Attorney General of  
2 this state. Mr. Proudfit said the following:

3 "Let me say this, Mr. Chairman. The Department of  
4 Environmental Conservation is willing to rescind this order  
5 if certain conditions are met by the Applicant. As far as  
6 I know, none of these conditions have been met yet, although  
7 they apparently are discussing them at this time. But this  
8 order is still in effect, and as long as this order is in  
9 effect, we maintain our position that we are opposed to this  
10 motion."

11 He was referring, of course, to the order of the  
12 Department of Environmental Conservation dealing with the  
13 circulating water pumps of the plant. We do not know, of  
14 course, Mr. Chairman, whether the Attorney General will send  
15 such a letter. We really believe that what his representatives  
16 said on the record, we hoped would be satisfactory from the  
17 standpoint of the Board.

18 CHAIRMAN JENSCH: The outstanding statement then is  
19 that he opposes it; is that correct?

20 MR. TROSTEN: So long as the order is in effect,  
21 Mr. Chairman.

22 CHAIRMAN JENSCH: Is the order still in effect?

23 MR. TROSTEN: The order is not in effect any longer,  
24 Mr. Chairman.

25 CHAIRMAN JENSCH: If we may see what order rescinds

1 the other order, that would be helpful.

2 MR. TROSTEN: We will furnish the Board with a  
3 copy of the order.

4 CHAIRMAN JENSCH: Excuse me, Mr. Martin. Have you  
5 concluded?

6 MR. MARTIN: Yes.

7 CHAIRMAN JENSCH: Mr. Macbeth.

8 MR. MACBETH: I'd like to say a few words, Mr.  
9 Chairman.

10 CHAIRMAN JENSCH: As I understand it, you have  
11 entered into a stipulation. Tell us a bit about the  
12 stipulation.

13 I think something was said about forty-nine days  
14 and it could be twice that long, over three and a half or  
15 three and a third months involved here for the license.  
16 As I understand, in that period of time you don't believe  
17 there will be any environmental damage, is that your view?

18 MR. MACBETH: No. I disagree with that on two  
19 counts, Mr. Chairman.

20 First, the period for the 50 per cent testing, as  
21 I believe, is forty-nine days. The sixty-three-day period  
22 that I was referring to two days ago was in relation to the  
23 90 per cent motion.

24 CHAIRMAN JENSCH: Excuse me.

25 Mr. Trosten this morning gave us seven days, up to



1 20 per cent of power; forty-two more days to go to 50 per  
2 cent. That's forty-nine.

3 As we recognize, it could take that long, he said.  
4 That is ninety-eight. I have three and a third months.

5 MR. MACBETH: I misunderstood you.

6 CHAIRMAN JENSCH: You say there would be no  
7 environmental damage in that period of time?

8 MR. MACBETH: No.

9 CHAIRMAN JENSCH: What is the scope of your  
10 stipulation?

11 MR. MACBETH: We are not opposed to the issuance of  
12 this license. There are a number of practical problems that  
13 the Hudson River Fishermen's Association faced at the time  
14 we entered into the stipulation in November. There were  
15 various outstanding disputes over other matters with the  
16 Applicant. There was a very clear problem of having our  
17 experts look at the material the Applicant had prepared for  
18 hearings.

19 We wanted to keep this hearing going on an  
20 expedited basis as possible, and we also wanted to obviously  
21 concentrate our resources on the largest issues.

22 So that we had to reach a practical decision on  
23 whether or not we would put in the resources, put in the time  
24 and so on in opposing the 50 per cent testing license.

25 It is clear that this is obviously a license for a

1 much shorter period than the 100 per cent license for forty  
2 years. We made the decision in the face of the practical  
3 considerations which faced us at that time, that we would not  
4 oppose this license but would oppose any further license.

5 Of course, in particular, concentrate on the 100  
6 per cent license for forty years.

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1 CHAIRMAN JENSCH: Excuse me for interrupting.  
2 Now I appreciate the stipulation with a kind of practical  
3 adjustment that you made to your schedule and your  
4 anticipation of how you would proceed in this proceeding,  
5 but we want to know somewhere, we will have to perhaps dig  
6 it out of the evidence, it's here, as to whether a balancing  
7 can be made of the matters which the Commission has prescribed  
8 for consideration under Appendix D.2, Part 50 of the  
9 regulations.

10 Now your stipulation doesn't help us in that regard.  
11 Now the fact that you have withdrawn, by way of stipulation,  
12 from consideration of the environmental matters for this  
13 testing license in a sense may be an easy out for you because  
14 you have a lot of other things to think about, and your  
15 experts are busy at this. But we still have a question of  
16 environmental consideration to be undertaken in this  
17 proceeding. And I am glad to have your statement that you  
18 in a sense pulled out of this testing analysis because you  
19 were busy with some other things, or your experts wanted to  
20 look at some larger issues that you felt were there. These  
21 issues are just as large to us as the regulations define them  
22 to be.

23 MR. MACBETH: Mr. Chairman, there is a very real  
24 point to what you say. I think the Board does retain a duty  
25 which on this motion the Hudson River Fishermen's Association

1 will be of little or no help to the Board on. The stipulation  
2 that we entered into with the Applicant makes it clear that  
3 we will not take a position on the merits of this motion,  
4 and I feel bound by that motion, and I in a sense apologize  
5 to the Board that we do not have the resources, do not have  
6 the resources and the time that would be necessary to focus  
7 on this issue. Our experts have not spent the time,  
8 additional time that would be necessary, to locate the precise  
9 period, and during which the fifty percent testing license  
10 would be in effect, to analyse exactly what would happen.

11 Those are difficult problems, and quite bluntly  
12 put, the Hudson River Fishermen's Association has not taken  
13 them on, and I apologize to the Board that we can't be of  
14 any further help on that issue, but we have not prepared  
15 evidence on it, we have not presented evidence on it, and we  
16 simply aren't in a position to take a position on the merits  
17 on that. We made a practical judgment and I feel especially  
18 in light of the stipulation with the Applicant that we must  
19 rest on that.

20 CHAIRMAN JENSCH: I don't ask you to change. I  
21 am only trying to be sure I understand that your stipulation  
22 is not to be construed as any approval or any indication that  
23 there aren't some environmental matters, but you are just not  
24 going to participate in them, is that correct?

25 MR. MACBETH: That is true. And I would point out

1 to the Board the language in the supplemental notes of hearing  
2 that says that "Any license issued pursuant to D.2, Appendix  
3 D will be without prejudice to subsequent licensing action  
4 which may be taken by the Commission with regard to environmental  
5 aspects of the facility and will be conditioned to that effect,  
6 and I would suggest to the Board that the language to that  
7 effect be included in any fifty percent testing license.

8 I think that the Applicant would agree that there  
9 is no suggestion in the stipulation that it would close off  
10 from debate in any further licensing action issues relevant  
11 to environmental matters, and I would suggest to the Board  
12 that language close to that or perhaps exactly that in the  
13 supplemental notice of hearings be included to make that clear.

14 MR. TROSTEN: Mr. Chairman, in all fairness to our  
15 previous discussions with the intervenors I think it would be  
16 fair to say that the Board is required to make a balancing  
17 judgment, and what the intervenors, I believe, have agreed  
18 to in the stipulation, is that they neither approve nor  
19 disapprove. They simply have not made and presented evidence  
20 on the balancing.

21 CHAIRMAN JENSCH: That has come out of your reserve  
22 time.

23 Citizens' Committee, will you proceed.

24 MR. ROISMAN: Mr. Chairman, before speaking on  
25 behalf of the Citizens' Committee I just would like to briefly

1 speak on behalf of the Environmental Defense Fund and adopt  
2 in toto what Mr. Macbeth has said. The Environmental Defense  
3 Fund has, as a matter of policy, never expressed an opinion  
4 on the subject it felt it could not provide adequate expertise  
5 to do so in a technically competent manner, and because of  
6 that we made a practical judgment as did the Hudson River  
7 Fishermen's Association that we simply would not be able to  
8 provide the resources to do the job that we felt was needed  
9 before we would express an opinion on the fifty percent  
10 testing license, and remain absolutely neutral.

11 Mr. Trosten stated it correctly, we neither approve  
12 nor disapprove the fifty percent testing license.

13 Now with regard to the Citizens' Committee for the  
14 Protection of the Environment, I think that Mr. Trosten has  
15 to some extent appropriately described the position of the  
16 Citizens' Committee when he said that we are concerned about  
17 the safety of nuclear power reactors as a generic matter as  
18 well as concerned with the safety of the nuclear power  
19 reactor here in dispute. But he has also indicated or implied  
20 that Congress, by passing the Atomic Energy Act of 1954 and  
21 subsequent amendments, has in some way or another stamped  
22 approval on the licensing of nuclear power plants as a generic  
23 matter, and I think that is not so at all. What Congress has  
24 done is it has delegated to the Atomic Energy Commission,  
25 and the Commission in turn has delegated to this Board and

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other Boards like it, responsibility to decide whether a nuclear power plant should be licensed, and in that proceeding it is appropriate to consider whether or not the plant is safe without any assumptions that anyone higher up or any piece of legislation has indicated that there is an applied safety to nuclear power plants, and it's merely a matter of seeing whether or not a particular Applicant comes up to the well-established standards that are set and achievable for nuclear power plants.

1           It is our position that at this time in this period  
2 of development of what is really an emerging technology, the  
3 development of nuclear power plants as such, that nuclear  
4 power plants generically, and this particular plant in  
5 particular, are not safe and are not suitable for licensing.  
6 We focus on this particular plant because really it is the  
7 paradigm example, if any plant in this country is not safe  
8 for operation it is Indian Point Number 2.

9           It is in one of the most highly concentrated  
10 population areas of the country. If an error is made, if the  
11 risk of an accident in fact is materialized, and if that  
12 accident causes the horrible consequences that the Atomic  
13 Energy Commission outlined in WASH 740, they will be most  
14 horrible here. The environment here is not only highly  
15 concentrated, but we sit in a deep valley that would funnel  
16 by the prevailing winds most of the radioactivity to America's  
17 largest city.

18           And we believe that this is an appropriate place to  
19 ask the ultimate question, has nuclear technology reached a  
20 sufficient stage of development that it is appropriate to  
21 subject the public to the risk of a major nuclear power plant  
22 such as this one?

23           CHAIRMAN JENSCH: May I interrupt? Is it your view  
24 that the same determinations have to be made on safety issues  
25 and safety components for this 50 per cent testing license as



1 it would be for any steady state operation?

2 MR. ROISMAN: No, it is not our position that that  
3 must be done. For instance, in our filing with regard to the  
4 50 per cent testing license we specifically identified the  
5 issue of iodine which we discussed somewhat this morning and  
6 indicated that our problem with regard to offsite doses in  
7 the event of a loss of coolant accident, assuming the  
8 TID 14844 assumptions, and not getting into any other issues  
9 regarding the working of ECCS or the failure to work were  
10 such that a 50 per cent the amount of iodine released would  
11 be sufficient in our opinion that we could not establish  
12 that presently controls by the Applicant were not adequate  
13 to deal with that, that our iodine problem only arose as you  
14 got above the 50 per cent level, and we expressed to the  
15 Board our concern that it need not resolve the iodine question  
16 in the context of the 50 per cent license.

17 By the same token, a number of our positions with  
18 regard to safety do to some extent depend upon the fact that  
19 forty years of operation involves a greater risk than one day  
20 or one week or forty-nine days or ninety-eight days of opera-  
21 tion. But by the same token the experience with nuclear  
22 power plants demonstrates that the testing period is the  
23 period with more uncertainties in it than might be the case  
24 of a period three or four years down the line after the  
25 plant had gone through its shakedown period and was running

1 "relatively smoothly".

2 So that we were not able to make a judgment that  
3 other important issues, such as emergency core cooling system  
4 or the adequacy of plant security or problems associated with  
5 risks to the public due to the applicant's confusion of the  
6 need for power with the need for safety, that any of those  
7 could definitely be ruled out. But it would be disingenuous  
8 of us to not suggest to the Board that as the risk gets lower  
9 it may well be that you get closer to the point at which  
10 safety is appropriate.

11 And it might be that if the only application that  
12 were pending and were ever intended to pend by Con Edison  
13 was to operate this plant for ninety-eight days for the pur-  
14 pose of testing it up to 50 per cent of power, and that after  
15 that it would not be operated again, conceivably the Citizen's  
16 Committee for the Protection of the Environment, realizing  
17 its limited resources, would not have opposed that request.

18 Obviously, of course, that is not the case, and the  
19 case is that the 50 per cent testing is but the first step in  
20 an important move by the applicant to bring forty years of  
21 nuclear power to the Indian Point site, to a plant which is  
22 larger than any plant licensed today with regard to the  
23 Westinghouse Corporation that we are aware of.

24 CHAIRMAN JENSCH: May I interrupt?

25 MR. ROISMAN: Yes.

1 CHAIRMAN JENSCH: What influence do you believe the  
2 operation of Indian Point Number 1 has in this consideration?

3 MR. ROISEMAN: I am not sure what you mean by  
4 influence.

5 CHAIRMAN JENSCH: Influence in this respect: We  
6 haven't gone over the Indian Point Number 1 facility or  
7 operation in any detail, but it has been referred to, we  
8 know it's there, we know it's operating some parts of the  
9 time, aside from this water circulating pump problem, but it's  
10 been there for some period of time under the control and  
11 management of people who are gaining nuclear experience every  
12 day and exercising control.

13 Now are those factors of assistance in your analysis  
14 in reference to Indian Point Number 2?

15 MR. ROISEMAN: I think it would have been possible,  
16 although we did not choose to pursue this route, to bring  
17 into evidence in this proceeding the operating record of  
18 Indian Point Number 1 in an attempt to demonstrate one way or  
19 the other regarding the applicant's competence to operate a  
20 nuclear power reactor. We think that that record would tend  
21 to support the position that the applicant has had problems  
22 with Indian Point Number 1, which may either stem from  
23 problems in their own administration with regard to the plant  
24 or fundamental design problems in the plant.

25 But the difference between that plant and Indian

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1 Plant No. 2 in terms of design and operation and where the  
2 nuclear industry is today compared to where it was then is  
3 so substantial that we were concerned that we would spend a  
4 substantial period of hearing time with an issue which might  
5 have only tangential relationship to the issue here, and that  
6 if we were to point out some massive misapplication of  
7 appropriate safety principles in permitting radiological  
8 monitors to be jammed and not properly maintained that  
9 happened in say 1968, that it would have been appropriate  
10 for the applicant to have said, "Well, the man who did that  
11 is no longer with us and the procedures that we used then  
12 have been modified," and it wouldn't necessarily have  
13 established that the applicant was incompetent.

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1 By the same token, if the Applicant had pointed to  
2 some particularly favorable year when things had run very  
3 smoothly at Indian Point No. 1, that wouldn't necessarily  
4 prove that this is substantially larger, almost four times  
5 larger plant, with substantially new and modified equipment  
6 in it would equally well be run. So that we think that  
7 Indian Point No. 1 in a safety context is not relevant, nor  
8 have we attempted to relate accident conditions to suggest  
9 that an accident at No. 2 would somehow or another be more  
10 severe, because No. 1 was at the site. We have not raised  
11 that issue either.

12 Now we believe that the starting point for an  
13 analysis of the safety question is to recognize where the  
14 burden lies. Applicant's counsel has suggested that the  
15 record has in it some evidence which would establish the plant  
16 is safe. Assume arguendo for a moment that that is true.  
17 The purpose of this Board, of course, is not to make a court  
18 review of the Applicant and Staff presentations to see if there  
19 is "substantial evidence in the record" to sustain the question  
20 of safety, but is to go to a higher and more stringent standard,  
21 namely to find out whether or not it is more probable than  
22 not that as to these various safety issues the Applicant  
23 has carried the burden of proof, and the presence of some  
24 positive evidence in the record, of course, does not relieve  
25 the Board of the responsibility to look at the negative

1 evidence and to determine whether or not a preponderance of  
2 the evidence favors the position urged by the Applicant and  
3 the issues of safety.

4 Now we began when this hearing began with the  
5 proposition that there was an implicit risk-benefit analysis  
6 that has to be made in the licensing of nuclear power plants,  
7 and that it was appropriate to consider what benefits would  
8 flow from the plant in order to weight it against the risk.  
9 In the course of this hearing we have been reminded again  
10 and again by the Staff and the Applicant that no such risk  
11 benefit takes place, and that unless the plant is safe it  
12 will not be permitted to operate, and that if it is not safe  
13 no amount of potential benefit from its operation will  
14 override that safety.

15 We accept that principle and assume that the Board  
16 is going to judge this plant on that principle. We think  
17 that utilizing that principle it is not clear that this plant  
18 is sufficiently safe to operate.

19 CHAIRMAN JENSCH: Even for testing?

20 MR. ROISMAN: Even for testing.

21 We turn at this time to the substantive issues, and  
22 I think that clearly the most important of these issues is  
23 the matter of the emergency core cooling system. Regardless  
24 of the Board's resolution of the question of additional  
25 notice, the fact remains, and it cannot be removed, that the

1 Atomic Energy Commission is in the position of holding a  
2 lengthy, detailed scientifically extremely important hearing  
3 regarding the emergency core cooling system. That hearing,  
4 if it proves nothing else, proves the basic proposition that  
5 nuclear technology is an emerging field, and it does support  
6 our basic position that it is too soon to license nuclear  
7 power plants like Indian Point No. 2 in as close proximity  
8 to major population centers, that the industry should remain  
9 where it has been for many years, in the field of prototype  
10 designs, and work out the problems before they come for the  
11 building and the operation of nuclear power plants like  
12 Indian Point No. 2.

13 Even in fields where we are dealing with less  
14 serious potential consequences than an accident in a nuclear  
15 power plant, greater care is used.

16 The automobile industry, for instance, builds a  
17 prototype and tests it on a track before the prototype is  
18 permitted to be sold to the public, and even then as we well  
19 know many automobiles are returned to the factory because  
20 safety problems still remain.

21 This nuclear power plant is Westinghouse's prototype  
22 for the 893 megawatt electric plant. It has not been tried  
23 elsewhere. In fact, when it was originally designed its  
24 original design did not even include the critical portion of  
25 the emergency core cooling system upon which the Applicant

1 now relies, namely the use of accumulators. That bit of  
2 technology has been added since the time of the construction  
3 permit, because that was where Westinghouse had moved.

4 And once again since the time that that was  
5 installed the Atomic Energy Commission, as a result of its  
6 continuing review of emergency core cooling systems, has  
7 found it necessary to request the Applicants need an even  
8 more stringent standard for ECCS performance by the issuance  
9 of interim criteria, because they too were worried about the  
10 emergency core cooling system and the emerging technology.

11 And even following that interim acceptance criteria  
12 announcement, the Atomic Energy Commission felt that the  
13 matter was sufficiently open that it should hold a full and  
14 thorough public hearing, and even after that it was  
15 announced Westinghouse considered that the problem deserved  
16 further attention, and we had a piping modification in the  
17 emergency core cooling system.

18 CHAIRMAN JENSCH: May I interrupt?

19 MR. ROISMAN: Yes.

20 CHAIRMAN JENSCH: I wonder, aside from your  
21 statements in that most recent regard, this Board has been  
22 directed under the interim criteria and under the certification  
23 procedure which was undertaken, that if there is a finding  
24 that this plant meets those criteria, the duty of the Board  
25 is over, is it not?



1 MR. ROISMAN: The Board --

2 CHAIRMAN JENSCH: So that whether there is a review  
3 going on about those criteria is not persuasive in this  
4 proceeding, is it?

5 MR. ROISMAN: The Board's duties include both the  
6 duty to resolve that issue in favor of the Applicant or to  
7 conclude that there is a substantial question with respect  
8 to it and to certify.

9 We of course realize that the Board cannot, and  
10 we are not asking it to determine that the interim criteria  
11 are invalid. We are asking it to determine that there is  
12 a substantial question as to the validity of those criteria,  
13 and based upon that for the Board to certify to the Commission  
14 for its judgment the determination of whether the emergency  
15 core cooling system criteria are an adequate safety standard  
16 for purposes of licensing the plant, and it is not our  
17 understanding that if the Board concluded that there were  
18 a substantial question that it would go ahead and go through  
19 the difficult process of determining whether or not there was  
20 compliance with the interim criteria and issue the license,  
21 but rather that it would certify to the Commission the record  
22 dealing with the emergency core cooling system challenge and  
23 request guidance.

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1           Now at this late date we must say that we would  
2 not oppose the Board reaching its conclusions on all safety  
3 issues based upon the regulations as it interprets them,  
4 and then withholding a decision on the question of whether  
5 the plant should be permitted to operate. But simultaneously  
6 authorizing appeal of its initial determinations and  
7 certification of the question regarding emergency core cooling  
8 system, that it would not be a practical use of the Board's  
9 time to simply not now advise the Commission of its resolution  
10 of other issues in which no challenges are being made to  
11 regulations and certify, wait for the certification to come  
12 back and then decide something.

13           We think the entire matter could be set forward at  
14 one time.

15           In this regard with regard to the procedures to be  
16 utilized as the Board Chairman is aware the Regulatory Staff  
17 in the Vermont Yankee proceeding has taken the position,  
18 and we assume that is the position of the Staff, that with  
19 regard to challenges to the emergency core cooling system  
20 in that proceeding the Staff would support the proposition that  
21 what the Board should do is wait until the conclusion of the  
22 hearings at which time it would then ask the parties beginning  
23 with the Intervenor to indicate what portions of the emergency  
24 core cooling system national hearing record they choose to  
25 rely upon for purposes of their challenge, give the other

1 parties an opportunity to reference with detail the portions  
2 that they rely upon for their position that the regulations  
3 are valid, each party to state if there is any supplemental  
4 information which they desire to introduce on the subject,  
5 and the manner in which they would propose to introduce it,  
6 the time for doing so, the Board would then decide whether  
7 any additional data should be received, and once that had  
8 been received or once the Board had decided that no more  
9 should be received, the Board could decide that the question  
10 is certifiable and send the entire question, along with its  
11 decision on the other matters, up to the Appeals Board  
12 pursuant to the certification procedure.

13 CHAIRMAN JENSCH: May I interrupt?

14 MR. ROISMAN: Yes.

15 CHAIRMAN JENSCH: This is a matter on which I will  
16 just have to speak as a layman, but for a testing license is  
17 the core going to reach the condition where you have these  
18 high temperature problems? And I certainly thing they have  
19 been envisioned by the interim acceptance criteria for which  
20 certain provisions have been made. I mean what happens in  
21 a testing license that -- Maybe I should have talked with  
22 my colleagues here, but I'd like to have it on the record to  
23 get your views, is the emergency core cooling system going  
24 to be such a vital system that even the testing cannot be  
25 entertained? I say that, however, with some hesitation,

1 because as I recall Applicant's counsel stating he said,  
2 "of course, once we get up to fifty percent power we are going  
3 to be ready to stay there," and I just think we have to keep  
4 a caution in mind that what has been requested is a testing  
5 license up to fifty percent. I don't know whether it  
6 envisioned that you were going to shut down at fifty percent  
7 until the authority has been given for steady state power  
8 after that or not.

9 MR. TROSTEN: Mr. Chairman, what I meant by that  
10 remark was that if we had tested the plant up to fifty percent  
11 of full power the plant would then be available immediately  
12 upon the authorization by the Commission to provide power,  
13 which I believe is a very important advantage of the authoriza-  
14 tion of testing, that it provides an additional measure of  
15 assurance that the plant will be available and ready to produce  
16 power when it is needed to do so. That was the intent of  
17 my remarks.

18 CHAIRMAN JENSCH: Well, it may be ready, but of  
19 course we have not had the environmental review qualify for  
20 fifty percent. So the only thought I had in mind was that it  
21 might be repetitive. We told that Board that if we ever got  
22 to fifty percent power we wanted to stay right there, and  
23 we didn't want to turn a valve until we got this authority  
24 from the Commission to stay at steady state power, and I think  
25 it should be clear that the record is wholly inadequate for

1 a steady state power at fifty percent. Do you not agree?

2 MR. TROSTEN: Mr. Chairman, this is --

3 CHAIRMAN JENSCH: Will you try that yes or no?

4 MR. TROSTEN: I am afraid I can't quite answer it  
5 yes or no, Mr. Chairman. This is one of the reasons why we  
6 have filed a motion for reconsideration of the Board so that  
7 we can have the record complete and authority from the Board  
8 in order to give us the authority to proceed with operations.  
9 I am trying to be responsive to the questions.

10 CHAIRMAN JENSCH: The only thing is that we are at  
11 a difference, I guess, only in reference to whether you are  
12 talking about ninety percent or 100 percent. Will you proceed.  
13 Excuse me.

14 MR. ROISMAN: Yes.

15 CHAIRMAN JENSCH: Will you tell me what you think  
16 about this? Will the emergency core cooling system be such  
17 a vital component or system that it will be very vital and  
18 should be a kind of a condition for special consideration  
19 even in reference to the testing license?

20 MR. ROISMAN: Yes.

21 First let me say that testing itself is no  
22 different in terms of the way in which the reactor will be  
23 functioning at the particular power level than it would be  
24 if it were steady state operating at that level. So that  
25 there is nothing unique about testing. The only question

1 would be is the level of power fifty percent somehow or  
2 another so low that emergency core cooling system would not  
3 be required? The answer to that is contained first in an  
4 answer to a question that was asked of Witness Moore, which  
5 we identified in our proposed findings of fact, in which he  
6 indicated that there was sufficient heat in the fuel rods  
7 when they were at fifty percent of power if there should be  
8 a loss of coolant accident, and there were no water made up  
9 in the reactor, then the residual heat would take the fuel  
10 rods to the melting point.

11 So that in that context we contend, yes, emergency  
12 core cooling system is important.

13 Now it is true that at fifty percent power a  
14 substantially degraded ECCS might still be able to provide  
15 enough water to the system to keep the fuel rods from reaching  
16 the melting point, and maybe or maybe not enough water to  
17 assist them to keep the fuel rod temperatures below the  
18 interim criteria 2300 degree maximum temperature figure.

19 But at this point we don't have any evidence in the record to  
20 substantiate that.

21 In other words, the Applicant or the Staff have not  
22 made any attempt to assume various degrees of degradation  
23 of the ECCS and then to demonstrate that given those degrees  
24 of degradation at fifty percent they would be able to meet the  
25 interim criteria even though at that level of degradation they

1 couldn't meet the criteria fifty, sixty, seventy or eighty  
2 percent.

3 So it's sort of a zero sum game that we are faced  
4 with. Our position is that the ECCS has not been established  
5 that it will work effectively at any level, and the Applicant's  
6 position has been in support of it that it has been established  
7 that it will work effectively at the 100 percent level, and  
8 the record on the fifty percent question is not directed to  
9 that. Our position remains that as long as there is a  
10 residual heat capacity within those fuel rods to permit the  
11 rods to melt unless emergency water is brought in and so long  
12 as there is a risk of loss of coolant accident occurring,  
13 and both of those it is our contentions are correct, then  
14 the consideration of emergency core cooling system performance  
15 is relevant to a fifty percent testing license.

16 I I might point out that the record in the National  
17 Emergency Core Cooling System has indicated that at least  
18 one qualified expert who works with the Atomic Energy  
19 Commission or one of its contractors has indicated that a  
20 derating of nuclear power plants of perhaps as much as thirty  
21 percent might be required in order to bring the ECCS into  
22 compliance with what that gentleman thought would be an  
23 adequate acceptance criteria.  
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1 MR. ROISMAN: (Continuing) I point that out only  
2 to indicate that there is expert opinion in the field to  
3 suggest that as you come down from 100 per cent you may be  
4 able to reach a level at which the degraded ECCS could still  
5 function, but that that gentleman's statement was not -- to  
6 my knowledge there was no detail presented to indicate whether  
7 30 per cent would be enough or there would have to be 50 per  
8 cent or 55 per cent. Obviously those would be critical points  
9 in terms of the Board's judgment about the 50 per cent testing.

10 Finally, I think it is fair to say, as I have pointed  
11 out before, that the duration of testing and the time in which  
12 the reactor will be at 50 per cent or 40 per cent is less,  
13 and there will be some lesser risk. The record does not  
14 distinguish -- and this is the next point I would like to talk  
15 about. That is that the record does not distinguish on this  
16 or anything else how this Board can have some factual basis  
17 to distinguish between what is adequate and what is inadequate,  
18 what is safe and what is not safe, what is substantial and  
19 what is insubstantial, what is likely and what is unlikely.

20 The entire transcript -- this morning we heard it  
21 from Mr. Wiesemann and we have heard it from him before. We  
22 have heard it from other witnesses.

23 It is in the Staff's testimony under Mr. Brill.  
24 Qualitative words like adequate, likely, unlikely are through-  
25 out the record. Those words make critical differences in the



1 safety judgments.

2 As we pointed out, the kind of rupture of the  
3 reactor pressure vessel that we have considered has been  
4 treated as an improbable event by the Staff and the  
5 Applicant. Yet, they are unable to tell us how to draw the  
6 line between what is probable and what is improbable. We  
7 know the practical consequence, though. If something is  
8 improbable, there is no design requirement to cope with it.  
9 If it is probable, there is a redundant design requirement.  
10 There is not even an attempt to require of the Applicant in  
11 its design and it gradually moved from redundancy to a  
12 single program, to a possible answer to a problem, and finally  
13 to an extremely unlikely event and extremely unlikely  
14 solution.

15 A hard and fast line is drawn for practical pur-  
16 poses but no hard and fast line has been drawn to help us  
17 understand why these certain events fall into the improbable  
18 category and other events fall into the probable category.  
19 I think that, too, is a product of the emergent industry.

20 The nuclear industry is young as industries go.  
21 In the peaceful uses, it is a scant twenty-five years old.  
22 They have done very well to advance this far, but in our  
23 opinion they have gone too far when they have asked the  
24 citizens of this area to withstand the risk for forty years  
25 of a nuclear power plant at this point is one of a kind and

1 untried, and which depends upon the proper operation of  
2 systems which are still under study by the Atomic Energy  
3 Commission, which are still under study even by the vendor  
4 and the applicant, and whose safety has not been established.

5 We do not contend that these must be a guarantee.  
6 We simply contend that there must be a margin of safety that  
7 is substantially higher than the one that is present here.

8 CHAIRMAN JENSCH: Excuse me for interrupting.  
9 You say forty years. We don't have that, do we, for this  
10 extent?

11 MR. ROISMAN: That's right. I'm sorry. On the  
12 50 per cent testing.

13 CHAIRMAN JENSCH: What is the time limit that you  
14 propose? When you get to 50 per cent what are you going to  
15 do?

16 MR. TROSTEN: Mr. Chairman, our intention is to  
17 complete the schedule of testing that is outlined in the  
18 final safety analysis report.

19 CHAIRMAN JENSCH: When you get to 50 per cent, and  
20 you complete the tests for 50 per cent, what are you going  
21 to do as to operational level?

22 MR. TROSTEN: Mr. Chairman, our thought is to test,  
23 and we cannot operate for producing power if it is not for  
24 testing purposes, Mr. Chairman.

25 CHAIRMAN JENSCH: In one sense you are always testing.

1 As I understand, each plant is kind of related to the others  
2 in emergency technology. At what level are you proposing to  
3 be at after you get to 50 per cent of power?

4 MR. TROSTEN: The answer is, we will shut down,  
5 Mr. Chairman.

6 CHAIRMAN JENSCH: Very well. Thank you. I had that  
7 in mind.

8 MR. ROISMAN: Yes, that's correct, and I should have  
9 been implicit in that we are talking here about the ninety-  
10 eight-day operation of the plant during the testing period.

11 As I pointed out before, it is important to recognize  
12 the testing period for an untried, that is perhaps the most  
13 dangerous period of all. If the ECCS is called upon and it  
14 doesn't work, it will not do much good to the people of New  
15 York to be told that, well, that was just one of the bugs we  
16 hoped to work out during the testing period. I think that's  
17 very important.

18 This plant has not been tested nor has this particular  
19 combination of components previously been tested.

20 CHAIRMAN JENSCH: Excuse me. I think in the course  
21 of this proceeding -- I have just forgotten what the response  
22 was -- we did have some inquiry as to what the experimental  
23 program was that the Commission or the Commission in connection  
24 with other units was undertaking. We did quite a report as to  
25 what the program was, but I don't know how many of those

1 programs are in effect. I wonder if the Commission funds  
2 have been available to permit it to carry out all that  
3 program that was sent out for experimental work, or whether  
4 this facility is a substitute for the intended experimental  
5 work.

6 Do you recall what the record shows in that regard?

7 MR. ROISMAN: I only got the Staff -- well, first  
8 the document, WASH 1146, which describes the program in  
9 general, is in evidence, and I believe is Citizen's Committee  
10 for the Protection of the Environment V, but I would have to  
11 check that to make sure; that the Staff did, after several  
12 series of questions by the Board, produce an extensive  
13 computer print-out which purported to describe the state of  
14 the experimental programs as of, I think the latest date was  
15 February of 1971. The computer print-out was dated June,  
16 1971, but because the computer was lagging a little behind  
17 in terms of actual works, it covered works through something  
18 like February of '71.

19 It stated the status of experimental programs, which  
20 ones were still continuing, which one had been discontinued,  
21 which one had been completed, and which one had not been  
22 completed.

23 CHAIRMAN JENSCH: What did they show about the  
24 emergency core cooling system?

25 MR. ROISMAN: As I remember, they showed an extensive

1 amount of research work still to be done, and in addition, in  
2 the documents which we have sought official notice, IN1382,  
3 I believe, the then Idaho Nuclear Corporation, had a chart  
4 which showed the status of work on emergency core cooling  
5 system itself, a type of flow chart which purported to  
6 demonstrate matters which had been concluded, matters which  
7 were substantially completed, and matters on which a little  
8 bit of work had been done, and matters on which nothing had  
9 been done in terms of resolving ECCS concerns.

10 My recollection of that chart is that only a very,  
11 very small portion of ECCS was considered to have been  
12 resolved, and a great proportion of it was in the category  
13 of only a little bit of work or work in progress.

14 As far as we know, there has been no substantial  
15 work completed since then. Again, this subject is discussed  
16 in detail and will be included in those portions of the  
17 transcript of the ECCS National Hearing which we wish to  
18 reference for the Board's purposes depending upon the Board's  
19 resolution of the whole outstanding question on evidence on  
20 the ECCS matter.

21 While the ECCS is clearly the most important of the  
22 issues that we have raised, and while an important adjunct  
23 to it is this question, I'm trying to put some bounds on the  
24 use of terms like "likely" and "unlikely" and "probable" and  
25 "improbable", I would like to merely briefly mention important

1 issues without denigrating in any way from all the issues  
2 identified in our proposed findings of fact and proposed  
3 conclusions of law.

4 We think the question of the fire repair is an  
5 important question which has yet adequately been resolved.  
6 We have indicated to the Board in a letter, I believe, of  
7 January 19, 1972, that we believe the applicant was not  
8 providing in this record a sufficient amount of information  
9 to confirm the testing and repair work that was done after  
10 we had our hearing on fire, nor was the staff providing us  
11 with any reports.

12 CHAIRMAN JENSCH: Go on.  
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1 MR. ROISMAN: At present the status of the record  
2 is that Mr. Trosten's biweekly or monthly letters have been  
3 coming to the Board merely stating that the status of the  
4 repair is such, and we have completed, period. We don't know  
5 if any problems they encountered which differed from their  
6 originally predicted schedule on that, nor what damage the  
7 fire had done which they had not thought had occurred, nor have  
8 we seen any sign-off on the question of the fire.

9 We think the record is incomplete on that and that  
10 the plant would not be prepared for testing or operating license  
11 until that record was completed.

12 We think the plant security is still very much up  
13 in the air. We received a lot of general assurances that at  
14 some time in the future deficiencies which we have pointed  
15 out with regard to security will be resolved, but we have not  
16 received any evidence that those have been resolved now. We  
17 think the more we hear evidence from Mr. Schwartz and other  
18 representatives of Consolidated Edison regarding their belief  
19 about the need for power, as erroneous as that belief may be,  
20 the more we are persuaded that even during the testing period  
21 Applicant and the operators of Applicant's reactor facility  
22 are going to be influenced by the belief that -- I think  
23 Mr. Trosten invited World Trade itself. It hinges on the  
24 operation of Indian Point No. 2, and is certain to influence  
25 those split second judgments that are needed to make sure that

1 reactors, when they do operate, are operated safely. We  
2 are frankly frightened at the prospect that the Consolidated  
3 Edison Company as committed and honestly committed as it  
4 is to this question of power, also simultaneously be committed  
5 to the more important question of safety, and that even if  
6 all other things were all right with the reactor, we would  
7 feel that the reactor should be owned and operated by some  
8 party who is not so deeply involved and committed in the  
9 question of the operation of the reactor for the purpose of  
10 supplying power.

11 Finally, we have raised several legal issues that  
12 I think deserve mentioning here, that the Board should resolve.  
13 One is the question of the adequacy of the Staff review in  
14 general. We feel that the Staff review has not comported with  
15 the requirements either with the Office of Communication  
16 of the United Church of Christ cases to which the Board  
17 referred yesterday, nor to the more recent decisions of  
18 Green County Planning Commission versus The Federal Power  
19 Commission, both of which indicate that the Staff has an  
20 affirmative duty to bring forward all of the pertinent data  
21 to a proceeding, and to see to it that it is on the record,  
22 and that the Staff, as an advocate, is an advocate only in a  
23 very secondary function and not in a primary function in the  
24 proceeding.

25 The Staff believes that it is an advocate in the



1 proceeding and has chosen to produce the data which it  
2 believes supports that position. For another party that  
3 would presumably be perfectly permissible. It is, in our  
4 opinion, impermissible for the Staff.

5 On the question of the environmental review per se,  
6 we believe that because of the environmental review involves  
7 a balancing of radiological risk against benefit, that it is  
8 pertinent to ask the questions to which we have not received  
9 adequate answers. As to how it is possible for the Staff  
10 to do its balancing in a statement of considerations when  
11 it assumes a measure of risk from radioactive accidents below  
12 that assumed for purposes of the safety review, as though  
13 for some reason or another when we are weighing it against  
14 environmental considerations, we use a different scale and  
15 measure it against some other kind of yardstick.

16 In addition, that the consideration of the scope  
17 of benefits in the Staff's review is wholly inadequate. The  
18 benefits in that review are related to fifty percent steady  
19 state operation. As the Board has pointed out, this is  
20 a license for fifty percent testing. That would not be a  
21 problem if it were not that the Staff had the responsibility  
22 to do a balance. We do not understand how it is possible to  
23 balance factors if both sides of the scale were loaded with  
24 a lot of irrelevant material. It may be that if the factors  
25 wholly related to fifty percent testing were balanced, that

1 the radiological risks, the environmental harms, the benefits  
2 to the public from the operation of the plant would tip the  
3 scale in favor of the license even on that ground.

4 While we do not challenge any of the environmental  
5 issues substantively, we do believe that the balance has not  
6 been properly conducted and that the Staff review at this  
7 point is grossly inadequate.

8 Finally on the question of benefits itself,  
9 Applicant's counsel has implied that in looking at the benefits  
10 of fifty percent testing, we should look at the benefits of  
11 fifty percent or higher steady state operation. Our position  
12 has been that that is perfectly permissible so long as looking  
13 at the adverse consequences of fifty percent testing we look  
14 at the adverse consequences of fifty percent power levels and  
15 higher. Therefore, if the Staff and the Applicant's position  
16 is to remain as it is, and that is that we should consider  
17 what we will be doing for the City of New York in the summer  
18 of 1973 by having this plant tested this summer, we should  
19 also look at what we may be doing to the City of New York in  
20 the summer of 1973 by having this plant operating with  
21 inadequate safety controls. Both must be co-extensive.

22 We are willing to see it limited to fifty percent  
23 testing, and that the consequences of fifty percent testing  
24 will be considered, so long as the benefits of fifty percent  
25 testing is looked at and not what the future may hold if the  
testing proves out, should be considered.

1 CHAIRMAN JENSCH: May I interrupt?

2 MR. ROISMAN: Yes.

3 CHAIRMAN JENSCH: Is the need of power a sharp  
4 issue in this testing license? They are not going to produce  
5 any power, are they?

6 MR. ROISMAN: I would have said that that is  
7 absolutely correct, but their testimony and the Staff's  
8 statement of environmental consideration is replete with  
9 evidence on the 50 per cent testing license dealing with the  
10 power that this plant generates, some of which, I might add,  
11 related to the summer of 1972, which seems a little out of  
12 date. We don't raise the question it is out of date since  
13 we think that even if it related to the fall of 1972, it  
14 wouldn't be relevant because this is not a power generating  
15 request. It is a testing request.

16 CHAIRMAN JENSCH: Is there any power to be produced  
17 under this proposal for testing?

18 MR. ROISMAN: I believe that it produces a small  
19 amount at power level of -- I think Mr. Cahill said above  
20 35 per cent they have sufficient steam for the turbines to  
21 spin, and therefore whenever they are spinning I presume  
22 electricity can be generated.

23 MR. TROSTEN: This is correct, Mr. Chairman.

24 CHAIRMAN JENSCH: What is your contemplation of the  
25 amount of number of kilowatts you are going to push out on the

1 MR. CAHILL: It is roughly half of the plant  
2 electrical rating at 50 per cent power. That will be kilo-  
3 watts that is generated within the plant and pushed into the  
4 system. The duration of that, the total kilowatt hours will  
5 only be sufficient for the testing.

6 CHAIRMAN JENSCH: What I have in mind is, if you  
7 are going to generate power at 50 per cent and you are always  
8 testing, you are always testing and you get 50 per cent  
9 delivery of electricity, and you won't have to have any  
10 further environmental or anything else for a while.

11 MR. TROSTEN: Mr. Chairman, we have a fine testing  
12 program set forth in the FSAR. That is the program that we  
13 desire and will be carrying out.

14 CHAIRMAN JENSCH: I understand that. Supposing the  
15 tests -- you will be still be able to generate a lot of power,  
16 but the doorhandles aren't working, or something. If some-  
17 thing is not going to detract from the production of  
18 electricity, but you are going to test and the door won't  
19 open, what will you do? I just don't understand what the limit  
20 is on your testing program because you can still generate  
21 electricity all the time, can't you.

22 MR. TROSTEN: Mr. Chairman, the only thing I can  
23 say about that, in an effort to be fully responsive to your  
24 question, is that we have a program which we need to carry  
25 out in order to find out whether the plant can operate

1 properly. We want to carry out the testing program that  
2 is defined in the FSAR. We don't want to carry out un-  
3 necessary tests or door-changing tests. We want to carry  
4 out those tests that are contemplated and necessary in order  
5 to prove out the plant.

6 CHAIRMAN JENSECH: What kind of a time schedule would  
7 you recommend to be included in the testing license so we  
8 don't get into this door-swinging test as a part of it, too?

9 MR. TROSTEN: Mr. Chairman, the time schedule that  
10 I believe would be appropriate to include in the testing  
11 license would be a time schedule -- if there were to be a  
12 time schedule similar to the fuel loading schedule, it would  
13 be the six-month time limit which has been, I believe, as a  
14 matter of regulatory practice, imposed on these particular  
15 licenses. That, I believe, is consistent with what has been  
16 done in other cases.

17 CHAIRMAN JENSECH: If you pushed out 50 per cent of  
18 your generating capacity for six months, you have a pretty  
19 sizeable delivery, I would infer. Who is going to determine  
20 when your tests are completed, to stop your testing? Your  
21 testing could easily operate as a steady state power operation.

22 MR. TROSTEN: Mr. Chairman, the program is determined  
23 by the final safety analysis report. The Compliance Division  
24 will be monitoring the completion of this program. The  
25 program will be terminated by the Applicant, as I said before,

1 when the program has been complete.

2 CHAIRMAN JENSCH: I just wonder if you need to have  
3 50 per cent of power to fully test your facility. I think  
4 some suggestion that 20 per cent might do it or 10 per cent  
5 might do it should be considered.

6 MR. TROSTEN: Mr. Cahill previously testified about  
7 this. Testing at 20 per cent would not adequately test the  
8 facility. It would not spin the turbines, as I recall.

9 CHAIRMAN JENSCH: 20 per cent won't turn your  
10 turbines?

11 MR. TROSTEN: Mr. Cahill will answer your question.

12 CHAIRMAN JENSCH: Thank you.

13 MR. ROISMAN: Mr. Chairman, I'm going to sit down  
14 but I would still like to conclude.

15 CHAIRMAN JENSCH: Yes.

16 MR. CAHILL: 20 per cent would spin the turbines.

17 It takes about the order of about 10 per cent of the reactor  
18 power to just get enough steam to bring the turbine up to  
19 speed.

20 In previous testimony we indicated that power levels  
21 beyond 20 per cent, up to 50 per cent, are needed to really  
22 adequately test the steam plant because the flows of steam  
23 and water in that plant don't get up to significant levels  
24 that provide test and performance indication to that level.

25 Our program for testing is outlined in the FSAR

1 and in the testimony to accomplish certain things. At the  
2 level just beyond critical and at 10 per cent and 20 per cent  
3 and 35 per cent and 50 per cent there is certain test infor-  
4 mation that is to be obtained there. Nuclear parameters,  
5 performance tests, equipment and so on that are to be  
6 accomplished. That's the purpose of the test.

7 I resent an implication that we are asking for a  
8 testing license to just deliberately continue operating the  
9 plant. We want to, of course, continue with the operation  
10 of the plant. That requires additional authority. We are  
11 asking to complete our testing program to 50 per cent. I  
12 have indicated that this takes ideally something like  
13 forty-nine days. It could take twice that long and still be  
14 what I would call not an abnormal kind of startup. It could  
15 take longer. What we are asking for is the authority to  
16 accomplish the test, to get the information and the mile-  
17 stones passed and the time, whatever that time is, to  
18 accomplish that. We are not asking, in this motion, to go  
19 up to 50 per cent and accomplish those tests and then keep  
20 running. We will ask for that and have it.

21 MR. TROSTEN: We have asked for it.

22 MR. CAHILL: We will do that in a separate motion.

23 CHAIRMAN JENSCH: What would you suggest to avoid  
24 the implication that some people may wish to extend that we  
25 do not by our inquiry -- but in fairness to yourself, what

1 would you suggest as to a time limit or other control limits  
2 so that it would not appear to the public that there is any  
3 possible distortion of the operating authority of a testing  
4 license if one were to be issued?

5 For instance, you have all these dials whirling  
6 and you want to set it at 92, and it comes up to 91.8 per  
7 cent and drops back and then it comes up and you want to be  
8 sure it is up to 92 per cent. How are you going to be sure  
9 that the test is finally done?

10 For all practical purposes, 91.8 might be enough  
11 on the dial for all practical testing purposes. Who is going  
12 to say when you actually get enough done? Whose judgment is  
13 it so that -- I said in fairness to yourself -- so it doesn't  
14 appear that you would misabuse authority? I know you don't  
15 want to do that. It is no implication on my part that you  
16 are going to abuse anything. But to be sure the public under-  
17 stands that there is no abuse or likely abuse or intended  
18 abuse or possible availability of abuse, we are asking for  
19 your views.

20 MR. TROSTEN: As far as the monitoring of this,  
21 Mr. Chairman, this is like the monitoring of any other  
22 license condition. The applicant is absolutely committed to  
23 performing these tests that are outlined in the final safety  
24 analysis report and our testimony for the purposes indicated.  
25 It is like any other license condition and any other provision



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1 in the technical agencies. This is monitored by the Division  
2 of Compliance.  
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1 CHAIRMAN JENSCH: I understand that. As I  
2 understand it, they are a reporting authority to the Division  
3 of Regulatory Activities, and they see the dial come up  
4 to 91.8, and they write that it is 91.8. Well, write us  
5 another letter. The dial turns again and it goes up to 91.8.  
6 They do nothing but report the matter.

7 What guidance would you want the regulatory group  
8 to have so that no one will misunderstand what you are doing  
9 and no one will feel that there is any possible abuse with the  
10 authority you are seeking?

11 MR. TROSTEN: We would hope that no one would think  
12 there is an abuse of the authority when the Applicant has  
13 committed itself to perform these tests that are outlined in  
14 the safety analysis report where we have testimony in this  
15 hearing that has been given under oath by an officer of the  
16 company as to what its intention is. I would really believe,  
17 Mr. Chairman, that that ought to be sufficient, given the  
18 monitoring of this where it is not simply relying on the word  
19 of the Applicant, but also with monitoring by the Regulatory  
20 Staff of the Atomic Energy Commission.

21 CHAIRMAN JENSCH: Let me give you an illustration.  
22 Supposing your control rod situation again.

23 MR. TROSTEN: Yes.

24 CHAIRMAN JENSCH: You test those periodically under  
25 any kind of operation. So you test your rods. In the first

1 couple of months they are working fine. But you are never  
2 really done testing those.

3 Are there other types of tests of the same kind?  
4 You say, yes, we have to keep running tests. So in one sense  
5 you are never finished testing some component because you  
6 always test them for any kind of operation.

7 MR. TROSTEN: I would sincerely hope that the  
8 interchange we are having would not restrict the Applicant  
9 from conducting those tests, which are necessary to the  
10 proving out of the plant. I really believe that it is  
11 important that we be authorized to conduct appropriate tests  
12 and that the equipment be tested and proved out.

13 CHAIRMAN JENSCH: You will be testing control rods.  
14 If you have a license for 400 years, you always will be  
15 saying you are testing the control rods. Whatever the  
16 section was, or what has been eliminated by this amendment  
17 to the Act, that is. This used to be a testing license to  
18 verify something of experimental research. I think that was  
19 the way this thing started. We have an amendment to the law  
20 that got that one out.

21 My point is that there isn't any end to testing.  
22 You need it. If you have a fifty percent testing license,  
23 it has parts of operations that always have to be tested,  
24 or you will never terminate, in one sense, your testing  
25 authority, would you?

1 MR. TROSTEN: I think the testing authority would  
2 be terminated, Mr. Chairman.

3 CHAIRMAN JENSCH: Tell us how.

4 MR. TROSTEN: How the testing authority would be  
5 terminated?

6 CHAIRMAN JENSCH: Yes.

7 MR. TROSTEN: When we have completed the program  
8 which is outlined, I think, with considerable specificity in  
9 the final safety analysis report. When those tests which  
10 are set forth in the final safety analysis report have been  
11 completed, it will terminate.

12 CHAIRMAN JENSCH: You don't have the control rod  
13 test set up for testing?

14 MR. CAHILL: Yes, there are control rod tests.  
15 As you say, there are checks or tests that are to be made on  
16 control rods all the time as part of normal routine operation.  
17 If there is a shutdown for some reason and you start up, or  
18 if the time period has elapsed. There are routine tests that  
19 are made even in normal operation.

20 The test program which is the subject of our  
21 discussion now, is defined better than that, Mr. Jensch.  
22 It fundamentally involves testing at different power levels  
23 for certain periods of operating time, not necessarily  
24 calendar time, sir. But so many days or so many hours run  
25 at fifty percent power during which parameters and performance

1 characteristics are determined.

2           On the completion of those determinations, that  
3 program is over. Now, it is true that at twenty-one percent  
4 or whatever a test level is, thirty-five percent, which may  
5 call for X hours of operation, that the generator may trip  
6 or some other malfunction may occur which interrupts the test,  
7 and we would have to make that repair and then go on to  
8 complete the test and perhaps even repeat it for sequence.

9 This is why calendar time is indeterminate.

10           What we have to accomplish, the bits of information  
11 and the steps, is well enough defined in addition to taking  
12 our sincerity into consideration. It is well enough defined  
13 that Compliance can certainly detect any deviation from the  
14 license.

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1 CHAIRMAN JENSCH: Well, what I had in mind  
2 particularly was in reference to emergency core cooling  
3 system, as I understand the time of operation of a facility  
4 affects the accumulation of radioactive fission products in  
5 the core, and if you run up and down a little and it extends,  
6 as you say, over an indeterminate period of time for many,  
7 many days, many, many months, perhaps, you are building up  
8 more of that fission product accumulation as you utilize in  
9 the core whatever power you have, which is then related to  
10 perhaps the necessity of performance of the emergency core  
11 cooling system. That's why I wondered what can be a cutoff?  
12 If you can provide a cutoff. If you cannot, we will just have  
13 to try to consider it without benefit of such suggestions.  
14 But it seems to me that --

15 MR. TROSTEN: Mr. Chairman, I really don't believe  
16 that a time cutoff can be --

17 CHAIRMAN JENSCH: That's what Mr. Cahill just said,  
18 yes.

19 MR. CAHILL: The amount of energy generated,  
20 therefore the amount of fission products, because of the nature  
21 of the tests and the limited duration of them, will be small.  
22 I don't see as practical -- I am trying to put myself in the  
23 place of the Board and the AEC as well as in the place of  
24 Con Edison -- that there would be a practical way of putting  
25 a time limit on it.

1 CHAIRMAN JENSCH: Very well. You did have some  
2 further statements?

3 MR. ROISMAN: Yes.

4 First on this matter we have indicated in our  
5 proposed findings and consider it pertinent for fifty percent  
6 testing that we believe the Applicant's concern with the need  
7 for power would override their judgment in an emergency  
8 situation. We do not mean to imply that we believe, however,  
9 that the Applicant would, if it were given a fifty percent  
10 testing license, intentionally abuse that license in such a  
11 way that it would try to run the plant. And while we  
12 understand the Board's concern with members generally of  
13 the public who would certainly like to say that as far as the  
14 Citizens' Committee for the Protection of the Environment is  
15 concerned, we do not believe that the Applicant will  
16 intentionally attempt to abuse the fifty percent testing  
17 license.

18 CHAIRMAN JENSCH: The Board doesn't feel that way  
19 either.

20 MR. ROISMAN: No. I understood it was with concern  
21 of the public, but as a representative of at least a segment  
22 of the public, I wanted to make it clear on the record that  
23 our disagreements with the Applicant in terms of how well  
24 they would respond to an emergency does not extend to  
25 intentional carefully worked out duplicity on their part.

1 We do not believe that that would be the case.

2 CHAIRMAN JENSCH: The Board does not believe so  
3 either.

4 MR. ROISMAN: With regard to the Board's suggestion  
5 though, I think Mr. Trosten has said, well, perhaps a  
6 six-month term on the fifty percent testing license might be  
7 appropriate at an earlier time, and we would not have any  
8 objection, assuming the license is issued at all, to it  
9 being considered in a six-month term, and would suggest to the  
10 Board that at least an outer bound on fission products could  
11 be set by assuming that during the six-month period the plant  
12 operated at the full fifty percent level during every day of  
13 the six months.

14 Now that would be on the assumption that the plant  
15 immediately or virtually immediately got to fifty percent and  
16 then every test that was being run at fifty percent caused  
17 them to have to run it again, and that they had to continue  
18 at fifty percent because the tests kept failing. That may  
19 be an outer boundary that may be legitimately falls into the  
20 problem. But if the Board is looking for way of getting a  
21 measurement on fission products, that would certainly be one  
22 safe, extremely conservative position that they could take,  
23 assuming the plant operated for the term of the license at  
24 the highest power level authorized.

25 In any event, I merely throw that out as a possible



1 suggestion.

2 I merely wanted to say in conclusion, Mr. Chairman,  
3 that our position with regard to fifty percent testing, and  
4 our position with regard to the ultimate issuance of the  
5 license are virtually the same insofar as they relate to  
6 the fundamental question: is the public ready for a base  
7 load nuclear power plant of this size, and is the state of  
8 technology such that it is prudent and wise and that there  
9 is reasonable assurance that it can be operated even during  
10 the testing period with a sufficient degree of assurance that  
11 this plant can obtain a license within the confines of the  
12 Atomic Energy Act.

13 We think it is not and that Congress meant when it  
14 passed that law that until that time was reached that the  
15 Applicants should not be permitted to operate their nuclear  
16 power plants, but that they should continue to work on them.

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1 Indian Point No. 2 has a fine promise, perhaps,  
2 for the future. If it were located elsewhere we might not  
3 even oppose it being run for testing purposes only.  
4 Unfortunately, it's been chosen to be located in this place,  
5 and we believe that it is wrong to test it here at this  
6 time under these conditions and we urge the Board to deny the  
7 fifty percent testing license.

8 CHAIRMAN JENSCH: Excuse me. May I understand your  
9 position? I have great difficulty with that position. The  
10 Atomic Energy Act has authorized the Atomic Energy Commission  
11 to issue licenses for nuclear power plants, and the  
12 regulations which have been issued by the Atomic Energy  
13 Commission have been submitted to certainly one if not more  
14 committees of Congress.

15 The Joint Committee on Atomic Energy, I might say,  
16 I feel from all the submittals, that the Commission, as  
17 presented to the Commission, the Joint Committee is fully  
18 familiar with the regulations issued by the Commission.

19 Now they have prescribed in their regulations that  
20 if there is reasonable assurance that the nuclear facility  
21 can be constructed and operated without undue risk to the health  
22 and safety of the public, which admittedly involves a judgment  
23 determination to a large degree, that licenses may issue.

24 Now at no time has the Congress, as far as I am  
25 advised, indicated that that standard was not proper, and an

1 administrative agency, and certainly this Board is only one  
2 part of that agency, must conform to those regulations and  
3 the direction by Congress.

4 Now I think the language has been used in many of  
5 these cases which I think is a little unfortunate, that the  
6 Congress has mandated the issuances of licenses. I don't  
7 think they have. I think Congress has said, "Here is an  
8 administrative agency which, according to the legislation,  
9 authorizes the Commission to prescribe the regulations." The  
10 Commission has done that. It's acting within that framework  
11 as to what is and what shall constitute reasonable assurance  
12 for the operation of the plant.

13 I don't think we necessarily get into these overall  
14 nationwide programs, but we necessarily have to focus on  
15 this one facility here that's been constructed at Indian Point,  
16 and it's had two reviews with a construction permit hearing,  
17 so far in this proceeding, and these matters of fire repair  
18 and plant security are important.

19 As you know, the regulations provide that some of  
20 these, I don't say peripheral items, but there are certain  
21 items that are left for determination as to the adequacy of  
22 completion of established programs, are left to the Compliance  
23 Section reporting to the Regulatory Division of the Commission,  
24 which in turn reports to the Commission. Your concern then,  
25 I infer, is primarily on the emergency core cooling system and

1 the general feeling that safety has not been established for  
2 nuclear power plants, but for this facility your concern is  
3 primarily with the emergency core cooling system, is that  
4 correct?

5 MR. ROISMAN: Yes, Mr. Chairman.

6 CHAIRMAN JENSCH: Especially for this fifty percent  
7 of testing.

8 MR. ROISMAN: Yes. Focusing on the fifty percent  
9 of testing.

10 To begin with, with the exception of a challenge to  
11 the interim acceptance criteria we are not challenging the  
12 Commission's regulations. We are accepting them as written.  
13 In some other proceeding it might be that we would choose to  
14 challenge them, but here we accept those regulations. We  
15 contend that the Applicant has not proven that it meets those  
16 standards. Now we have said that the weakness in the  
17 presentation of evidence as we see it as a general matter is  
18 the consistent use of these probable-improbable, likely-  
19 unlikely terms, without putting any meat on them. The  
20 regulations don't purport to define those words either. The  
21 regulations leave it to the interpretation given the specific  
22 facts, and we think that is a perfectly legitimate, a  
23 legitimate delgation from the Commission down to the Board.

24 The Board must still make the determination within  
25 the context of the regulations, as I believe Mr. Briggs has

1 pointed out very early in this proceeding, talking about the  
2 use of the term probable and improbable, which has most  
3 frequently been discussed, and that is in the design criteria  
4 the Commission indicated that the loss of coolant accident  
5 shall include, and I quote, "breaks in the reactor coolant  
6 pressure boundary up to and including a break equivalent in  
7 size to the double-ended rupture of the largest pipe of the  
8 reactor coolant system."

9 And that language appropriately pointed out by  
10 Mr. Briggs is properly interpreted to mean that the vessel  
11 itself could rupture, up to the size of the largest break of  
12 the largest pipe, and that that footnote then indicates,  
13 "Further details relating to the type, size and orientation  
14 of postulated breaks and specific components of the reactor  
15 cooling pressure boundary are under development."

16 The Commission acting as a regulatory body has not  
17 issued a regulation making this one any more specific. The  
18 Staff has interpreted it itself that the postulated worst  
19 accident is a rupture of the largest pipe in the system. That  
20 Staff judgment, however, has neither the approval of the  
21 Commission nor any implied approval of Congress, of course,  
22 and it's subject to complete review here the same as if the  
23 Applicant had made the assertion that it believed the worst  
24 possible break that could happen is the door handle break,  
25 and all other breaks are improbable.

1           And we are arguing within the context of these  
2 regulations that the burden of proof has not been met, and  
3 I did not mean to suggest by putting that challenge in the  
4 context of the broader issues in which it belongs that we  
5 are asking the Board to go beyond the bounds of the regulations  
6 or the bounds of the statute or in any way to get itself  
7 embroiled in what are properly matters for the Commission or  
8 the Congress to deal with.

9           When it comes down to this, this plant has not  
10 proven to be adequate. We say this plant has not been  
11 developed that it is designed to cope with the accidents that  
12 are most probable and that will occur over the life of the  
13 forty years of the plant, or the likely life, because there  
14 is not sufficient proof to define how we distinguish between  
15 the likely and unlikely.

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1           And I should mention you said the main concern at  
2 the 50 per cent level is with the ECCS. We are equally  
3 concerned with the problems of reactor vessel integrity, the  
4 transients to which the vessel is subjected as the result of  
5 frequent hot and cold shutdowns which take place not only  
6 during normal testing, but frequently reactor turbine trips  
7 take place during testing, more frequently than they do  
8 during normal operation, all other kinds of transients which  
9 can cause problems with the vessel.

10           Now it's true that vessel fatigue associated with  
11 longlife operation is not really a problem if you are talking  
12 about even as much as six months' worth of operation, but the  
13 integrity of that vessel, its fundamental integrity, integrity  
14 is still an appropriate issue in the proceeding, and pertinent  
15 to the question of 50 per cent.

16           Finally, the Board implied that the Joint Committee  
17 on Atomic Energy has been consistently supporting the  
18 Commission's determination of safety, and I think it's  
19 appropriate to say that "The times, they are changing".

20           In Senate Committee Report Number 92-787, dated May  
21 9, 1972, and dealing with the passage of the bill S-3543  
22 authorizing the issuance of interim operating licenses for  
23 nuclear power plants, Senator Baker said in his supplemental,  
24 not dissenting view, but in his supplement views regarding a  
25 proposal that he had made that was subsequently rejected by

1 the Committee, "The search on nuclear reactor safety is  
2 presently being conducted with the Commission's Division of  
3 Reactor Development and Technology in the Office of the  
4 General Manager.

5           Although there have been recently some public  
6 allegations that the Commission's Safety Research Program  
7 is defective, I am not sufficiently informed on the subject  
8 to question or confirm the adequacy of that program. The  
9 Joint Committee plans to hold hearings on safety later this  
10 year. My amendment was based very simply on the traditional  
11 proposition that those charged with the promotion and develop-  
12 ment of any given objective should not simultaneously be  
13 charged with the regulation of that objective and assurance  
14 of its safety."

15           Now I point this out to indicate that at this time  
16 one member of the Joint Committee on Atomic Energy is at  
17 least sufficiently concerned about the state of safety that  
18 he wants to look further into it and has gone to the point  
19 of proposing an amendment to the Atomic Energy Act which  
20 would have separated the Division of Reactor Development  
21 and Technology Research Program out from under the General  
22 Manager's office and into a separate branch.

23           I think it's fair to say that the times they are  
24 changing and that Congress is evoking for the first time a  
25 substantial concern about the safety of nuclear plants.



1           The usual proposition that Congressional reenactment  
2 of statutes in the face of a regulatory program year after year  
3 indicates some approval of that program may not be true in the  
4 case of the Joint Committee, which itself is now beginning to  
5 wonder whether it has learned all the facts about nuclear  
6 safety. That, of course, is not an issue in this proceeding,  
7 but I bring it up to merely indicate that I don't think  
8 Congress is stamping any O.K. sign either on Indian Point  
9 Number 2, or on Consolidated Edison and Westinghouse or on  
10 their nuclear program in general.

11           They, too, have delegated to the Commission, which  
12 has delegated to this Board, the question of deciding should  
13 the largest plant of its size in the country be authorized to  
14 operate at 50 per cent of testing within twenty-four miles  
15 of the largest city in the country?

16           We contend that on this record there is not enough  
17 evidence to say that that risk should be taken. The plant  
18 is not safe to operate.

19           CHAIRMAN JENSCH: I think you are stating it in one  
20 form, but the real issue is is there reasonable assurance in  
21 this record that the plant should be constructed and operated  
22 without undue risk to health and safety of the public?

23           MR. ROISHAN: And our answer is no, in case there  
24 was any question about that.

25           CHAIRMAN JENSCH: Have you a few more minutes in

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your time?

MR. TROSTEN: I have a few more minutes of rebuttal,  
Mr. Chairman.

CHAIRMAN JENSCH: Proceed.

1 MR. TROSTEN: Mr. Chairman, there are several  
2 disturbing inconsistencies which run through the argument of  
3 counsel for the Intervenor. On the one hand, he asserts  
4 that there is not adequate information about the safety of the  
5 plant, that we do not have sufficient information to draw a  
6 hard and fast line. What Mr. Roisman is saying on the one  
7 hand is that somehow there must be some type of a mathematical  
8 analysis or some hard and fast line that must be drawn with  
9 regard to what is safe and what is not safe, and yet neither  
10 nor anyone else can really suggest that there is in reality  
11 such a hard and fast line.

12 On the other hand, while he says that he also goes  
13 on to say that the margin of safety for this plant must be  
14 substantially higher than it is at present, and then he would  
15 be satisfied with it.

16 So he has drawn this peculiar distinction between  
17 the margin of safety which should be required for this plant,  
18 which he says should be somehow greater than the margin that  
19 has presently be drawn, and on the other hand states that  
20 because there has been no mathematical analysis, if you will,  
21 made, as to exactly what is safe and what is unsafe, therefore  
22 this plant should not be allowed to operate.

23 And I suggest that this is a fundamental  
24 inconsistency which runs through the argument of Mr. Roisman.  
25 The fact is that you are not able to make judgments with

1 mathematical precision on these safety issues. You must  
2 make informed judgments, taking into account all of the data  
3 that are available, and it is the Board's function to make  
4 that judgment.

5 Another problem that I have with what Mr. Roisman  
6 has said is that on the one hand he seems to feel that it  
7 would be all right to build the Indian Point 2 plant at  
8 another place, but somehow it is not all right to build the  
9 particular facility here. What he seems to be suggesting is  
10 that it would be all right to build this plant if fewer  
11 people were exposed to the hypothetical risk of this plant, but  
12 it is not all right to build this facility if there are any  
13 number of people who live in this area, and we submit,  
14 Mr. Chairman, that this is not the approach that is incorporated  
15 in the Atomic Energy Act at all. It is no more permissible  
16 to expose a small number, a fewer number of people to risks  
17 of hazard than it is to expose a large number of people to  
18 risks of hazard, and I submit that Mr. Roisman has fundamentally  
19 missed that point in his argument.

20 Now with regard to the emergency core cooling system  
21 problem as it pertains to the Indian Point 2 plant, the  
22 Commission has promulgated the interim acceptance criteria,  
23 which are binding regulations. It is holding a national  
24 rule-making proceeding in which all opposing points of view  
25 are being expressed, and in which all of the information which

1 Mr. Roisman at one point suggested should somehow be  
2 certified by this Board to the Commission, are now being  
3 presented in the context of that rule-making proceeding.

4 It is quite clear, Mr. Chairman, from the ruling  
5 of the Atomic Safety and Licensing Appeal Board that the  
6 question which this Board has with regard to the interim  
7 acceptance criteria has been answered and that this Board,  
8 having its question answered by that Appeal Board, is now in  
9 a position to decide the fundamental question, whether the  
10 Applicant has complied with the interim acceptance criteria.

11 Mr. Roisman made the point at one point during his  
12 argument that the Citizens' Committee for the Protection of  
13 the Environment was questioning whether the Applicant had  
14 complied with those criteria, and I really find that rather  
15 a difficult point to understand, since so little of the  
16 evidence that was introduced by the Citizens' Committee  
17 pertained to the question of whether the Applicant had  
18 satisfied the interim acceptance criteria. And the vast bulk  
19 of the evidence pertained to the fundamental question as to  
20 the validity of the criteria, which has been transferred to  
21 the emergency core cooling system rule-making proceeding.

22 With regard to the question of the prototypes  
23 which have preceded Indian Point 2, it must be remembered  
24 that this facility, like other facilities, builds on the  
25 entire technology of the nuclear industry, which goes back,

1 as Mr. Roisman points out, over a period of some twenty-five  
2 years. The various components, the various features of this  
3 plant, have been adequately tested, have been tested over  
4 and over again, and there is evidence, there has been evidence  
5 introduced, as to the testing and as to the experience which  
6 has been developed upon which the Applicant rests its  
7 contention that the plant has been shown to be adequately safe.

8           Concerning the fifty percent power level at which  
9 the Applicant seeks to test this plant, there is evidence in  
10 the record of this proceeding which demonstrates that the  
11 heat in the core will be very, very substantially less than  
12 would be the case in the event that the plant were operated  
13 at full power, and that the temperature of the fuel rods  
14 would be very significantly less. The argument that the  
15 Citizens' Committee makes with regard to that showing of the  
16 Applicant is rather revealing, I believe, because upon being  
17 shown these facts concerning the temperature of the fuel  
18 elements themselves, the argument of the Citizens' Committee  
19 then shifts to another plane, and the argument is then made  
20 that somehow even with the showing of lower temperature there  
21 is just simply not an adequate assurance that the system is  
22 going to work at all.

23           And I find myself in the disturbing situation of  
24 believing that no matter what kind of showing was made, as  
25 I indicated earlier, it simply would not be possible to

1 satisfy Mr. Roisman that this plant would be safe.

2 There are two or three other points that I would  
3 like to make concerning the emergency core cooling system and  
4 the matter of the pressure vessel.

5 Mr. Roisman has argued that somehow the definition  
6 of loss of coolant accident might possibly include a rupture  
7 of the pressure vessel. I should like to point out that all  
8 of the plants that have been licensed to date have been  
9 licensed on the basis of utilizing the double-ended pipe  
10 break as the largest break in the reactor coolant pressure  
11 boundary. There has never been a requirement imposed on the  
12 plant to design against the rupture which Mr. Roisman asked  
13 this Board to consider.

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1           The Applicant has presented extensive, voluminous  
2 testimony on the adequacy of the pressure vessel in response  
3 to the very searching inquiries that the Board has directed  
4 to the Applicant, probably a more complete and thorough  
5 presentation on the adequacy of the pressure vessel that has  
6 ever been made an an Atomic Safety and Licensing Appeal  
7 Board.

8           Finally, Mr. Chairman, with regard to the legal  
9 arguments which Mr. Roisman has made, I believe that our  
10 brief adequately demonstrates that the Staff review, the  
11 extent of the Staff review, the adequacy of the Staff review,  
12 is not an issue in this proceeding, and the issue in this  
13 proceeding is whether this plant has been constructed with  
14 reasonable assurance that it will not endanger the public,  
15 and it is up to this Board to determine whether the record  
16 is adequate.

17           Whether the Staff has done the sort of job that  
18 Mr. Roisman thinks it should have done is not the issue  
19 before this Board.

20           Finally, Mr. Chairman, with regard to the matter  
21 of the Staff role in balancing the environmental impact, here  
22 again Mr. Roisman misreads the regulations of the Atomic Energy  
23 Commission. Under Appendix D it is not the Staff which is  
24 required to balance the evidence in the record. It is the  
25 Board which is required to balance that evidence. Even if



1 the Staff had failed to do its job properly in conducting its  
2 environmental review, a point which we most certainly do not  
3 concede, it is up to the Board to determine on the basis of  
4 the evidence in the record whether from an environmental point  
5 of view the license should issue.

6 Mr. Chairman, I have no further comments.

7 CHAIRMAN JENSCH: Thank you very much. I am sure  
8 these arguments will be very helpful to the Board. The  
9 transcripts will be available for our review.

10 MR. KARMAN: May I have one moment, Mr. Chairman?  
11 I don't know whether you allotted me any time, but I am  
12 requesting just a moment.

13 CHAIRMAN JENSCH: Very well. Proceed.

14 MR. KARMAN: Under the rules and practice of the  
15 Commission, Mr. Chairman, the Regulatory Staff is deemed to  
16 be a party to any hearing. Mr. Roisman would on one hand  
17 indicate that the Staff may be playing too active a role in  
18 the course of a hearing such as this, yet on the other hand  
19 question the adequacy of the Staff's review. I am not here  
20 to discuss the issues as to whether or not the Staff review is  
21 an issue in this proceeding, but the record will indicate to  
22 the Board in making its decision about the review of the  
23 application made by the Regulatory Staff under its mandated  
24 requirement by the Congress of the United States will show  
25 that this was an adequate review and that the burden of proof

1 with respect to this 50 per cent testing license has been  
2 carried by the Applicant.

3 CHAIRMAN JENSCH: Thank you.

4 Is there any further statement?

5 MR. ROISMAN: Mr. Chairman, only just to give the  
6 reference, since there seemed to be some confusion with regard  
7 to 10CFR Part 2, Subparagraph IIIG, which in describing  
8 responsibilities of the Board says, "The role of the Board  
9 is to decide whether the application and the record of the  
10 proceeding contain sufficient information, and the review of  
11 the application by the Commission's regulatory staff has  
12 been adequate to support the findings proposed to be made  
13 by the Director of Regulation and the issuance of the  
14 construction permit proposed by the Director of Regulation.

15 MR. TROSTEN: Mr. Chairman, Mr. Roisman is reading  
16 from a section of the regulations dealing with uncontested  
17 cases.

18 CHAIRMAN JENSCH: Yes. And if you will turn over  
19 to the contested cases they say, "In addition to the foregoing  
20 requirements in the previous subsection you shall include the  
21 following items."

22 So the previous recitation is still effective.

23 Is there any further statement? If not we will --

24 end

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068t1 1 MR. VOIGT: Mr. Chairman, before you close the  
2 record, may I submit to the members of the Board three copies  
3 of the original design calculations of stresses and loads?

4 CHAIRMAN JENSCH: I think it's already been given  
5 to the parties.

6 MR. VOIGT: It was given to Mr. Roisman. I did not  
7 have copies available. That's been my problem, and I apologize  
8 for the delay in getting the copies, but I have them now and  
9 they are available to the other parties.

10 CHAIRMAN JENSCH: We do not want to receive them  
11 unless the other parties have one too. I will take one for  
12 Dr. Geyer, who is unavoidably detained.

13 MR. VOIGT: Thank you, sir.

14 CHAIRMAN JENSCH: Does that conclude the presentation?  
15 The Board has just one item to mention, to remind the attorneys  
16 that the Board will expect the attorneys to proceed to endeavor  
17 to secure some stipulations about matters that we discussed  
18 earlier in the proceeding. I believe the Citizen's Committee  
19 indicated that by May 27th it would submit a proposed list of  
20 items for stipulation.

21 MR. ROISMAN: That was my other half, the  
22 Environmental Defense Fund.

23 CHAIRMAN JENSCH: I am sorry, Environmental Defense  
24 Fund.

25 In my event, all seeking to see if there are matters

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1 that can be considered for a June hearing that would avoid  
2 any repetition between the 100 per cent or 90 per cent limit.  
3 In case there is to be any difference made, the Board is  
4 inclined to stay with the 100 per cent limit. We will con-  
5 sider matters that can be presented prior to the submission  
6 of the final environmental impact statement which Staff  
7 counsel expects will be available in July. We would like  
8 to have a report from the parties in reference to these  
9 matters by June 9, 1972, and if in the opinion of the Board  
10 they are not matters which indicate -- let me state it this  
11 way, that if there are matters that appear to involve a  
12 repetition between what could be discussed from an environ-  
13 mental point of view now and when the environmental impact  
14 statement is out, the Board is inclined to cancel the June  
15 19th contemplated session of hearings, and as to which a  
16 formal order will be issued.

17 At the present time, however, public notice is  
18 hereby given that this proceeding will reconvene at 1:30 p.m.  
19 on June 19th, 1972, in what I believe will be the all purpose  
20 room of the Springvale Inn, but the exact location will have  
21 to be identified by a further order, so that we encourage and  
22 hope the attorneys will endeavor to see if there are matters  
23 that will not be repetitive in character between the environ-  
24 mental data presently available and that which would be more  
25 fully developed by a final environmental impact statement.

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MR. TROSTEN: Mr. Chairman, I assume the Board will act on our motion for reconsideration of its ruling and we would hope that the Board would act on that as promptly as practicable.

1 MR. MACBETH: Mr. Chairman.

2 CHAIRMAN JENSCH: We will keep the amount of  
3 paperwork as low as practicable, I assure you. It may be  
4 that we will have to get a report from the parties before  
5 we can make that determination, too.

6 MR. MACBETH: I will file a written response to  
7 Mr. Trosten's motion. I think there are no new facts in  
8 the motion. I have looked at it very briefly during the  
9 hearing this morning and I think on that basis alone the  
10 Board should not disturb the ruling that it made yesterday,  
11 but I will file a formal response to Mr. Trosten promptly

12 I also began this morning by giving Mr. Trosten  
13 a letter which I hope will lead to some stipulations and  
14 expeditious hearing process in June when the Board next meets.

15 May I give to you what appears to be a letter from  
16 National Resources Defense Council dated April 14, 1972, with  
17 copies to all parties. I can't read the first page, and the  
18 public proceeding branch sent it to me. You might get a  
19 better copy.

20 MR. MACBETH: I will endeavor to do so.

21 CHAIRMAN JENSCH: Send a legible copy to the public  
22 board.

23 MR. ROISMAN: That was the one where they withdrew  
24 the intervention.

25 MR. MACBETH: I will endeavor to supply the Board

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with a legible copy.

CHAIRMAN JENSCH: Is there anything further that we can consider? If not, this session of the hearing is concluded and we will resume on June 19, 1972.

(Hearing adjourned.)

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