



UNITED STATES ATOMIC ENERGY COMMISSION

IN THE MATTER OF:

Place -

Date -

Pages.

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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 :

----- +

Hendrick Hudson High School  
Auditorium  
Albany Post Road  
Montrose, New York

Wednesday, 24 March 1971

The above-entitled matter came on for hearing,  
pursuant to notice, at 9:30 a.m.

BEFORE:

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

DR. JOHN C. GEYER, Member.

MR. R. B. BRIGGS, Member.

APPEARANCES:

(As heretofore noted.)

C O N T E N T SWITNESS:                      DIRECT    CROSS    REDIRECT    RECROSS

1  
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3  
4 William F. Nelson                      659

5 James Moore                              663

6 George McAdoo                          663

7 John Weisemann                        663

8 William Cahill                         663

9 John Crob                                663

10 Joseph Prestele                        663

11 Michael A. McCoy                      674

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13 for the Judson Valley, and                      513

14 Marilyn C. Bowler, President, Federated  
15 Conservationists of Westchester County,  
16 Inc.    519

EXHIBITS:FOR IDENTIFICATIONIN EVIDENCE

17 Applicant's Exhibit 2                      670                      670

18 Staff Exhibit Supplemental  
19 No. 1                                      676                      678

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P R O C E E D I N G S

CHAIRMAN JLENSCH: Please come to order.

At the outset I might note that we do not have our microphone equipment apparently connected so that each of us will have to speak a little louder until the operator reports for duty. This proceeding is another session in the conference type of hearings that we have been holding in the matter of Consolidated Edison Company of New York, Inc., in reference to the Indian Point Station, Unit No. 2, in Docket No. 502-247.

This session of hearings are intended to be procedural in character but upon request and without objection there may be occasions when evidence will be adduced and considered and received at these sessions.

Such procedures and endeavor are undertaken in order to expedite the presentation of evidence and the consideration of the matters related to the issues prescribed by the Atomic Energy Commission for consideration and determination in this proceeding.

The last hearings of this kind we had were on January 19, 1971, and they were convened at this same place, the Lendrick Hudson High School in Montrose, New York.

Now, this conference hearing is convened in accordance with a notice of conference type of issue. At the hearings issued on March 2, 1971, setting this time and

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place for this conference type of hearing.

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General public distribution was given of this notice which included publication in the Federal Register as reflected by Volume 36 of the Federal Register at page 4305 and was published on March 4, 1971.

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In addition, the Public Section of the Atomic Energy Commission has according to the announcements made distribution of the summary of the notice and copies were sent to newspaper media for publication.

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There are people here from the public, perhaps it would be well to have another statement of appearance. Is there an appearance on behalf of the Applicant?

13

MR. TROSTEN: Yes, Mr. Chairman.

14

CHAIRMAN JENSCH: Will you state them, please?

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17

MR. TROSTEN: My name is Leonard M. Trosten; I am appearing on behalf of the Applicant. My office address is 1821 Jefferson Place, N. W., Washington, D. C.

18

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Appearing with me today are my associates, Lex K. Larsen and Gerald Maher. Mr. Larsen's address is 1821 Jefferson Place, N. W., Washington, D. C.; Mr. Maher's office address is One Chase Manhattan Plaza, New York, New York.

22

23

24

Also appearing with me today, Mr. Edward J. Sack of the Law Department of Consolidated Edison whose office address is Four Irving Place, New York, New York.

25

CHAIRMAN JENSCH: Thank you, sir.

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2 Appearance on behalf of the Regulatory Staff,  
3 Atomic Energy Commission.

4

5 MR. KARMAN: My name is Myron Karman, counsel for  
6 the Regulatory Staff of the Atomic Energy Commission. My  
7 address is 7920 Norfolk Avenue, Bethesda, Maryland; appearing  
8 with me is my colleague, Mr. Joseph D. Knotts, Jr., also  
9 counsel for the Regulatory Staff.

10

11 CHAIRMAN JENSCH: Thank you, sir.

12

13 Appearance on behalf of the Atomic Energy Council  
14 of the State of New York.

15

16 MR. SCINTO: Mr. Chairman, my name is Joseph Scinto  
17 on behalf of the New York State Atomic Energy Council. My  
18 business address is 112 State Street, Albany, New York.

19

20

21 CHAIRMAN JENSCH: Thank you, sir.

22

23 Appearance on behalf of the Intervenor, Citizens  
24 Committee for the Protection of the Environment and also on  
25 behalf of the Environmental Defense Fund?

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27

28 MR. ROISMAN: My name is Anthony Roisman. I am  
29 appearing on behalf of the Environmental Defense Fund and on  
30 behalf of the Citizens Committee to Protect the Environment;  
31 my office address is 1910 M Street, N. W., Washington, D. C.

32

33

34 CHAIRMAN JENSCH: Appearance on behalf of the  
35 Hudson River Fishermen's Association.

36

37

38 MR. MC BETH: Angus McBeth appearance on behalf  
39 of the Hudson River Fishermen's Association, 34 West 44th

40

ln4 1 Street, New York, New York.

2 CHAIRMAN JENSCH: Thank you, sir.

3 Has inquiry been made of all Intervenors for  
4 appearance?

5 Apparently so.

6 Before proceeding, a lady approached the bench  
7 and required respecting statements that were intended to be  
8 included by way of limited appearance but the authors of the  
9 statements could not conveniently attend, as I recall.

10 Will you stand and make your statement, please,  
11 ma'am?

12 MRS. DIXON: I have two statements --

13 CHAIRMAN JENSCH: Would you give your name and  
14 address?

15 MRS. DIXON: Irene Dixon, 71 Pine Avenue, Ossining,  
16 New York.

17 CHAIRMAN JENSCH: Thank you.

18 You have two statements, are they completely  
19 typewritten?

20 MRS. DIXON: Yes.

21 CHAIRMAN JENSCH: Was it your intention to ask  
22 that they be incorporated as if read into the transcript?

23 MRS. DIXON: Yes.

24 CHAIRMAN JENSCH: Is there any objection on behalf  
25 of the Applicant?

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MR. TROSTEN: No objection.

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CHAIRMAN JENSCH: Regulatory Staff?

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MR. KARMAN: No objection.

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CHAIRMAN JENSCH: From any of the Intervenors?

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MR. MC BETH: No objection.

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MR. ROISMAN: No objection.

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CHAIRMAN JENSCH: All right, if you hand your

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statements to the Reporter, the Reporter is directed to

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incorporate those statements into the record as if read.

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(Statements follow.)

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1 LIMITED APPEARANCE OF THE CITIZENS COMMITTEE FOR  
2 THE HUDSON VALLEY, PO BOX 146, ARDSLEY-ON-HUDSON, NEW  
3 YORK 10503.

4 The Citizens Committee for the Hudson Valley opposes the  
5 granting of an operating license to Consolidated Edison Company  
6 for the plant currently under consideration, or for any other  
7 plants in the Hudson Valley, until the particular utility  
8 proves that its operation will not (1) discharge heated effluent  
9 into the river or otherwise adversely affect estuarine resources,  
10 (2) discharge radioactive waste, either high or low level,  
11 into the air or water, or (3) pose a physical danger to its  
12 employees or the citizens of the Valley or of the New York  
13 metropolitan region.

14 Before an operating permit is granted, Consolidated  
15 Edison must show that there will be no danger in its operation  
16 in terms of possible meltdown and radioactive excursion.  
17 Enclosed and incorporated by reference is material from the  
18 Environmental Planning Lobby with reference to this potentially  
19 serious problem.

20 In view of the catastrophic potential that one of  
21 these nuclear plants represents in terms of possible radio-  
22 active contamination upon meltdown, common prudence  
23 indicates that they should first be built in remote and less high  
24 highly populated areas, and thoroughly tested before any  
25 program of crash construction, upon which New York State has

1 embarked, be carried out. The Hudson region, and the New York  
2 metropolitan area, are not appropriate areas of construction,  
3 in view of their high population density, until such prior  
4 testing has been carried out and the safety of such potentially  
5 dangerous installations thoroughly tested in advance. In any  
6 event, as urged by Dr. Teller, nuclear installations should  
7 be constructed underground, as is beginning to be done in  
8 Europe, to guard against the possibility of citizen holocaust.

9 This hearing points up again the utter vacuum in  
10 planning for the Hudson Valley. Notwithstanding the Hudson  
11 River Compact Act and the National Environmental Protection  
12 Act, there is no effective mechanism to bring order out of the  
13 anarchy of official planning. At the State level the  
14 paper organization of the Hudson River Valley Commission masks  
15 and protects the development efforts of the State Department  
16 of Transportation in building highways along the river, of the  
17 utilities in stringing bigger powerlines across the river and  
18 in the Valley and epitomizes the complaisance of State  
19 officials in permitting, without effective protest, the construc-  
20 tion of a nest of nuclear and fossil fueled generating plants  
21 in the Tappan Zee area that can put a thermal block on the  
22 Hudson that will destroy its estuarine values and, at the  
23 same time, encourage an industrialization of the Tappan Zee  
24 that, if continued, will result in its rivalling some of the  
25 less favored parts of New Jersey in terms of industrial

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1 degradation.

2           It is against this potential industrial degradation  
3 of the entire Tappan Zee area, and of the Valley, that the  
4 Citizens Committee insists that the Atomic Energy Commission  
5 meet its full environmental responsibility in the performance  
6 of its licensing function, that it protect the health and  
7 safety of the people of the Valley and of the metropolitan  
8 region and look beyond its narrow goals in terms of nuclear  
9 energy production, in addition to the larger goals of protecting  
10 our natural resources and preserving the integrity of our  
11 environment.

12           ENVIRONMENTAL PLANNING LOBBY, 30 East 42nd Street,  
13 New York, New York 10017.

14           "Two specific environmental problems are involved  
15 in the growing program of nuclear power generating facility  
16 construction. Both pose a direct confrontation between the  
17 economic ethic and the environmental ethic; to build these  
18 nuclear plants in an environmentally acceptable manner can  
19 clearly be done on the basis of technological resources -- but  
20 it will cost more. The first problem is thermal pollution.  
21 Since nuclear power plants are less efficient than convention  
22 or fossil-fueled plants, the nuclear plants run hot, and require  
23 enormous quantities of cooling water. In terms of the projected  
24 number of plants planned for our rivers and shorelines this  
25 constitutes a massive threat to our already deplorable water

1 quality and to river and marine life systems. One solution,  
2 which costs more money, is to require that all nuclear plants  
3 be constructed with closed cycle evaporative cooling systems  
4 to eliminate thermal pollution. Another solution would be more  
5 research to improve the nuclear plants' efficiency, so they do  
6 not run so hot. Still other solutions turn on use of the waste  
7 heat for constructive instead of destructive purposes. The  
8 burden of compliance with environment standards, however, is  
9 a responsibility resting directly on the utilities.

10           The second problem is radioactive discharge. This  
11 involves high level radioactive wastes, low level wastes,  
12 problems of accident in processing, storage, transportation,  
13 and use of nuclear components, and disposal or safeguarding  
14 of the reactor vessels of abandoned plants. With regard to high  
15 level wastes, they are gathered and stored; low level wastes,  
16 as of now, are discharged in air and water. There is increasing  
17 scientific concern that the problem of radioactive pollution  
18 is more serious than has been recognized. In particular, the  
19 recent Gofman and Tamplin report has recommended on the basis  
20 of studies that current permissible radiation levels be reduced  
21 to one-tenth of current standards. A safer procedure would be  
22 to treat low level wastes in the same way that high level ones  
23 are being safeguarded, that is, to contain and store them;  
24 this can be done by legislation prohibiting radioactive dis-  
25 charge from nuclear power plants.

1           Related to the foregoing, but of low mathematical  
2 probability, is the danger of nuclear accident in one of these  
3 massive plants. If such an accident were to take place in one  
4 of the huge nuclear facilities beginning to ring our major  
5 metropolitan areas, the extensive loss of life entailed and the  
6 size and scope of the radioactive decontamination problem would  
7 be a sobering setback for the electrical utility industry. One  
8 likely result, if past experience is any guide, would be an  
9 increase in the public relations staff to explain the advantages  
10 of clean energy. If the utilities take as much care in the  
11 operation of their nuclear plants as the National Aeronautics  
12 and Space Agency took in the recent moon shot (and somehow we  
13 doubt that the utilities do), the experience of the three  
14 astronauts is a chilling caution to those, in the face of human  
15 fallibility, who rely on mathematical probabilities as the talis-  
16 man against catastrophic error. It is for this safety reason,  
17 among others, that nuclear plants in Sweden and Switzerland  
18 have been placed underground.

19           For the foregoing reasons, a number of citizen and  
20 environmental groups in the State have urged legislation to  
21 declare a moratorium at the State level of all nuclear plant  
22 construction until the program has first been tested in  
23 areas less densely populated and the utilities have established  
24 that their operation will be without adverse environmental  
25 effect in terms of radioactive or thermal pollution.

1                    Lobby's Position: The Environmental Planning Lobby  
2 is cognizant of the foregoing considerations, as well as the  
3 problem of air pollution from additional fossil-fueled plants  
4 in cities and the excruciating position in which the technolo-  
5 gical neglect of the utilities has placed both the utilities  
6 and the public they have failed to serve. We believe that the  
7 problems can be taken up in part at the State level, and  
8 anticipate specific legislative recommendations in the Conser-  
9 vation Bill of Rights Act. On a broader scale, the Lobby  
10 recommends immediate legislation at the national level to study  
11 the power industry from an environmental point of view, the  
12 need for additional power facilities as against the minimizing  
13 of environmental destruction, and to establish licensing  
14 procedures for all electrical power generating facilities,  
15 including nuclear and fossil-fueled plants, as well as pumped  
16 storage facilities and power lines.            (Emphasis supplied.)

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LIMITED APPEARANCE OF MARILYN C. BOWLER,  
PRESIDENT, FEDERATED CONSERVATIONISTS OF  
WESTCHESTER COUNTY, INC., 20 SOUNDVIEW  
AVENUE, WHITE PLAINS, NEW YORK 10606  
(914) 761-3406.

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March 10, 1971

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We are aware of the need for power in the New York metropolitan area, and of the technological incapacity of Consolidated Edison to meet these needs. And yet, the power emergency is as much an emergency in terms of corporate and political leadership that does not yet relate its responsibilities to the growing need for environmental conservation and protection.

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It is against this background that we address ourselves to the burden of full environmental responsibility resting on those who would build nuclear plants.

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To the extent that its rules accord with recognition of its full environmental responsibility, and its actions are consistent with this responsibility in these matters, the Atomic Energy Commission will properly acquit itself of its duty. To the extent that it does any less, it is subject to legitimate environmental criticism and subject to such changes in its organization, powers, and procedures as Congress may eventually determine to be necessary to bring the Commission's functions and operation into harmony

1 with the environment.

2 This responsibility, in short, rests both upon  
3 Consolidated Edison Company and the Atomic Energy Commission,  
4 since they are so closely related in the planning and  
5 construction of the proposed facility, that they assume  
6 the full burden of proof that the proposed plant will not  
7 damage the environment or adversely affect the public  
8 health and safety. In the absence of having met such burden,  
9 the plant should not be licensed for operation until this  
10 burden is met. Indeed, until this burden is met, we are  
11 moved on a broader basis to urge that a moratorium be imposed  
12 on all new nuclear plants.

13 The particular areas of environmental impact with  
14 regard to which we would like to have more information to  
15 establish the proposed plant's compliance with environmental  
16 standards are:

17 1. Taken in conjunction with existing and proposed  
18 utilities' construction in the area, to what extent will  
19 this proposed use of the waters of the Hudson add a thermal  
20 increment to those waters; and can the utility and the  
21 Atomic Energy Commission establish by a fair preponderance  
22 of the evidence that such thermal increment will have no  
23 adverse effect on the ecological balance of the River, or  
24 adversely affect its marine life?

25 2. To what extent, taken together with existing

1 and proposed construction, will the proposed installation add  
2 radioactive elements, in the low level range, to our air and  
3 water; and can the utility and the Atomic Energy Commission,  
4 in connection with their proposed plant, establish that the  
5 cumulative effect of such low level radioactive waste will  
6 have no adverse effect upon the chain of life, or upon the  
7 mutation rate, or in terms of cancer?

8 3. To what extent will the proposed installation,  
9 taken by itself, create a danger of nuclear excursion through  
10 malfunction of the unit, or through sabotage resulting from  
11 breach of security, or unfriendly act; and can the utility  
12 and the Atomic Energy Commission guarantee that the installation  
13 will cause no danger to life or property of those living  
14 in the New York metropolitan region?

15 Would the utility, in the absence of Government  
16 insurance against catastrophe, be prepared to construct and  
17 operate the proposed plant and to secure conventional insurance  
18 at rates to be set by underwriters on the basis of their  
19 independent evaluation of the risks involved?

20 4. To what extent will the proposed construction  
21 result in possible contamination of neighboring areas running  
22 into the next century through long-lived radioactive elements  
23 in the installation housing; and what provisions, after termina-  
24 tion of the use of the plant, are there for removing the  
25 installation housing to prevent possible contamination of

1 ground water levels?

2 5. To what extent is the utility prepared to adjust  
3 its plans to natural, scenic and aesthetic considerations, and  
4 to protect the natural values and scenic beauty of the  
5 Hudson and of Westchester by screening or underground its  
6 plants, and by undergrounding the overhead transmission lines  
7 that now disfigure the county, the Hudson Valley and the  
8 region?

9 6. To what extent is the utility and the Atomic  
10 Energy Commission prepared to guarantee that the transportation  
11 of radioactive elements from and to this and other  
12 installations existing and proposed for the Hudson and Long  
13 Island Sound regions will not adversely affect the health  
14 and safety of the people of Westchester and of the New York  
15 metropolitan region?

16 We ask the assistance of independent scientists,  
17 particularly those in the biological field, to review and  
18 advise us, the utility and the Atomic Energy Commission with  
19 regard to these problems, and to assist our planning officials  
20 to proceed wisely and carefully with the major problem of  
21 reconciling planning to meet our reasonable energy needs with  
22 the requirements of protecting the environment.

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lnl 1 CHAIRMAN JENSCH: This conference type hearing is  
2 preceded by some communications from the Applicant and also  
3 from the Intervenors, the Citizens Committee for the Protection  
4 of the Environment, the Environmental Defense Fund and also  
5 the Hudson River Fishermen's Association.

6 Copies of those communications are in the public  
7 record of this proceeding and that public record is reflected  
8 both at the Public Document Room of the Atomic Energy  
9 Commission of Washington, D. C., and also in the public record  
10 that the Commission has directed to be maintained here at the  
11 Hendrick Hudson High School and all parts of the public record  
12 are available for review by members of the public and all  
13 additions to the record should be promptly supplied and,  
14 therefore, the intention of all parties and persons is  
15 directed to this public record for anything that is in the  
16 public record but particularly now in reference to the communi-  
17 cations received since January 19, 1971, with reference to the  
18 contemplated matters that could be considered at this  
19 conference type of hearing.

20 We have also had an there are filed in the public  
21 records, motions made by the parties, I think on one occasion  
22 a joint motion by the Applicant and the Citizens Committee for  
23 the Protection of the Environment and in addition a separate  
24 motion by the Environmental Defense Fund.

25 These will be considered here this morning and

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1 no reference by way of my description will be given, rather  
2 it will be left to a statement by the parties in reference to  
3 those matters.

4 In addition, there was a request by the Applicant  
5 that certain matters of evidence be considered for receipt  
6 into the record and I infer from the communications, the written  
7 communications in that regard that all parties had been  
8 appraised of this request of the Applicant.

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1 I might just say for the members of the public who are  
2 here, this Board does not have any communication with any of the  
3 parties except in writing, which copies of all writings are in  
4 the Public Document Room.

5 With that introduction, let me inquire first whether  
6 the parties desire to consider the matters of motion first or  
7 the matters of evidence indicated by the Applicant. What is  
8 the view of the parties? The Applicant?

9 MR. TROSTEN: I think it would be appropriate,  
10 Mr. Chairman, to consider the matter of the motions first and,  
11 then the matter of evidence.

12 CHAIRMAN JENSCH: Any objection to that procedure?

13 (No response.)

14 Which motion first? The joint motion for considera-  
15 tion of the questions propounded by the intervenors, the  
16 Environmental Defense Fund and the Citizens Committee as to the  
17 relevancy of this proceeding?

18 MR. TROSTEN: Are you referring to the joint motion  
19 of the Citizens Committee and the Applicant?

20 CHAIRMAN JENSCH: Yes.

21 MR. TROSTEN: Yes, this would be acceptable to me,  
22 Mr. Chairman.

23 CHAIRMAN JENSCH: Since the questions have been  
24 propounded by the intervenor, Citizens Committee, will the  
25 Citizens Committee make a statement in reference to this

1 joint motion and the alleged relevancy of the questions  
2 propounded to the issues in this proceeding?

3 MR. ROISMAN: Yes, Mr. Chairman.

4 MR. KARMAN: Mr. Chairman, am I to understand that we  
5 are going into the merits of this motion at this time?

6 CHAIRMAN JENSCH: Well, what motion are you speaking  
7 of?

8 MR. KARMAN: The joint motion of the Applicant and  
9 the Intervenor with respect to the objections by Applicant to  
10 answering certain questions of the Intervenor?

11 CHAIRMAN JENSCH: Yes. Do you have any objection?

12 MR. KARMAN: Yes, I do, Mr. Chairman. Under our  
13 rules the Regulatory Staff has until Friday where we can  
14 submit a response to this motion.

15 CHAIRMAN JENSCH: Do you want to sit here until  
16 Friday until we get your response or have you worked up a  
17 response that we can have now? You are entitled to the full  
18 measure of the rules.

19 MR. KARMAN: It is our intention, Mr. Chairman, to  
20 submit our answers in writing in the time prescribed by the  
21 rules in this joint motion.

22 CHAIRMAN JENSCH: You are entitled to the full  
23 measure of the rules. We will proceed to hear the statement by  
24 the joint movants and we will not make a decision until we  
25 have your response. You may, however, make oral comments if

1 you desire, as well.

2 MR. KARMAN: At this time, inasmuch as we are going  
3 to discuss some of the aspects of this motion, I respectfully  
4 request until April 2nd, which would be one week from Friday,  
5 in which to submit our written response to this joint motion.

6 CHAIRMAN JENSCH: What is the basis for the request  
7 for the extended time?

8 MR. KARMAN: The basis of the request is, Mr.  
9 Chairman, that we have been diligently endeavoring to compile  
10 answers to the questions which have been submitted by the  
11 Intervenor. We have diligently been preparing responses to  
12 the Atomic Safety and Licensing Board to requests which are  
13 submitted to the Staff, and I request that this additional week  
14 will cause no undue delay in this hearing and will give us  
15 an opportunity to respond to what we consider a most important  
16 motion which does have some aspects which we deem to require  
17 the additional time for.

18 CHAIRMAN JENSCH: Is there any objection to the  
19 request by the Staff for additional time?

20 MR. ROISMAN: On behalf of the Citizens Committee,  
21 I would like to lodge an objection. As the Hearing Conference  
22 will indicate later, as a result of discussions we have already  
23 had with the Applicant, this hearing is being conducted under  
24 the assumption that time is of the essence. We will have a  
25 dispute this morning about when the hearing ought to begin.

1 A matter of a week or so is what is involved to some extent.

2 Unlike the Applicant or the Staff we have only one  
3 attorney working on this matter. We do not have the resources  
4 available. We are being constantly pressured to meet deadlines  
5 in order to get material so that there will not be an  
6 "unreasonable delay" in terms of reaching the date of the  
7 hearing. The Staff's request for an extra week to prepare that  
8 merely means there will be more time that they freed to prepare  
9 answers to the second-round questions, more time to prepare  
10 for the hearing eventually, more time to deal with other issues  
11 before the Board and ultimately the goat will be the Citizens  
12 Committee, because we will then say the Staff has waited until  
13 the middle of April to respond to our round-two questions,  
14 since they waited to the 2nd of April to respond to this motion.  
15 All of that will add up to trying to have a hearing earlier than  
16 we are prepared to have it.

17 We think it will be more consistent if we all stick  
18 to the deadline and we will try to have this hearing as soon as  
19 the Applicant would like to have it. Insofar as the significance  
20 of the motion is concerned, an extensive memorandum was  
21 filed on behalf of the AEC stating the AEC's position on this  
22 matter. I don't understand why it is necessary for them to  
23 take an extra week -- in fact I don't understand why they would  
24 not be prepared to respond this morning.

25 I understand the motion raised goes to an issue they

1 have already considered in another context. So, on behalf of  
2 the Citizens Committee, I would like the Staff to stick to the  
3 schedule or else I would like it understood that when we talk  
4 about scheduling later, these weeks that the large AEC Staff  
5 asked for should not be denied when the Citizens Committee  
6 asks for an extra week over which the Applicant would like.

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1 CHAIRMAN JENSCH: I think the necessary consequence  
2 of any delay by any one party in submitting a response to a  
3 motion or response to questions necessarily entails time for  
4 those who are receiving those responses or those answers to  
5 give consideration and perhaps to take time to comment or  
6 discuss these answers and responses to the motion.

7 So I think it necessarily follows that when the  
8 request is made for additional time to submit answers there  
9 also by implication, avoiding any objections to any time needed  
10 for those who are receiving this late material to have comments  
11 or answers in reference thereto.

12 MR. KARMAN: Mr. Chairman, at no time has the  
13 Regulatory Staff pressed either the Intervenors or the  
14 Applicant with respect to a time schedule on this. We are  
15 certainly diligent and are as willing to have this hearing  
16 be conducted in as expeditious a manner as possible. However,  
17 we are constrained at the moment to respond to those motion  
18 which we deem an important motion, regardless of how Mr.  
19 Roisman feels it might have been answered in another proceed-  
20 ing, we have to answer it in context of the proceeding which  
21 is before us and we are asking the Board for what we consider  
22 to be a reasonable time in which to present our answers  
23 to this motion.

24 CHAIRMAN JENSCH: We haven't heard from the Applicant  
25 yet.

1 MR. TROSTEN: Mr. Chairman, I appreciate the  
2 difficulties under which the Regulatory Staff labors.  
3 However, I am constrained also to object to a request for  
4 additional time to answer this motion. We are under  
5 exceedingly heavy time pressure to move this proceeding along  
6 as expeditiously as practicable and I believe the Staff will  
7 have an adequate time within the normal bonds of the rules  
8 to formulate its answer and accordingly we object to the  
9 granting of additional time to the Staff to answer this  
10 motion.

11 CHAIRMAN JENSCH: You mentioned you are under  
12 pressures to move this along. How is the project developing  
13 to completion? Can you give us just a capsule indication  
14 of how complete the construction is now?

15 MR. TROSTEN: Well, Mr. Chairman --

16 CHAIRMAN JENSCH: I mean what is pushing you  
17 is what I had in mind.

18 MR. TROSTEN: Well, the project schedule is such  
19 that it is nearing completion. I think it would be  
20 appropriate, Mr. Chairman, for Mr. William Cahill, Applicant's  
21 Vice President to respond in a general sense to your question.

22 CHAIRMAN JENSCH: Well, I don't care for the  
23 specifics to that extent.

24 Are we talking about your readiness for hearing on  
25 April 1 or June 1 or May 1?

1 MR. TROSTEN: As we will come to later in the  
2 hearing, it is Applicant's proceeding that the hearing on  
3 this proceeding should commence on April 22, if that is  
4 responsive to your question.

5 CHAIRMAN JENSCH: Does that indicate that the  
6 facility will be constructed by that time?

7 MR. TROSTEN: No, sir, it doesn't mean that  
8 the facility will be completely constructed by that time.

9 Do you wish to have me state certain dates with  
10 respect to the status of the facility under construction?

11 CHAIRMAN JENSCH: No, just that one question is  
12 all I had in mind because one of the issues, as I recall it,  
13 is: Has the facility been constructed in accordance with the  
14 construction permit? And it implies in that statement that  
15 it has been completely constructed and we have to get that  
16 evidence some time.

17 If it isn't completely constructed, while we  
18 could periodically receive evidence from time to time, it  
19 would have to be postponed until the completion of the  
20 structure.

21 MR. TROSTEN: Later in this hearing we would be  
22 prepared to go into this in more detail with the witnesses.

23 CHAIRMAN JENSCH: Yes, I appreciate that, I just  
24 wanted some general idea.

25 MR. KNOTTS: I don't believe the Commission's

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1 rules require that the plant be 100 percent completed at the  
2 time of the initial decision. It requires that the plant be  
3 substantially complete. It would ordinarily be expected  
4 that there would be a number of outstanding items that would  
5 have to be verified by the Staff.

6 CHAIRMAN JENSCH: Yes, I think Boards kind of  
7 vary their interpretation and we just wondered how much the  
8 pressure was to get a hearing.

9 Well, the request of the Staff is granted to  
10 submit its answers to the question as well as the response  
11 to the motion. But it necessarily means that the Citizens  
12 Committee and the Applicant will have an opportunity to  
13 submit a written response either by way of comment or any  
14 further presentation that they desire in reference to  
15 whatever the Staff files on or before April 2nd. I don't think  
16 that the other parties can be foreclosed from comment in  
17 that regard.

18 Well, having reached that point, the Citizens  
19 Committee, will you proceed in reference to the joint  
20 motion on the question?

End #3

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1 MR. ROISMAN: Yes, thank you, Mr. Chairman.

2 Just to briefly review the nature of the motion,  
3 in conjunction with the preparation of questions to the  
4 Applicant in the round, one set of questions, we discussed  
5 with them before submitting questions a group of questions  
6 dealing with the issue of whether or not this nuclear power  
7 plant is needed.

8 The questions related to alternative sources of  
9 power, the availability of nuclear power as a reliable source  
10 of electricity with the need of Consolidated Edison, the cost  
11 of modifications that might be involved in making the plant  
12 safer than it is now, cleaner from an environmental standpoint,  
13 all of these questions related to issues which the Applicant  
14 felt were outside of the scope of this hearing and for purposes  
15 of shorthand rather than description, for this discussion this  
16 morning, I will simply refer to it as the question of the  
17 need for power and the ability of the nuclear plant to meet  
18 it.

19 We then put together a representative set of  
20 questions that sort of touched on the areas in which we were  
21 concerned but did not represent the full range of questions  
22 which we would ask if it were eventually determined that such  
23 questions were relevant.

24 It was done to bring the issue to the Board's  
25 attention without our spending substantial periods of time

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1 preparing detailed questions which ultimately might be  
2 ruled to be irrelevant because they dealt with an issue not  
3 properly before the Board.

4 We worked with the Applicant on this and eventually  
5 came up with a joint motion now before the Board. The fact  
6 that it is a joint motion was that we jointly wanted to have  
7 the issues deciding, not that we joined together in arguing  
8 the relevance.

9 The essence of our motion is fairly stated in our  
10 memorandum which is attached to (c) in the joint motion. It,  
11 is inevitable in the decision by this Board as to whether or  
12 not there is reasonable assurance this plant can be operated  
13 safely. There must be a judgment that the nuclear power  
14 plant is a beneficial device from the standpoint of the public  
15 interest.

16 I don't think that the Applicant has denied that  
17 that might be very well relevant in the sense of outside the  
18 context of the Atomic Energy Commission. I think there would  
19 be little doubt if environmental issues were permitted to be  
20 raised in this case, the discussion under the National  
21 Environmental Policy Act would involve the discussion of the  
22 need for electric power, the ability of the nuclear power  
23 plant to meet that need, the cost of the improvement weighed  
24 against the benefit to be gained, the cost of the plant weighed  
25 against the benefit to be obtained from the plant.

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1 So in a broad legal sense the questions we ask  
2 are relevant and the issue is did the Atomic Energy Act provide  
3 the Atomic Energy Commission and this Board with the ability  
4 to investigate that question. We think it did; we cited  
5 several sections of the Atomic Energy Act which indicates the  
6 Atomic Energy Commission is in a dual position.

7 Encouraging the development of nuclear power while  
8 at the same time regulating it. Therefore, the Commission and  
9 the Board, if you will, are somewhat schizophrenic. They  
10 are faced with the problem of having to say we believe this  
11 is a good thing they are doing.

12 This Board is not under a position of a grand  
13 jury attempting to indict, it is to try to help nuclear power  
14 do what it is presumably able to do and do it in the way that is  
15 safe.

16 In that context we believe the Board must in its  
17 own mind consider the benefit of nuclear power. That it  
18 would not permit even a fraction of a safety lapse, even the  
19 smallest possibility of a health hazard, if it didn't believe  
20 Indian Point No. 2 had some function to serve society.

21 We believe there are serious questions about  
22 whether or not Indian Point No. 2 will serve the functions it  
23 is alleged to serve. We think there is substantial doubt that  
24 nuclear power is the answer if there is a power crisis in the  
25 State of New York and we are not even certain that that power

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1 crisis is what it is led up to believe.

2 We believe there is a great demand for electricity  
3 but we are unclear whether or not there is a justifiable  
4 demand for electricity. We want to explore that question.

5 CHAIRMAN JENSCH: Did I understand you to state  
6 that you felt that the Board had a dual function of encouraging  
7 the production of power?

8 MR. ROISMAN: Yes, Mr. Chairman, in this sense.

9 Let me articulate it --

10 CHAIRMAN JENSCH: The reason I ask the question  
11 is this: As you know, the Atomic Energy Commission has been  
12 authorized by the Congress to create atomic safety and  
13 licensing boards but those boards must act under the Administra-  
14 tive Procedure Act, which is, as you know, the cardinal  
15 structure in the federal government for fair and independent  
16 hearings.

17 When I say independent, I mean independent of any  
18 expressions of here, for instance, the Atomic Energy  
19 Commission. We have this Atomic Safety and Licensing Board  
20 appear here in the same role and function as a hearing  
21 examiner and, as you know, a hearing examiner is designated  
22 by the Civil Service Commission to act under the Administrative  
23 Procedure Act in the consideration of the law and the facts  
24 as presented on the record in a public hearing procedure.

25 We have no other function than endeavoring to

ln5 1 provide a fair and impartial and independent consideration to  
2 the facts presented in a public hearing. I can say this, I  
3 am sure it is the feeling of this Board as it has been and  
4 all boards on which I have served, whatever happens to an  
5 application in a public hearing is of no consequence to a  
6 board.

7 We will make a decision based upon the fact of  
8 what the law entitles those facts to have. If it authorizes  
9 a certain result, either positive or negative, it will have  
10 to be in that form and that form only. Whether this grant  
11 ever operates, when this construction permit was held for  
12 Consolidated Edison, they were apprised at that time that they  
13 were in effect taking their chances to what happened at the  
14 operating permit hearing which is now being undertaken.

15 Whether this plant ever operates or not will never  
16 be known by this Board until all the facts are presented  
17 and they make a decision on this thing.

18 Whether there is any electric power, whether it  
19 is a kilowatt or 100 kilowatts or what, what level of power,  
20 the Board makes no decision on until all the facts are in.  
21 We have no function to see that power is produced. Our function  
22 is to have a determination that there is no undue risk to the  
23 health and safety of the public from projected operations at  
24 some power level from this plant.

25 We have no concern as to whether power is fed into

ln 6 1 the grid in this area at all. Ours is a safety consideration  
2 entirely.

3 Will you proceed?

4 MR. ROISMAN: Yes, Mr. Chairman.

5 With all due deference and I think in your last  
6 sentence you made the point we would make. Of course, we  
7 understand that the Board operates only in the limit of the  
8 law which is interpreting, but we think that law has built  
9 into it two facets, the benefit and the risk. The Board just  
10 spoke of the undue risk in issues that arise in the con-  
11 struction permit and the reasonable assurance which is the  
12 issue that arises in the operating license state.

13 Those concepts, whether a risk is undue or assurance  
14 is unreasonable, is all a comparison. We know and we will  
15 bring out in the hearing and I don't think the Staff or Applicant  
16 will deny that this plant will not operate with 100 percent  
17 absolutely iron-clad Good Housekeeping seal of approval safety.

18 There is some margin of risk; it is inevitable in  
19 the operation of the plant. There is a margin of risk which  
20 if it reaches that point this Board is authorized by law to  
21 say you may not have the operating license.

22 But independent of that there is a whole gradation  
23 of risks which are not required by law to mean this license  
24 be turned down but in which the Board must exercise its  
25 discretion in deciding are the assurances reasonable and is

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1 the risk undue and in that context the Board must have something  
2 to compare. It can't compare to the absolute case we know the  
3 plant couldn't meet the absolute.

4 If it compared to the absolute, there would not be  
5 any license because we won't reach that absolute level so it  
6 requires we contend away, a benefit against a burden.

7 If there is no benefit to be obtained from the  
8 operation of this nuclear plant, then I would submit as a  
9 legal matter, any risk is unreasonable. Any risk is undue.  
10 Because we are getting nothing for what we are giving up.

11 If one child might die as a result of routine  
12 activity from a normal or accident mode in this plant, that is  
13 too much of a price to pay unless something was gained by  
14 the operation of Indian Point No. 2.

15 I think the Atomic Energy Commission itself has  
16 acknowledged this in a recent regulation which was amended  
17 but amended in a way that suggested it was merely reconfirming  
18 the prior situation.

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1 In 10 CFR Part 20, Section 50.34(a) has been added  
2 to introduce into the Atomic Energy Regulations process something  
3 which the AEC suggests has always been, an obligation that the  
4 radioactive releases from a plant be kept "as low as practicable."  
5 The AEC determines that as follows:

6 The term "as low as practicable," as used in this  
7 Part means as low as practically achievable, taking into  
8 consideration the state of technology and the economics of  
9 improvement in relation to the benefit of the public health  
10 and safety and in relation to the utilization of atomic energy  
11 in the public interest.

12 Now, that regulation by its terms applies to the  
13 applications received on or after -- I believe it is January 2nd,  
14 1971 -- but in introducing the regulations the AEC said this  
15 interesting thing: The amendment would improve the framework  
16 in Part 20 for assuring that reasonable efforts made by all  
17 Commission-licensees to continue to keep exposure to radiation  
18 and releases of radioactivity in effluents as low as practicable.

19 In this very application and in the Technical  
20 Specifications a requirement that releases will be kept as low  
21 as practicable will be included. The Board has got to  
22 analyze in making that decision the benefit of nuclear power  
23 in the public interest in order to decide what is "as low as  
24 practicable." That issue has always been in these hearings  
25 and it will remain in there until the Congress chooses to

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1 say we make a legal judgment that nuclear power is good for the  
2 public anywhere any time so long as the X-level of risk is  
3 not violated. That, they have not done, and I think they have  
4 been wise.

5 They have left that judgment to the Commission, and  
6 the Commission has given that judgment to this Board. What we  
7 ask is an opportunity to persuade the Board that the level of  
8 risk that is built into this plant is unreasonable compared to  
9 the benefits which the public might obtain if the plant is  
10 permitted to operate.

11 That is the essence of the motion that we made and  
12 that is the essence of our position. We, of course, would  
13 reserve the right to respond to the statements made by the  
14 Staff on that matter.

15 CHAIRMAN JENSCH: Do you have any specific comment at  
16 this time in particular as to your specific questions? Do you  
17 want to analyze for us what you think each of your questions  
18 does?

19 MR. ROISMAN: If that would be helpful, Mr. Chairman,  
20 I would be glad to do that.

21 CHAIRMAN JENSCH: Or maybe you can speak in some  
22 general classification about your questions.

23 MR. ROISMAN: Well, all right.

24 Let me say this: One group of the questions deals  
25 with the question of the reliability of nuclear power. If the

1 Indian Point Plant is to do all of the things that the  
2 Applicant has, through the press, if not in this hearing,  
3 claimed that it will do, it has to be a steady source of power.  
4 It is of absolutely no value to know that on occasion  
5 Indian Point No. 2 will operate and when it does it can deliver  
6 800 megawatts of electricity to the Con Edison grid.

7 We believe if we examine the record, the history of  
8 nuclear power plants, of Indian Point #1, there are no plants  
9 now operating that I know of of the size of Indian Point #2,  
10 but even one close to that size, we find that out-goes are  
11 unavoidable, in a much higher percentage than if this were a  
12 clean, low-sulfur fossil fuel plant, or an appropriately  
13 located hydrogen plant.

14 In fact, we would prove that there is evidence to  
15 show that the Storm King Pump Storage Project, a project of  
16 massive potential environmental damage to the Hudson River, is  
17 being built at least in part if not to a large part because  
18 of the inevitable unreliability of this plant which represents  
19 such a large piece of Con Ed's total electrical capacity and  
20 that therefore there are certain additional burdens associated  
21 with operating a plant that does not have the high level of  
22 reliability associated with the more tried-and-true type plant.

23 Now, it is not my intention of getting into the  
24 pros and cons of that issue. We want to adduce evidence on that  
25 and if we are successful we think that would be a relevant

1 issue.

2 CHAIRMAN JENSCH: Is there anything in the FSAR or  
3 any of the application materials filed by Consolidated Edison  
4 as to the need or reliability of power from this proposed  
5 plant?

6 MR. ROISMAN: To my knowledge, Mr. Chairman, in the  
7 way you just put it, no. There are facts in the FSAR which  
8 would relate to this question. Information on, for instance,  
9 the fact that fuel loading has to take place in a certain  
10 period of time and the amount of time that takes. Evidence  
11 regarding procedures as to trips and therefore it is turned  
12 off. In that sense, there is evidence that goes to the question  
13 that the Applicant at least to my knowledge -- and I cannot  
14 say I have read every word of the FSAR -- has not made a  
15 statement in there that power is "needed" and that the plant  
16 is going to fulfill that need.

17 I would say, however, that the opening statement of  
18 the Applicant at this hearing when we first began back in  
19 December was concerned exclusively with the question of the need  
20 for power. At the time a long discussion was given as to why  
21 this plant was needed to meet power of Consolidated Edison.  
22 I know the Applicant would say that that was irrelevant. But  
23 I know the discussion was not made that it was irrelevant.

24 At the discussion this morning, Mr. Trosten stood  
25 before the Board and said to the Board we are getting pressure

1 to get this hearing completed and get this plant on line.  
2 That was given as a relevant consideration in the Board's  
3 determinations as to whether to grant the Staff an extension  
4 of time. When we later discuss today, when the hearing will  
5 begin, that will be raised as a relevant consideration.

6 The Applicant has constantly introduced that  
7 concept into the hearing. It hangs over the hearing room  
8 every day. It is constantly being referred to, the need for  
9 power as being used as the basis for a number of decisions.

10 In addition, of course, the determination as to  
11 whether or not the releases will be "as low as practicable,"  
12 certainly will include that. Now, I can't point to a specific  
13 part of the FSAR and maybe I will make an attempt to  
14 examine that a second time in response to the Staff's statement  
15 to see if I can find language to that effect. But I don't  
16 think that is critical. If the Applicant in advance felt this  
17 was an issue not relevant it certainly would have been care-  
18 ful in the FSAR to make sure they didn't mention it and I have  
19 no reason to believe they mentioned it inadvertently in  
20 there or in the Application.

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1 CHAIRMAN JENSCH: Well, if there isn't any need of  
2 power then there is no question of hurrying into the evidentiary  
3 hearing, is there?

4 MR. ROISMAN: No, but the question of need may  
5 depend on the eye of the beholder. If there was no question of  
6 safety they wouldn't have asked for an operating license.  
7 But we look at it to determine that there is a question of  
8 safety.

9 I am not sure they know whether or not this nuclear  
10 power plant is the answer to the need.

11 Just as an example of the kind of information we  
12 are interested in adducing, during the period from April of  
13 1970 through January of 1971 there were a number of "brown  
14 outs" periods of time during which Consolidated Edison Company  
15 wasn't able to deliver full voltage to all of its customers.  
16 During that same period of time Indian Point stood idle, 300-  
17 some odd megawatts of electric power. We think that is a very  
18 important consideration.

19 If this plant is to be built to provide power, we  
20 have to know can it do the job or is it, as the application  
21 stated, an application for an experimental reactor? Research  
22 development?

23 This application is under Section 104(b) which  
24 at the time the application was filed said this was to be a  
25 research reactor.

1           Now, we don't deny that would be a relevant con-  
2 sideration the Applicant could raise. They could say, "Well,  
3 it may be this plant can't provide the needs of the city  
4 for purposes of electric power but we will get tremendous  
5 knowledge from the research and development."

6           I think that would be at least a valid argument  
7 they could make and we could then contest as to whether or  
8 not it could do that job or whether it was necessary for that  
9 purpose or would some other reactor serve all of the research  
10 and development functions.

11           So that is one area of the kind of questions with  
12 which we are concerned.

13           We are also concerned about the alternatives to  
14 this plant. Again if we begin with the assumption that a  
15 certain amount of electric power is needed by the State of  
16 New York or the area covered by Consolidated Edison, we have  
17 to find out, all right, when does that need arise? Is it a  
18 need today, next summer, a year from now, two years from now?

19           My understanding is that the need increases, that  
20 that is the Applicant's position, that it is constantly  
21 increasing. We would look to see if each one of those  
22 steps could be met by some alternative other than this  
23 nuclear plant and whether an ultimate solution to the problem  
24 can be obtained two or three years down the road when the  
25 available alternatives that might exist in the interim run out.

1 That goes to the request of whether Con Ed is too far  
2 committed to this plant, because cutting back on the demand,  
3 looking at who uses electricity and allocating that resource  
4 the same way we allocate other natural resources, like  
5 clean water and clean air, whether or not that resource  
6 should be cut back.

7 CHAIRMAN JENSCH: You say how we allocate clean  
8 water and clean air?

9 MR. ROISMAN: That is right. We are saying  
10 automobiles may not operate after 1975 unless they are able  
11 to produce a certain amount, a certain very low amount of  
12 pollutants so that the amount of clean air we have to breathe  
13 is retained at a certain level.

14 We are allocating water in the same sense. There  
15 are a few still left in the country of clean flowing streams.  
16 There are rivers that are not so polluted that they are  
17 uninhabited by fish. We are trying to preserve those.

18 The decision is: Shall we take the clean water  
19 in the Hudson River and run it up to the top of the mountain  
20 for a pump storage project which may do damage to the fish or  
21 should we allocate this water to keep the river alive because  
22 it is an important natural resource?

23 We say electricity is inevitably one of those  
24 type of resources, if you will. WE use basic natural resources.  
25 We use rain, land, water, air. We produce electricity by

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1 using those things. In using those, it is a question of  
2 allocation.

3 Now, if that electricity is needed to operate  
4 certain types of facilities in the State of New York,  
5 manufacturing operations which are not in the best public  
6 interest, then it seems to me that is something that needs  
7 to be examined before we decide whether the risk is outweighed  
8 by the benefits.

9 CHAIRMAN JENSCH: That is a little different type  
10 of allocation, I think, then we think of, say the oil import,  
11 or allocating the supply of something from a gas pipeline  
12 or that type of thing. But in any event it is your theory  
13 that by the endeavor to clean up the river and clean up the  
14 air that we are allocating it by hoping to make it better;  
15 is that correct?

16 MR. ROISMAN: No, we decided we should use it.  
17 The Corps of Engineers is putting into operation a program  
18 for permitting the use of water which they control, mostly  
19 the interstate waters. They are deciding who should make clean  
20 water dirty if it is to be dirty at all. They are allocating  
21 that resource. They are giving certain chemical companies  
22 the right to make it dirty and they are claiming that the bene-  
23 fit obtained from the chemical plant is worth the price being  
24 paid.

25 Now, we never did that before. Whether by the

1 failure of Congress or administrative agencies, we just pro-  
2 ceeded ahead as though the best things in life are free and  
3 now the population and state of technology has reached  
4 a point where it is necessary to begin the allocation process.  
5 If we take atomic energy and take it out of that sphere  
6 and put it over here, it seems to me it would make it very,  
7 very difficult to make any kind of rational judgment about  
8 the allocations of resources.

9 We claim in this case that a relevant consideration  
10 and I stress again if the National Environmental Policy Act  
11 were to apply to this case, in other words if the second  
12 motion that the Board will hear this morning is accepted by  
13 the Board, those issues will come in.

14 In fact this motion would be unnecessary. Those are  
15 built into the concept of exploration of alternatives. I  
16 think that covers sort of the broad range.

17 We do have some questions in here regarding the  
18 cost. That is how much more would it cost to add additional  
19 safety to the plant to raise the level of safety and we want  
20 to know that in the context of cost to the consumer, how much  
21 more will electric power from this plant cost if we added an  
22 additional safety feature as a way of finding out whether the  
23 price of the safety feature would be the loss of the electric  
24 to the public because they couldn't afford it, the price would  
25 get too high. We want to know whether or not the price

1 as it will now operate is too high. Will the cost of this  
2 plant have to be absorbed by consumers higher than what is  
3 beneficial and the net result will be that it will price  
4 electricity out of the consumer market? There is a cost  
5 benefit in the dollars and cents cost as well that is  
6 involved in this question.

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1 CHAIRMAN JENSCH: Is it a fair characterization to  
2 say that your questions are directed in the main to explicit  
3 or implied assertions by the Applicant affecting this plant.

4 (a) it is the benefit; (b) the cost and (c) the  
5 safety, that sort of thing?

6 MR. ROISMAN: Yes.

7 CHAIRMAN JENSCH: Those are questions already  
8 raised by the Applicant either directly or indirectly, is that  
9 true?

10 MR. ROISMAN: That is right and even if not raised,  
11 by them required to be considered by this Board.

12 CHAIRMAN JENSCH: Before we ask the Applicant to  
13 respond, I would like to state to the other Intervenors,  
14 including the Hudson River Fishermen's Association and the  
15 Atomic Energy Council, if either or both have any comments  
16 respecting these matters we will expect both of you to rise  
17 and assert them without specific counsel.

18 I take it the lack of any comment heretofore from  
19 either or both of you with respect to the extension of time  
20 requested by the Staff indicate that you had no particular  
21 comment to make, is that correct?

22 MR. SCINTO: Well, we had no objection to make,  
23 Mr. Chairman.

24 CHAIRMAN JENSCH: Very well. Hereafter if we  
25 don't specifically call you, you feel free to interject.

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1 Mr. Trosten.

2 MR. TROSTEN: Thank you. We presented this joint  
3 motion to the Board in an effort to present in a disciplined  
4 and early way a fundamental question that has arisen and a  
5 fundamental issue that has arisen between the Intervenor's  
6 Citizens Committee Protection for the Environmental and the  
7 Applicant.

8 The Intervenor proposes to introduce evidence into  
9 this hearing concerning a number of matters such as the avail-  
10 ability of electric power from Indian Point 2 to meet  
11 anticipated demands, the availability of alternatives to the  
12 operation of Indian Point 2 and also the expected cost of  
13 operation of Indian Point 2.

14 Now, I would like to make it entirely clear at  
15 the outset that the Applicant feels any fair evaluation of the  
16 viability of Indian Point 2 or the matter of whether the benefits  
17 of Indian Point 2 to the people of the City of New York and  
18 the metropolitan area outweigh the risk that may be associated  
19 with the operation of Indian Point 2.

20 We are entirely clear that any such evaluations  
21 show that the benefits clearly outweigh the risks and also  
22 that this plant will be a reliable source of power and will  
23 serve the need of the city and the metropolitan area.

24 But that isn't the question, Mr. Chairman, before  
25 the Board. What the Intervenor is in effect proposing to the

In3 1 Board is that this Board evaluate the benefits of this  
2 particular facility, Indian Point 2, as opposed to any risks  
3 that might be associated with the operation of this facility.

4 We submit, Mr. Chairman, in making this objection to  
5 the Board the Intervenor has completely misconstrued the terms  
6 of the Atomic Energy Act of 1954, the Administrative Procedure  
7 Act and the Atomic Energy Commission's regulations. I would  
8 like to emphasize that this question is one that is arising  
9 under the Atomic Energy Act of 1954, it is not one arising under  
10 legislation such as the National Environmental Policy Act of  
11 1969.

12 Hence the Board is faced with the question of  
13 what the Atomic Energy Act and the regulations mean. We sub-  
14 mit, Mr. Chairman, in enacting the Atomic Energy Act of 1954  
15 the Congress of the United States and the President determined  
16 the general benefits to be derived by people in this country,  
17 the people in any particular area from the development of nuclear  
18 power plants.

19 Now, it could be that Congress should not have  
20 written the Atomic Energy Act of 1954 the way it did. Perhaps  
21 counsel for the Intervenor is correct, that it might have been  
22 preferable if Congress had written this legislation in such a  
23 way that boards or hearing examiners established under the  
24 Commission's regulations would be empowered to weighing the  
25 benefits and risks of a particular facility.

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1 But we submit, Mr. Chairman, that that is not what  
2 Congress did in the Atomic Energy Act of 1954, nor is it what  
3 the Atomic Energy Commission's regulations have done. In  
4 looking through the Atomic Energy Commission's regulations, it  
5 is apparent to us that none of the information of the sort  
6 that the Intervenor suggests as relevant in this proceeding  
7 is required to be submitted by an applicant for an operating  
8 license or for a construction permit.

9 What is required to be submitted is evidence  
10 concerning the safety of the plant, the safeguards that are  
11 available and all types of evidence sufficient to enable this  
12 Board to draw a judgment as to whether the risks of this  
13 facility, in light of the best technical information that is  
14 available, the best technical reviews that are available, is  
15 unreasonable.

16 This is a technical safety judgment which is  
17 intended that this Board make and it is not unlike other  
18 safety judgments that must be drawn.

19 CHAIRMAN JENSCH: May I interrupt a moment?

20 As I understood Intervenors' counsel's statement,  
21 I didn't understand that he was contesting the determination  
22 by the Congress as reflected by the Atomic Energy Act as to  
23 what should be done. But as I understood his arguments, under  
24 the Act that is passed and the regulations, when the phrase is,  
25 as stated in the issue, is there an undue risk to the health

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and safety of the public, the phrase "undue risk" means a measurement that is derived perhaps in part from a comparison.

MR. TROSTEN: Yes, sir. I understood the Intervention to make that point and we submit that the phrase "undue risk" or "reasonable assurance" is not a direction to the Atomic Safety and Licensing Board to compare the risk of a particular plant with the particular benefits of that plant.

We submit that to make that interpretation of the Atomic Energy Act would indeed be a detrimental interpretation and lead to highly detrimental results.

For example --

CHAIRMAN JENSCH: I don't have so much an argument with your conclusions but the premise. If you say what is the undue risk, what comparison has to be made; we will take the consequences later. What is the comparison?

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1 MR. TROSTEN: The comparison that I believe the Board  
2 is required to make is whether the probability of harm, the  
3 level of risk associated with a particular activity in the  
4 light of the best evidence of the likelihood of an incident  
5 occurring is undue or unreasonable. This is the sort of judg-  
6 ment, Mr. Chairman, and it is essentially a technical  
7 judgment that the Board is required to make. This is the  
8 balancing that is required to be made by the Board as it makes  
9 the determination whether there is reasonable assurance.

10 It is a matter of probability. It is a matter of  
11 evidence as to what other facility is going to operate, how it  
12 is constructed, and so forth.

13 CHAIRMAN JENSCH: Would it be an undue risk to  
14 involve such a thing as this:

15 Supposing the New York Mets are playing at Shea  
16 Stadium with 100,000 people and a 747 dips low and flies into  
17 that stadium, or is it a risk comparison to high voltage wires  
18 crossing a railroad track and a steel train goes underneath  
19 that at the time the wire breaks and electrifies the train?  
20 Is it the risk as against other remote but possible malfunctions,  
21 rather than a risk versus benefit type of comparison?

22 MR. TROSTEN: I would say that it is a comparison of  
23 risk compared to other risks of malfunctions and risks that  
24 may be incurred in other areas would be perhaps an apt compari-  
25 son to draw. I certainly think this would be a far more -- this

1 would be an appropriate approach to the problem as opposed to  
2 evaluating the advantage of a particular use of a facility  
3 versus the risk that may be involved in operation of that  
4 facility.

5 CHAIRMAN JENSCH: The Congress has said there can  
6 be a utilization of nuclear power if it is determined that  
7 there is no undue risk in that comparison sense you have  
8 described. Is that your view?

9 MR. TROSTEN: Yes, it is my view that nuclear power  
10 plants may be built provided that an examination of a particular  
11 power plant leads the cognizant authorities to conclude that  
12 there is reasonable assurance that that plant will not harm the  
13 public.

14 CHAIRMAN JENSCH: Will you direct your attention  
15 to changing the presentation to the assertion by intervenor's  
16 counsel that all he is doing is endeavoring to answer your  
17 implied or explicit assertions as to the need of power or the  
18 benefit of power and other aspects as to cost and so forth?

19 MR. TROSTEN: Yes, sir, Mr. Chairman, I will be  
20 happy do do that.

21 As I said the Applicant acutely feels its responsi-  
22 bility to the people of this area to supply electric power on  
23 a timely basis. It acutely feels the necessity for building  
24 and operating this plant as soon as it can be shown -- and we  
25 believe it can be shown -- that there will be reasonable

1 assurance that the public will not be harmed. We want to  
2 proceed to make that showing so that this plant can operate  
3 and satisfy the needs of the public, and it is in no sense  
4 being suggested that the safety review of this plant should  
5 be shortcut in any way, notwithstanding the acute need for this  
6 facility to serve the power needs.

7 I would like to take exception to an observation of  
8 Mr. Roisman that there are contained in our -- I am sorry,  
9 he is responding to assertions made in our application that  
10 the plant is needed or that the benefits will outweigh the  
11 risks or that the costs of the plant are appropriate.

12 Mr. Chairman, there is a wealth of information in  
13 the application that might under some circumstances be relevant  
14 to the question. There is information concerning the use of  
15 the plant -- the use that the plant will be put to. There  
16 is certain types of information concerning cost. There are  
17 certain other types of information in this application that  
18 certainly if this issue were appropriate might be relevant  
19 to such a determination. But the Applicant has never intro-  
20 duced into evidence in support of the assertion that the  
21 benefits outweigh the risk or that costs are appropriate,  
22 any evidence in this FSAR or otherwise.

23 CHAIRMAN JENSCH: Will you proceed.

24 MR. TROSTEN: Yes, sir. I would like to make two  
25 other points concerning the matter of reasonable assurance.

1 To adopt the intervenor's point of view would be  
2 to empower the Board to determine if a particular plant were  
3 needed, it would be permissible to build and operate that  
4 plant under circumstances that it might not be safe. The  
5 Applicant does not believe that is either an approach by the  
6 Atomic Energy Act Regulations or a desirable approach.

7 I would like to add one concluding point, Mr.  
8 Chairman, and that is that I believe certain of the points  
9 raised by the intervenors on certain matters on which he pro-  
10 poses to introduce evidence are clearly not appropriate for  
11 consideration by this Board at the operating license stage.  
12 Even if these points were relevant at the construction  
13 permit stage, which we believe they were not relevant at the  
14 construction permit stage, it would be inappropriate to  
15 consider these matters at the operating license stage because  
16 they make the fundamental decision pertaining to siting and  
17 design criteria which have been and should have been resolved  
18 at the construction permit stage.

19 So for this additional reason we oppose the  
20 introduction of evidence in this hearing on these matters.

21 Mr. Chairman, that concludes my presentation.

22 CHAIRMAN JENSCH: Before you sit down may I inquire,  
23 you mentioned costs in your FSAR. Were those submitted to  
24 show that you had a financial capability of covering those and  
25 not as alternative considerations for other power sources?

1 MR. TROSTEN: Yes, sir, they were submitted in  
2 response to the question that the Applicant demonstrates  
3 financial qualifications to operate the plant.

4 CHAIRMAN JENSCH: Well, the Congress declared that  
5 atomic energy is capable of application for peaceful as well  
6 as for military purposes. It says the Congress of the United  
7 States hereby makes the following findings concerning the  
8 development, use, and control of atomic energy:

9 There are several specified findings, the first of  
10 which has to do with military purposes. Then:

11 "The processing and utilization of source,  
12 byproduct, and special nuclear material affect interstate  
13 and foreign commerce and must be regulated in the  
14 national interest.

15 "The processing and utilization of source,  
16 byproduct, and special nuclear material must be regu-  
17 lated in the national interest and in order to provide  
18 for the common defense and security and to protect  
19 the health and safety of the public.

20 "Source and special nuclear material,  
21 production facilities, and utilization facilities are  
22 affected with the public interest, and regulation by  
23 the United States of the production and utilization  
24 of atomic energy and of the facilities used in connec-  
25 tion therewith is necessary in the national interest

1 to assure the common defense and security and to  
2 protect the health and safety of the public.

3 "The necessity for protection against possible  
4 interstate damage occurring from the operation  
5 of facilities or the production or utilization of source  
6 or special nuclear material places the operation of  
7 those facilities in interstate commerce for the purposes  
8 of this Act.

9 "Funds of the United States may be provided  
10 for the development and use of atomic energy under  
11 conditions which will provide for the common defense  
12 and security and promote the general welfare.

13 "In order to protect the public and to  
14 encourage the development of the atomic energy industry,  
15 in the interest of the general welfare and of the  
16 common defense and security, the United States may make  
17 funds available for a portion of the damages suffered  
18 by the public from nuclear incidents, and may limit  
19 the liability of those persons liable for such losses."

20 That was the complete reading of the findings that the  
21 Congress had made about atomic energy. I don't find in the  
22 Act a definition of undue risk. But let me inquire as to the  
23 point you made about what was covered by the construction  
24 permit.

25 As I recall it, the regulations for the construction  
permit states that the applicant can bring in general design

1 criteria which will -- in effect this is another regulation,  
2 but it says -- the application of it has been somewhat along  
3 this line -- that it will permit an applicant, by showing general  
4 design criteria to develop the specific design in light of  
5 the advancing technology. I wonder if that doesn't necessarily  
6 open the subject as to the particular design when the facility  
7 has been constructed because it has been only general design  
8 up to that time.

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1 MR. TROSTEN: Mr. Chairman, I believe it is  
2 appropriate at the operating license stage to inquire into  
3 the adequacy of the particular design, particularly since  
4 these designs were not available at the construction  
5 permit stage. But nevertheless we are dealing here with a  
6 two-stage licensing process in which certain fundamental  
7 decisions are made and must be made at the construction permit  
8 stage. We have characterized these generally as matters of  
9 siting and basic design or fundamental design principles  
10 or criteria.

11 We submit, Mr. Chairman, that in some respects  
12 the question of the Intervenor deal with these areas  
13 which are matters properly resolved at the construction  
14 permit stage and for that reason we believe it is inappropriate  
15 for the Intervenor to raise these questions at the operating  
16 license stage.

17 CHAIRMAN JENSCH: It is your statement you can't pick  
18 up the nuclear plant and move it; is that in substance  
19 what you are saying? Once the site has been selected within the  
20 general realm of meteorology known at that time, you wouldn't  
21 expect to move this plant?

22 MR. TROSTEN: It would be very difficult, Mr.  
23 Chairman.

24 CHAIRMAN JENSCH: Well, the siting necessarily  
25 involves some consideration of meteorology and of course that

1 is in a constant stage of development, as I understand it and  
2 the knowledge is subject to great enlargement, even though  
3 the siting aspect may be considered in the construction  
4 permit stage, it can be considered at the operating license  
5 stage as well; isn't that true?

6 MR. TROSTEN: I believe questions concerning  
7 changes in meteorology might be open at the operating license  
8 stage, I don't know that I would concede that the entire  
9 subject could be raised.

10 CHAIRMAN JENSCH: I guess it is a question of  
11 definition. There may be some unresolved matters in the  
12 construction permit stage. Have you concluded?

13 MR. TROSTEN: I have.

14 CHAIRMAN JENSCH: Does the Staff desire to speak to  
15 these matters?

16 MR. KARMAN: No, Mr. Chairman, we will respond in  
17 writing.

18 CHAIRMAN JENSCH: Very well.

19 Atomic Energy Council of the State of New York?

20 MR. SCINTO: Not at this time, Mr. Chairman.

21 However I think I would like to join at this time and request  
22 the opportunity to file a response to these questions by  
23 April 2nd, too.

24 CHAIRMAN JENSCH: Very well, that would necessarily  
25 permit the other parties to file some responding document  
after you have submitted your answer to the motions.

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1 The Hudson River Fishermen's Association?

2 MR. MC BETH: No comment at this time, Mr.  
3 Chairman, but I would also like to file something additional.

4 MR. TROSTEN: I think it only appropriate at this  
5 time to reiterate my objection to the now expanded request for  
6 additional time.

7 CHAIRMAN JENSCH: Your objection will be noted.

8 MR. ROISMAN: For the sake of consistency I would  
9 also like to do that. I think much of this is hashed out  
10 in the written documents to be considered but there  
11 are two points also that I would like to make.

12 CHAIRMAN JENSCH: Don't overlook any assertions  
13 you have put in your written document, I think we would be  
14 glad to have you discuss them at this time, in case we have  
15 not discerned your points as clearly as you can now express  
16 them.

17 MR. ROISMAN: I think the Chair only too clearly  
18 in asking questions of Applicant's counsel and discussing  
19 the Shea Stadium tragedy --

20 CHAIRMAN JENSCH: Remote, unlikely, incredible  
21 but possible.

22 MR. ROISMAN: That is right. When you consider the  
23 incredible possibility that the Mets could continue to  
24 fill the stadium, I don't know which incredible possibility  
25 you are talking about. But in connection with the discussion

1 of undue risk, I understand you were saying that the concept  
2 of undue risk that you asked the Applicant that they thought  
3 might be applicable here, is, let's examine the other risks  
4 that we take in life, as you will.

5 What is the risk of that happening as compared to  
6 the risk of this plant or compared to the risk of the cancer  
7 developing as a result of the level of releases that come out  
8 of the plant? I don't say that is an irrelevant question to  
9 ask but I don't think it answers the question as to whether  
10 the risk is undue. It merely gives us one way of comparing.

11 Let us say, for instance, that the chance of the  
12 747 striking Shea Stadium is 1 in 2 million and the chance of  
13 the accident occurring at this nuclear power plant that would  
14 destroy the City of New York is 2 in 2 million. I don't  
15 know where the Board has gotten now except to say that one  
16 accident possibility is twice as likely as the other and they  
17 are both over in that area that we referred to as remote.

18 The Board still has to make a judgment as to whether  
19 2 in 2 million is undue or not undue.

20 There are lots of risks which we take in society  
21 everyday and I think if we do one of these probability  
22 analyses, I think that is difficult to do but I am told one  
23 has been done with regard to a nuclear power plant. I think  
24 the Dresden Plant. Some attempt was made to come up with  
25 a probability.

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1           There are things: The driving of an automobile  
2 is considerably more unsafe in terms of the probabilities you  
3 talked about and the probabilities associated with the nuclear  
4 accident at a properly designed nuclear power plant. But the  
5 consequences of the accident have to be taken into account.  
6 What happens if they are wrong, if the whole emergency core  
7 cooling system when you really put it to the test just doesn't  
8 work and the containment splits and you let out an extreme  
9 amount of fissionable material? The consequences are greater  
10 than the driving of an automobile.

11           At the same time there are certain benefits involved.  
12 We accept certain risks for certain benefits. We are by  
13 nature a somewhat conservative race, human beings.

14           I think if the Board found out -- if it got the  
15 probabilities for every single possible accident in the  
16 country and laid it along side and computed probability on  
17 this plant, it still couldn't know whether the probability  
18 here were undue or not undue. A lot would be more risky,  
19 some would be considerably less. But what would we know.  
20 We still have to make that value judgment of what is undue and  
21 that value judgment is what it is all about.

22           CHAIRMAN JENSCH: May I interrupt?

23           MR. ROISMAN: Yes.

24           CHAIRMAN JENSCH: You say there are many risks  
25 in society today, driving an automobile, I suppose also  
crossing the street.

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1           You know that chlorine gas that is transported in  
2 railroad tank cars sometimes comes to our attention, the car  
3 seems to go off the track at some of these remote locations,  
4 fortunately, so far. They have had to evacuate many towns  
5 when tank cars have gone off the track. I think there have  
6 been, in fact, some explosions and towns have had to be  
7 vacated for two or three days until the contamination could  
8 be removed.

9           Then you take the gas pipeline. I say this with  
10 reference to all of the industries associated, it is not any  
11 criticism that these things occur. But some of these  
12 pipelines carrying as are a considerable size, 30 inches and  
13 36 inches in diameter and they are going right through  
14 residential areas and we know once in a while there is a  
15 weld that might not be quite as strong and it starts to leak  
16 and there is the creeping activity of the break and pretty  
17 soon we have a conflagration. There may even be property  
18 destroyed and a person injured and maybe also evacuation.

19           I suppose those are also within the risks you are  
20 talking about that society takes every day because they  
21 want natural gas for many things or they want chlorine gas  
22 or the chlorine liquids to maybe put in the Hudson River  
23 water or the aquaduct water that serves New York City.

24           So we have to have chlorine to help the water purity  
25 or usability and I wonder if it isn't undue risk.

1 I am sorry I can't find it, I don't think it is in  
2 the statute.

3 MR. ROISMAN: To my understanding it isn't either,  
4 Mr. Chairman.

5 CHAIRMAN JENSCH: Has anybody ever proposed an  
6 amendment to the Atomic Energy Act to ask Congress to define  
7 "undue risk"?

8 MR. ROISMAN: I understand Senator Rubelle  
9 is considering making Congress consider the question that the  
10 risk is undue and to ask Congress to put a five-year  
11 moratorium on nuclear plants. To that extent I would say  
12 any risk would be undue and I think there are Congressmen  
13 who would like to put in exactly opposite legislation in.  
14 But I don't know of any specific piece of legislation that  
15 attempts to define it and I think probably in the context  
16 of the relationship between Congress and the administrative  
17 body, that is the kind of question that needs to be referred.

18 There are too many variables. It is a different  
19 risk for a plant here in Peekskill near New York City than  
20 it is for a plant out in the low population area. To some  
21 extent that would acknowledge the way the plants are designed.  
22 That is my understanding of what TID-14844 is really all  
23 about. It is saying that distance is a sort of built-in  
24 safety factor which can be compromised, if you will, in  
25 exchange for certain "engineered" safety features if plants

1 at one location are permitted to operate at one location with  
2 less safety features than others. I think this has a lot  
3 designed for it because of the unique location of the  
4 Indian Point Plant.

5 I will take this opportunity to move to my other  
6 point, which is the construction stage as opposed to the  
7 operating license stage.

End #9

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1 CHAIRMAN JENSCH: Are you saying now that if you  
2 were or could be satisfied that the engineered safeguards  
3 built in this plant are adequate that it will eliminate the  
4 undue risk situation that you have in mind?

5 MR. ROISMAN: No, I do not mean to suggest that.  
6 Although, if we could be satisfied with that we would be one  
7 group of Intervenors in a different status than any group in  
8 the country. We are still looking for that satisfaction and  
9 I think the answer would lie in the Salt Flats in Idaho where  
10 the tests are being conducted and maybe even those aren't  
11 going to give us the answer as to whether or not these engineered  
12 safety features are engineered or safety.

13 And whether they make up for distance. All I mean  
14 to suggest is that the engineered safety features that go into  
15 the plant are part of the decision as to whether the risk is  
16 undue and it varies from plant to plant. It would be difficult  
17 for Congress to attempt to lay down some standard for legis-  
18 lation that could meaningfully dispose of this whole issue.

19 You supposedly have a set of criteria and you met  
20 those that would deal with the credibility. What additional  
21 safety features do you need in order to cover incredible  
22 possibilities and you go on like that. That is obviously  
23 not the kind of thing that Congress does.

24 I think they did the right thing in passing that  
25 to the AEC and I think they did the right thing in passing

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1 it to the Board.

2 But we think everything got passed. We don't think  
3 anything was prejudged even if it is a worthy subject of  
4 exploration. All we should do is develop guidelines consistent  
5 with no undue risk and benefit to the health and safety of  
6 the public.

7 CHAIRMAN JENSCH: Well, would you go to the next  
8 section that deals with the findings of what Congress said  
9 that hereby makes the following findings concerning the  
10 development, use and control of atomic energy and then those,  
11 eight, I believe, items that I read.

12 Especially in the light of the Section 1 declaration  
13 that atomic energy is capable of application for peaceful as  
14 well as military purposes. Do you feel that the Congress has  
15 in a sense adjudged that there is a benefit if the finding can  
16 be made of no undue risk. That is within the scope of the  
17 regulations that have been formulated by the Atomic Energy  
18 Commission?

19 MR. ROISMAN: No, I don't.

20 Let me begin with Section 1. Atomic energy is  
21 capable of application for peaceful as well as military purposes.  
22 That is a statement that can be used, it is not a statement one  
23 way or another whether it is in itself beneficial and whether  
24 the specific use suggested would be the right one.

25 It, therefore, declared that the policy of the

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1 United States should be that the development and use of atomic  
2 energy shall be directed as to increase world peace, et cetera.

3 What we are asking is is this Indian Point No. 2  
4 a plant which is being directed towards that aim and the  
5 general question of the general welfare is exactly what we are  
6 talking about.

7 What is the general welfare benefit of a plant that  
8 isn't needed? This Section 1 and 2 and 3 are fairly standard  
9 kinds of broad phrases that Congress puts in to indicate the  
10 relevant consideration, not to prejudge the issue. I think ,  
11 it would be an improper reason to suggest, nor do I find  
12 anything in here that would confirm that, that they have made  
13 the judgment that this Board can decide that this plant is  
14 beneficial simply because Congress has declared this plant  
15 and this license is beneficial to the general welfare.

16 In fact, you could say the opposite, they said you  
17 must decide whether it is beneficial to the general welfare.

18 CHAIRMAN JENSCH: May I ask the Applicant's  
19 counsel, on what section of the Atomic Energy Act do you  
20 rely that indicate that Congress has declared there is a benefit  
21 from the use of atomic energy?

22 MR. TROSTEN: I would say I would rely on Section 1  
23 of the Atomic Energy Act and Section 2 and also the general  
24 provisions in the Atomic Energy Act relating to the licensing  
25 of nuclear reactors.

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1 I would say these sections taken together and  
2 the Atomic Energy Act taken as a whole represents a clear  
3 determination by Congress that there is a benefit to be  
4 derived by the people of this country from the construction of  
5 nuclear power plants and the operation of nuclear power plants  
6 provided that the individual plants can be determined to be  
7 operated without unreasonable risk or with reasonable assurance  
8 of public safety and the determination of that point has been  
9 assigned by Congress to an administrative agency, the Atomic  
10 Energy Commission.

11 The flushing out of that kind of determination is  
12 what the AEC's regulatory processes are about, the Staff review,  
13 the ACRS review, all of the information provided by the  
14 Applicant to the Staff and finally the review by this Atomic  
15 Safety and Licensing Board.

16 CHAIRMAN JENSCH: Section 104(b), under which this  
17 application by Con Edison was filed reads, the Commission is  
18 authorized to issue licenses to persons applying therefor for  
19 utilization or production facilities involved in the conduct  
20 of research and development activities leading to the demon-  
21 stration of the practical value of such facilities for  
22 industrial or commercial purposes.

23 In issuing licenses under this subsection, the  
24 Commission shall impose the minimum amount of such regulations  
25 and terms of license as will permit the Commission to fulfill

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1 its obligation under this Act to promote the common defense  
2 and security and to protect the health and safety of the public  
3 and will be compatible with the regulations and terms of a  
4 license which will imply in the event a commercial license  
5 would be later issued in connection with that type of facility.

6 In issuance of that license, consideration should  
7 be given to those types of facilities that will in the  
8 Commission's opinion lead to the advances of the application  
9 of atomic energy for major commercial purposes.

10 Now, as I understand Intervenors' counsel states  
11 even that does not say there is a benefit unless there is  
12 a finding that the health and safety of the public will be  
13 protected and there will be no undue risk to the health and  
14 safety of the public.

15 Now, where is the benefit aspect specifically for  
16 Section 101, 2 or 104(b).

17 MR. TROSTEN: Mr. Chairman, the language which you  
18 are reading from, the Atomic Energy Act, prior to its recent  
19 amendment in no way suggests to our view that an atomic safety  
20 and licensing board is required to determine the particular  
21 benefit from a facility as in addition to finding there is a  
22 reasonable assurance to the public safety under the AEC's  
23 regulations.

24 CHAIRMAN JENSCH: Assuming that to be true where is  
25 the finding that there is a benefit.

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1 MR. TROSTEN: To take this particular section, I  
2 would say this is one of the sections that I would rely on as  
3 constituting a determination by Congress that there is a bene-  
4 fit. I would say, sir, because of the provisions in 104(b) as  
5 it now reads, saying that the Commission is authorized to issue  
6 licenses under this subsection to persons applying therefor  
7 for utilization and production facilities for industrial and  
8 commercial purposes.

9 In other words, if an applicant is to use a facility  
10 for industrial or commercial purposes it would be my view that  
11 Congress by this language has confirmed its determination that  
12 these plants are of benefit and that they can be licensed  
13 provided it is found that they do not represent a hazard to the  
14 public.

15 CHAIRMAN JENSCH: Aren't you getting into  
16 problems there?

17 If you rely upon the new legislation we are going  
18 into the antitrust problems that everybody seems to be backing  
19 off from.

20 If we are extending into the realm of legislation  
21 that doesn't apply to this application, aren't we necessarily  
22 getting perhaps involved in regulations, like Appendix D and  
23 the question as to whether it is a little beyond this applica-  
24 tion.

25 MR. TROSTEN: Sir, I was merely saying this particular

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provision confirms what was previously in the statute. The Atomic Energy Act as it was previously worded referred to the authority of the Commission to issue licenses for those facilities involved in the conduct of research and development activities leading to a demonstration of their practical value.

The section I was reading merely says that the Commission is authorized to issue licenses for persons who desire to construct, production and utilization facilities for industrial and commercial purposes and these facilities can be issued under Section 104 of the Act if a construction permit under Section 104 of the Act has previously been issued for that.

So I don't feel this is a problem.

CHAIRMAN JENSCH: In other words, you argue the benefit is something you would derive from a composite consideration of several sections of the Act?

MR. TROSTEN: That is correct.

CHAIRMAN JENSCH: Did you desire to speak any more to that matter?

MR. ROISMAN: Well, as long as we are on 104(b), I hate to leave it because it seems to go just the opposite way. Looking at the first sentence of it, the first sentence is written under which this application is filed, the Commission is authorized to issue licenses to persons applying therefor

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1 for utilization and production facilities involved in the con-  
2 duct of research and development activities leading to the  
3 demonstration of the practical values of such facilities for  
4 industrial commercial purposes.

5 Now, let me set a hypothetical. Let us assume this  
6 plant instead of being constructed at this point were to be  
7 constructed in a portion of the country where there was no  
8 way of making any connection with any major transmission line.  
9 That the electricity that was going to be produced at the plant  
10 were going to be used right there on the site for things  
11 associated with the plant. And nothing to be demonstrated  
12 there that that plant could be used for any industrial commer-  
13 cial purposes and that it was, I don't know, just the dream  
14 of some utility to have this little reactor out there doing its  
15 thing.

16 I would say it would be perfectly permissible and  
17 expected that you would be able to come into the hearing and  
18 say this plant isn't going to lead to a demonstration of  
19 practical values of such facility for industrial and commercial  
20 purposes.

21 We claim that is equally true here for much more  
22 subtle reasons that we would like to develop in the context of  
23 the question we propose. That the operations of this plant  
24 can't serve a commercial purpose because it is not able to  
25 meet what the commercial need is that it is designed to serve.

ln9 1 Nor is it going to operate necessarily as a crux,  
2 a research and development tool for proving its commercial  
3 value because the same activity could have been conducted  
4 or, in fact, is at other very similar reactors which will  
5 answer the research question of whether or not when you get  
6 very large, you can get a sufficiently dependable source of  
7 power that it makes sense that industry should begin to use it.

8 What we are concerned about is that there is this  
9 rush from the public utilities to grab ahold of nuclear power  
10 as the answer for the future before they know, before we know  
11 whether it is the answer. As a matter of fact, we are not sure  
12 the question is the same question they have formed.

13 If the question is, let's get all the power we  
14 can possibly get and damn the consequences, that is one ques-  
15 tion and you come up with a different answer.

16 If the question is, let's look at power and decide  
17 whether it is practical and sensible and reasonable to take  
18 and meet all the needs that might conceivably arise if you  
19 just permitted the general public to act like a small baby,  
20 all demands and no responsibility sort of thing.

21 Or maybe you have to do a ratio job. I think that  
22 is what 104(b) is all about. We are dealing in an area in  
23 which there is a way. Congress says if this benefit is  
24 obtained, if industrial and commercial use is obtained, then  
25 nuclear power will be used but the Commission has been delegated

ln10 1 the responsibility and the Board, in turn, to decide whether  
2 that is true for each specific reactor. Maybe it is yes for  
3 Indian Point and no for Dresden and maybe for Shoreham  
4 and we don't know for Vermont Yankee but each reactor is  
5 unique in that sense and that is our whole point.

6 This unique reactor has to be examined to see if  
7 it comes up to that standard.

8 CHAIRMAN JENSCH: That is under Section 104(b), under  
9 which this application was filed, they still must show there  
10 will be a demonstration from this facility for the commercial,  
11 and industrial purposes, is that correct?

12 MR. ROISMAN: That or even under the new Section  
13 104(b) regardless of the one that applies, we are still  
14 talking about the utilization and production facilities for  
15 industrial and commercial purposes.

16 I don't think that the mere assertion will answer  
17 the question as to whether it will answer industrial purposes.  
18 Is there an industrial or commercial purpose to be served and  
19 will this plant serve it.

20 I don't think that question can be answered until  
21 you look at the specific reactor in the context of the specific  
22 hearing.

23 CHAIRMAN JENSCH: We haven't reached his second  
24 point, but if you would like to speak with regard to what he  
25 has been discussing, you may.

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1 MR. TROSTEN: Yes. I would like to say this with  
2 respect to the history of the application, this application was  
3 filed under Section 104(b) as it existed prior to the December  
4 of 1970 amendment. The application provided that we were  
5 seeking a license under 104(b) leading to the demonstration  
6 of the practical value of the facility.

7 A construction permit was granted under that section  
8 and the necessary findings were accordingly made under 104(b).  
9 Under Section 102(b), as now worded, any licenses hereafter  
10 issued for utilization or production facilities for industrial  
11 or commercial purposes, the construction or operation of which  
12 were licensed pursuant to Section 104(b), prior to enactment  
13 into law of this subjection, shall be issued under this  
14 Section 104(b).

15 So we are now in a situation, sir, where this  
16 facility which is one for industrial or commercial purposes  
17 should be licensed under Section 104(b) in view of the fact  
18 that a construction permit was issued under 104(b) as previously  
19 worded and I would like to indicate that I believe that  
20 Section 104(b) and Section 102 as presently worded, in no way  
21 suggests this Board is required to weigh the benefits and risks  
22 of Indian Point 2.

23 In fact, quite the contrary, they suggest this  
24 Board does not authorize that.

25 CHAIRMAN JENSCH: Well, maybe what the Intervenors'

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1 counsel is saying is that we are looking to see whether it  
2 will be a demonstration of this plant for the commercial  
3 purposes in light of what this facility could or could not do.

4 Of course, the construction permit being guided by  
5 general design criteria only and not specific designs and  
6 construction arrangements would assume to indicate that the  
7 operating permit -- you would want to see whether your  
8 specifics would now meet the commercial purpose that could be  
9 demonstrated by the operation of the plant.

10 Let us at this time give the Reporter a break and,  
11 we will come back to the Intervenors' second point. At this  
12 time, let's recess to reconvene in this room according to  
13 this clock at 11:25.

14 (Recess.)

end 11 15

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CHAIRMAN JENSCH: Please come to order.

I believe that just before we recessed we had interrupted Intervenor's counsel before he was to make his second point.

Would you proceed, Intervenor's counsel?

MR. ROISMAN: Yes, thank you, Mr. Chairman.

I just briefly wanted to comment on the suggestion that some of the questions involved here have been disposed of because the construction permit has been issued.

The critical issue from the standpoint of the Citizens Committee relates to the question of the safety features of the plant, particularly as they involve the question of accidents. This plant is being built and the application relates to Section 100.10(d) of 10 CFR where it says "Where unfavorable physical characteristic of the siting is the proposed site may nevertheless be found to be acceptable if the design of the facility includes appropriate and adequate compensating engineering safeguards."

Mr. Chairman, as you, yourself, pointed out, the design of the plant really didn't get to the place that we know where those safeguards are until this operating license hearing.

Without getting into the question of the implications of the Power Reactor Development, Inc. case and the other issues of development, I think it is very clear that this

1 site may be a fait accompli in terms of the plant being able  
2 to be moved but the question of whether or not the safety  
3 features which are engineered to compensate for the fact are  
4 adequate is the issue as far as we are concerned at this  
5 operating license hearing and we recognize that the burden  
6 on us will be considerably more difficult for the Board  
7 deciding whether the risk is undue or the assurances are  
8 unreasonable. You will have to take into account the fact  
9 that if there has to be a power plant and it has to start  
10 operating by the middle of 1972 that the fact a plant is  
11 already built and standing on this site is a big thing in  
12 favor of giving a license to this plant.

13 We acknowledge that is part of the formula. But  
14 we don't think that the fact that the plant is there,  
15 forecloses us showing that the risk is sufficiently undue  
16 or unreasonable that there should not be a license issued  
17 and one of the alternative kinds of questions is that what can  
18 the plant be converted to? Is there something else that can  
19 be operated at the same site by which you can produce  
20 steam to run those generators?

21 I suggested at one time there it might be a nice  
22 museum but I think there are more practical things that can  
23 be operated at the site if this Board determines there is not  
24 reasonable assurance.

25 So what I am saying is that the fact that the site

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1 has been settled on don't mean there should be a license.

2 CHAIRMAN JENSCH: Is there any further discussion  
3 on this motion?

4 MR. TROSTEN: Yes, Mr. Chairman, I have two or  
5 three points to add.

6 First of all, I would like to comment that we are  
7 not arguing that the question of the functioning of the  
8 engineered safeguards, whether they will operate as stated,  
9 is inappropriate for consideration in this hearing.

10 Our objection is that the questions that the  
11 Intervenor has asked, even if these types of questions were  
12 relevant issues at the construction permit stage are not  
13 relevant now.

14 As an example, I will cite question 3 which is one  
15 of the questions to which we objected on this ground. The  
16 question reads, "At the time the decision was made to con-  
17 struct Indian Point No. 2, what was the load growth estimate  
18 of the interconnected power system of which this plant is a  
19 part for the following 15 years?"

20 We submit this has no relationship whatsoever  
21 to the matter whatsoever of the functioning engineered  
22 safeguard system nor does it have any relation to 10 CFR  
23 100.10(d) and we don't see the relationship between the  
24 regulation cited by the Intervenor to this question or the  
25 other question.

1 Now, there is one other point I would like to  
2 mention.

3 CHAIRMAN JENSCH: Would you deal with somewhat  
4 more particularity to each of these questions and give  
5 us your specific response, if you can, to some of these  
6 questions, please?

7 MR. TROSTEN: Yes, sir.

8 I just cited number 3.

9 CHAIRMAN JENSCH: Number 1, "If Indian Point  
10 operates normally and without malfunction, how many days  
11 will the plant not be in operation?"

12 Now, if this is a research and development  
13 facility, does the research and development program outlined  
14 for this plant involve any shutdown time?

15 MR. TROSTEN: Mr. Chairman, I would like to  
16 address myself to the underlying premise concerning your  
17 question. This plant as I said was licensed under Section  
18 104(b) as it was earlier involved in the conduct of research  
19 and development leading to a demonstration of practical value.  
20 At the present time we are -- our operating license would be  
21 granted under Section 104(b) as it is presently worded.  
22 This license would be granted to us on the ground that the  
23 facility to be licensed is one for industrial or commercial  
24 purposes and would be granted to us under Section 104(b)  
25 because the construction permit for this facility was granted

1 under Section 104(b) prior to the amendment of that section.

2 Now, Mr. Chairman, it is our view that it is necessary  
3 for us to show that the facility is one for industrial or  
4 commercial purposes and we believe that the evidence in the  
5 record clearly shows this is a facility for industrial or  
6 commercial purposes. But it is not necessary, Mr. Chairman,  
7 for us to show a continuing research and development purpose  
8 or any -- or for that matter is it necessary for us to  
9 show that the value of this facility is such and such or that  
10 a particular benefit will be derived from the facility.

11 So it is not necessary, therefore, for us to  
12 address ourselves either to the research and development  
13 results that would flow from this plant or to the benefits  
14 that would flow from this plant.

15 CHAIRMAN JENSCH: Assuming that to be true, a  
16 commercial purpose generally involves a certain anticipated  
17 period of operation, does it not?

18 MR. TROSTEN: Yes, sir, I would say generally.

19 CHAIRMAN JENSCH: I think the question is: Are  
20 you going to have some shutdown during that anticipated period  
21 of operation?

22 MR. TROSTEN: (No response.)

23 CHAIRMAN JENSCH: For instance, the fossil fuel  
24 plants generally are shut down in a slack period for certain  
25 periodic and general maintenance purposes and perhaps this

1 thing. Do you envision slack periods for the nuclear plant?

2 MR. TROSTEN: We can certainly see that the question  
3 of shutdowns as to how they might relate to a safety problem  
4 associated with this plant would be relevant if this became  
5 an issue but we do not concede, Mr. Chairman, that the  
6 question of whether they will be shut down or exactly how long  
7 the plant will be operating -- that it is necessary to  
8 demonstrate any particular period of operation in order to show  
9 that the plant is one for industrial or commercial purposes.

10 MR. BRIGGS: Mr. Trosten, do you take the position  
11 now that 104(b) license indicates the fact that you have  
12 built the plant and want to operate it entitles you to the  
13 license? It doesn't have to run very often or for any  
14 purpose, just the fact that it is built and that the Applicant  
15 would like to run it pretty much entitles him to a license  
16 to run it?

17 MR. TROSTEN: No, I don't think I would go and  
18 state it as boldly as that, Mr. Briggs. I think this is  
19 not the intention of Section 104(b) as presently worded. I  
20 believe the intention of Section 104(b) was that facilities --  
21 power reactor facilities, sir, being constructed by utilities  
22 on their power grids for the purpose of generating electricity  
23 on their power grids, these facilities having been previously  
24 licensed under Section 104(b), could now be licensed under  
25 Section 104(b) of the Act as amended.

1           In this connection I would like to state there  
2 have been several references by Intervenor's counsel today  
3 and on previous occasions to the construction of power  
4 reactors for a sauna bath purpose, as toys for utility  
5 executives and so forth. While this type of example is an  
6 interesting example and poses a question that one might  
7 want to think about, it in no way has anything to do with the  
8 facts in this case or including the facts in evidence in  
9 this case.

10           The Indian Point 2 facility is a power reactor  
11 facility built by Consolidated Edison Company to supply  
12 electricity to the people of the City of New York on Consolidated  
13 Edison Company's grid. So the discussion of building sauna  
14 baths are totally irrelevant.

15           MR. BRIGGS: If in the construction permit hearing  
16 the Applicant indicated he was going to do certain research  
17 and development or operate the plant for certain research and  
18 development purposes, would he now be entitled to abandon  
19 this position because of the change in the law that it would  
20 no longer be necessary for him to do research and development  
21 or to carry out the operation for certain research and  
22 development purposes?

23           MR. TROSTEN: Dr. Briggs, I would say that the  
24 enactment of Section 104(b), the amendment of Section 104(b)  
25 has changed the structure of the Atomic Energy Act and I

1 would say that the new language of the law represents in  
2 effect a finding by the Congress that certain types of facilities  
3 have practical value.

4 Congress has determined that in effect these  
5 facilities have practical value, if you will, by amending the  
6 statute so that the Commission is no longer required to make  
7 a finding of practical value as for licensing facilities on  
8 a commercial basis.

9 So I would say, sir, that the original premise that  
10 the facility would operate -- that the same sort of  
11 demonstration that was required under the prior statute is  
12 no longer required.

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1                   CHAIRMAN JENSCH: Well, was that the question?  
2 I think Dr. Briggs is asking you, are you going to carry out  
3 the R&D you committed yourselves to undertake at the time of  
4 the construction permit?

5                   MR. TROSTEN: The R&D which was committed to be  
6 carried out at the time of the construction permit is specific  
7 R&D associated with facilities. Where there were questions  
8 that had to be resolved by R&D, that R&D has been completed,  
9 sir, and the report on it is contained in the Final Safety  
10 Analysis Report, and the information we have submitted or  
11 will submit to the Board at this hearing today.

12                   I thought Dr. Brigg's question was addressed to the  
13 more general issue of the R&D which is part of the demonstra-  
14 tion of practical value of the facility and it was to that part  
15 of his question that I was confining myself.

16                   DR. BRIGGS: It was directed towards any R&D that  
17 might be done during operations rather than prior to operations.  
18 I am not certain whether commitments were made but would you  
19 contend that any commitments that were made at the construc-  
20 tion permit for carrying our research and development during  
21 operations still would have to be carried out, or could you  
22 now abandon?

23                   MR. TROSTEN: I would say, sir, commitments made for  
24 the conduct of R&D have been fulfilled, sir.

25                   DR. BRIGGS: Thank you.

1 CHAIRMAN JENSCH: Have we concluded all reference to  
2 the questions under the joint motion? We will await the res-  
3 ponde by the staff and then comments by the intervenors to the  
4 answers by the staff, as well as any comments the Applicant  
5 would desire to submit in reference to the answers by the Staff.

6 MR. TROSTEN: Mr. Chairman, I wonder if you might,  
7 in the interest of an orderly proceeding, set a time for the  
8 filing of any replies to the answers? May I suggest, sir, that  
9 three working days after the receipt of any answers, that the  
10 party be compelled to file his reply within three days after  
11 the answers?

12 CHAIRMAN JENSCH: Well, let's see how it fits the  
13 time previously arranged. I don't think before today we had  
14 any indication by the Staff that they wanted a full measure of  
15 the provisions of the rules or that they wanted an extension  
16 to April 2nd. So the answer is that that may conflict with  
17 arrangements previously made.

18 There may be some commitments previously established  
19 to preclude that possibility. Any comments by the parties?  
20 How about the Atomic Energy Council of the State of New York,  
21 would three working days suit your schedule?

22 MR. SCINTO: As I understand, we are talking about  
23 three working days for replies?

24 CHAIRMAN JENSCH: Y s.

25 MR. SCINTO: Well, we are intending to file answers.

1 Or at least we may file an answer and that would be by April  
2 2nd. So we would not need any additional time for a reply  
3 thereafter.

4 CHAIRMAN JENSCH: You are not committing yourself  
5 that you will file anything, is that correct?

6 MR. SCINTO: That is correct.

7 CHAIRMAN JENSCH: All right.

8 And how about the Citizens Committee and Environmental  
9 Defense Fund?

10 MR. ROISMAN: The Environmental Defense Fund is  
11 taking no position on this motion so on their behalf they have  
12 no opinion one way or the other.

13 With regard to the Citizens Committee, three days is  
14 all right so long as it is understood that it is three days  
15 after the last of the answers. We don't intend to file  
16 separate replies to each one of the answers as they come. If  
17 one comes from the State of New York and one from the U.S.  
18 Atomic Energy Commission and the Hudson River Fishermen's  
19 Association, we would file one reply three days after we  
20 receive the last one.

21 CHAIRMAN JENSCH: Well, let's fix an outside date.  
22 As I understand it, the Staff would file on or before April 2nd,  
23 not only the answers but any further comments they would make  
24 in reference to the questions which have been submitted in the  
25 joint motion. Then, as I understand it, the Applicant would

1 like to file some comments on the answers by the Staff,  
2 is that correct?

3 MR. TROSTEN: Sir, we may wish to file a reply to the  
4 answers filed either by the State or Hudson River Fishermen's  
5 Association or any other party.

6 CHAIRMAN JENSCH: Everybody wants to be last. When  
7 will you submit something in reference to what the Staff has  
8 said?

9 MR. TROSTEN: I am in agreement to the suggestion  
10 made by Mr. Roisman, that if we agreed to file any answers we  
11 would file it within three working days after the receipt of  
12 the last answers.

13 CHAIRMAN HENSCH: Then April 7th would embrace all  
14 answering documents to what the Staff will file, is that  
15 correct?

16 Is April 7th satisfactory to all parties?

17 MR. ROISMAN: Well, it is conceivable that receipt  
18 won't be available of this until Monday, particularly if we  
19 are concerned about New York State, and since it has to be  
20 served in Washington and mails are more reliable than electri-  
21 city these days, we would rather have it the 8th.

22 CHAIRMAN JENSCH: All right, April 8th fixes the  
23 date on which all answers will be filed to what the Staff  
24 submits.

25 That having completed the oral presentation with

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1 reference to the joint motion, are we ready to take up the  
2 next motion of the Environmental Defense Fund? If so, will  
3 the Environmental Defense Fund speak in reference to that  
4 motion?

5 MR. ROISMAN: Mr. Chairman, I am not going to speak  
6 at length except to the extent that the Board may have questions.

7 We have not yet received the answers, at least on  
8 the merits of the motion. I will address myself to the pro-  
9 cedural question. I will speak on the merits of the motion from  
10 the AEC Act and I think it is going to be what they filed  
11 in the Calvert Cliffs suit. We did get that in the office  
12 and I have not had a chance to examine it. But I will sort of  
13 briefly outline what our position is on the legal merits and  
14 discuss in detail our question on the ability of the Board  
15 to decide the motion in the first instance.

16 CHAIRMAN JENSCH: Well, I have copies of the brief  
17 that the Atomic Energy Commission filed with the Court of  
18 Appeals in Washington on Calvert Cliffs. Have you read those?

19 MR. ROISMAN: I have skimmed them. I am not sugges-  
20 ting that we necessarily need to hold another hearing for  
21 purposes or oral argument.

22 CHAIRMAN JENSCH: No, but I thought we might recess  
23 a little earlier, you could take my copies to the brief and  
24 if you would like to address yourself to the matter after  
25 lunch --

1 MR. ROISMAN: Mr. Chairman, I would not feel that would  
2 give me an opportunity to say something meaningful to the  
3 Board. To the extent I don't comment on it I am willing to rely  
4 on whatever it is that I submit in writing.

5 CHAIRMAN JENSCH: Very well.

6 MR. ROISMAN: As the Board is aware we in effect made  
7 two motions, one that the Board has the authority to decide the  
8 question of whether or not the National Environment Policy Act  
9 should be applied to the hearing and, secondly the question of  
10 how the Environmental Policy Act should be applied.

11 The question on whether the Board has the authority  
12 as we explained in the reply we filed to the staff and the  
13 application, we feel that the staff's and ours are in basic  
14 agreement.

15 The Calvert Cliffs memorandum is in effect, under  
16 that memorandum this Board has the ability to look into the  
17 question to determine whether or not there has been an  
18 unreasonable act taken by the Atomic Energy Commission in the  
19 context of the decision made in Appendix C. The Staff says  
20 the Board certifies questions to the Commission if it thinks  
21 there is a question, and we say the Board makes a preliminary  
22 determination and then certifies the question to the Commission.

23 I think that difference as far as I am concerned is  
24 semantic. I tried to put myself in the Board's position, if I  
25 sat ther and looked at the issue and said that really looks

1 like a serious question, I would feel some great temptation to  
2 sort of say to the Atomic Energy Commission, let me know what  
3 you think about it or what I think about it.

4 If the Board chooses not to take that step I think the  
5 Commission would suffer and I would urge the Board to do so.  
6 But I think we and the Staff would satisfactorily agree that  
7 the Board has the power.

8 With regard to the Applicant, it is an entirely  
9 different situation. The Applicant reads the Calvert Cliffs  
10 memorandum differently than we do.

11 CHAIRMAN JENSCH: There is some disturbing noise  
12 here. I would ask that it please stop.

13 Would you proceed?

14 MR. ROISMAN: Basically our position is that in the  
15 Calvert Cliffs case the question arose as to the validity of  
16 the specific regulations promulgated by the Atomic Energy  
17 Commission. Here is the question as to the validity of the  
18 specific regulation in atomic energy.

19 There there was no basis in a preliminary -- as you  
20 know, prima facia arguments were presented that the regulation  
21 was invalid and therefore it was determined that it was not  
22 proper to investigate the legality of 10 CFR Part 20 regula-  
23 tions.

24 Here we contend that there is considerable reason  
25 and a considerable amount of prima facia evidence that the

1 selection of March 4th, 1971, as the date on which the Atomic  
2 Energy Commission would begin compliance with the National  
3 Environmental Policy Act and the setting of the Atomic Energy  
4 Commission as a flat rule, that any Federal, State or regional  
5 standard that had been set as applicable to a particular  
6 hearing that that standard is in and of itself positive to  
7 the issue to which it relates and no Board can look behind the  
8 standard to find out whether or not the particular standard is  
9 in fact able to protect the environment to the extent that  
10 the National Environmental Policy Act requires.

11 Those two issues are the two that would be critical  
12 onces in this case and the Board can look at that and decide  
13 whether there was, in its opinion, a reasonable question as  
14 to the validity of Appendix D, and regardless of that judgment  
15 certify the question to the Atomic Energy Commission.

16 All of that, of course, is in somewhat of a different  
17 context than Calvert Cliffs for one important reason. That is  
18 the question of whether or not the Atomic Energy Commission  
19 Regulation will be challenged or disposed of pro or con by  
20 the Court of Appeals before we can get through the process  
21 that the Calvert Cliffs memorandum suggests -- namely, the  
22 preliminary decision by the Board, a certification, new  
23 briefing and decision by the Commission.

24 I can't give you any answers on that except to advise  
25 the Board that oral argument in the Calvert Cliffs case has  
been set for April 16, and Court of Appeals are notorious for

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1 taking as much time as they think they need on cases. That  
2 menas three months or six months or they can decide it in a  
3 week. The applicant has suggested that the Calvert Cliffs  
4 memorandum is limited by words which appear in there that say  
5 you can only raise questions with regard to "issues that are  
6 in the proceeding," and that the environmental issues are not  
7 in the proceeding.

8 I think in this proceeding there is an issue. Not  
9 the environmental considerations but as to whether or not the  
10 environmental consideration should be in this proceeding and ,  
11 I don't see what the Applicant has suggested here is anything  
12 more than changing words around. This Board is going to  
13 decide whether or not the environmental issues can be taken  
14 up in this hearing. That is an issue.

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1           The Staff offers proof in this proceeding as to  
2 their compliance with the National Environmental Policy Act,  
3 the offers of proof, the detailed environmental statement  
4 prepared in this case. In that situation we also feel that  
5 environmental issues are in that case.

6           Appendix D, irrespective of consideration which  
7 deal with the hearing brings into context questions related  
8 to whether the Applicant has filed an environmental report,  
9 whether a proper detailed environmental statement has been  
10 filed. Those are issues which can be disposed of in this  
11 hearing also.

12           We have not raised those issues but that is not to  
13 dispute the fact that they are legitimately before the Board.  
14 In short, Appendix D and its application is at issue before  
15 this Board. It is a bootstrap argument to argue it is not  
16 in issue before the Board because it says by its terms, the  
17 Board can't consider the full range of issues.

18           Now, as to the second aspect of the motion, the  
19 question dealing with environmental considerations. As the Board  
20 knows, our procedure has been to merely submit the legal  
21 arguments presented in the Calvert Cliffs lawsuit and those  
22 arguments presented in the Calvert Cliffs lawsuit apply here.

23           Those arguments of the four involved in the lawsuit  
24 aren't actually involved in this case. One related to the  
25 Appendix D applications, the grant for the construction permits

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1 already issued and operating licenses not now pending. That  
2 issue involving Indian Point No. 2.

3 Another question relating to the responsibility of  
4 the Atomic Energy Commission in respect to the case where  
5 no Intervenor raises the environmental issues. To the extent  
6 there are Intervenors raising environmental issues, that  
7 issue is not involved, although perhaps I am not sure it  
8 is resolvable at this time.

9 There is a question of where the burden of proof  
10 lies. If it comes in, will the Applicant carry the same  
11 burden of proof. Turning to March 4th, that is a critical  
12 one. If the March 4th date holds up we don't really get to  
13 the other issues. Basically what happened is that the Atomic  
14 Energy Commission said in April of 1970, we have read the  
15 National Environmental Policy Act, we have read the legislative  
16 history and we conclude that we do not have to consider non-  
17 radiological environmental issues in our hearing.

18 On June 3rd, they published another Appendix D  
19 and said the very same thing. We do not have to consider  
20 nonradiological environmental issues at our hearing. On  
21 December 4, 1970, they published a final Appendix D now  
22 involved here. They said you know we have been wrong. For  
23 11 months we have been wrong and we really do have to consider  
24 environmental issues in our hearings, nonradiological ones.

25 But because we took so long making that judgment

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1 we are going to give a transition period from December 4, 1970  
2 to March 4th of 1971 and at no hearing which is noticed before  
3 March 4, 1971 will we consider nonradiological environmental  
4 issues. Even though we now concede that an Act passed on  
5 January 1, 1970, requires us to consider those issues. Of  
6 course, the issue doesn't end there.

7 In a letter to Chairman Train on October 2nd, the  
8 Commission called the Council on Environmental Quality and  
9 have said we have seen the light. We now realize that we must  
10 consider environmental issues in our -- nonradiological  
11 environmental issues in our hearing.

12 That date preceded the date on which the notice of  
13 hearing was filed in this case. But December 4th was the date  
14 that it took the AEC to formalize that decision in the form  
15 of a specific set of regulations.

16 But that communication was already made. We claim  
17 there is absolutely no reasonable basis. We find nothing in the  
18 legislative history that could have supported the AEC's  
19 April 2nd and June 3rd attitude; we find no basis in the  
20 National Environmental Policy Act which permits the Atomic  
21 Energy Commission to delay compliance with the Act while it  
22 tries to find out whether or not it was covered.

23 We find in the legislative history a wealth of  
24 information that indicates Congress knew that the Atomic  
25 Energy Commission as a result of having won the case of

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1 New Hampshire versus Atomic Energy Commission has the right  
2 to exclude nonradiological environmental factors and that it  
3 looked at that case and thought about it and the implications  
4 and it said we want every federal agency to consider the  
5 environmental factors and they said it again and again and  
6 they made it a law on January 1, 1970.

7 The Joint Committee on Atomic Energy as early as  
8 April of 1970 acknowledged that the whole problem of environ-  
9 mental issues before the AEC had been in effect resolved by  
10 the passage of the National Environmental Policy Act and the  
11 Water Quality Improvement Act of 1970, and it dropped con-  
12 sideration of specific pieces of legislation which were then  
13 pending before it in order that it would be able to go on to  
14 the practice of value legislation. And the basis for dropping  
15 it was these issues had been resolved if the Congress saw  
16 the light, the federal agency saw the . If the agency  
17 didn't see the light why did the public have to suffer as  
18 a result of that.

19 But underlying the entire assumption is that  
20 a transition period is necessary. We do not understand what  
21 is the basis for that judgment.

22 CHAIRMAN JENSCH: Well, what were the comments?  
23 Were there some comments to the Commission that they needed  
24 time to have -- for a transition?

25 MR. ROISMAN: I am not aware of that. More

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1 importantly I think we have to examine the reasonableness of  
2 that decision. It may be that some utility, perhaps Con  
3 Edison submitted costs and said we don't want to have to get  
4 into the environmental issue thing, put off the effective  
5 date of your Appendix D so it doesn't cover our hearing.

6 They may have said that.

7 CHAIRMAN JENSCH: Wasn't Appendix D adopted on  
8 December 4th put out in the form of a proposal for comments?

9 MR. ROISMAN: Yes, it was put out on June 3rd  
10 without the provision for having nonradiological issues  
11 raised in the hearing. In other words, when the June 3rd  
12 version was put out the provision was still in there that you  
13 would not consider nonradiological factors in an AEC hearing.

14 December 4th version was the first time --

15 CHAIRMAN JENSCH: Following June 3rd?

16 MR. ROISMAN: Yes, except for the communication to  
17 Chairman Train by a telephone conversation and a letter saying  
18 we have now concluded that we don't need any change in our  
19 statute in order to permit us to do all the things that the  
20 National Environmental Protection Act proposes to do.

21 CHAIRMAN JENSCH: Well, was there a supplement to the  
22 June 3rd proposal indicating that the Commission was consider-  
23 ing a March 4th --

24 MR. ROISMAN: Not to my knowledge, Mr. Chairman.

25 CHAIRMAN JENSCH: Were there any public comments in

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1 response to the June 3rd proposal that the commentators sug-  
2 gested March 4th?

3 MR. ROISMAN: Not to my knowledge. I haven't read  
4 all of the comments, so I can't say it is not in there. I  
5 know nothing appeared in the Federal Register to indicate a  
6 change was going to take place from the atomic energy position  
7 from June 3rd to December 4th position.

8 CHAIRMAN JENSCH: Then there wasn't any comment as  
9 far as you know on the proposal by the Commission to set  
10 March 4, 1971?

11 MR. ROISMAN: No, except to the extent that after  
12 December 4th --

13 CHAIRMAN JENSCH: Then you knew it.

14 MR. ROISMAN: And the Commission accepted comments  
15 subsequent to that time from various parties.

16 CHAIRMAN JENSCH: But it had already been proposed  
17 for March 4th in December?

18 MR. ROISMAN: Yes. This seems to be one of those  
19 issues that the Board is better able to decide than the  
20 Commission. Here we are going through a process that is  
21 beginning to wind you, in this case the Citizen Committee for  
22 Protection of Environment, the Environmental Defense Fund has  
23 limited its consideration to environmental only.

24 From the second set of questions which were  
25 submitted, we intend to move on to the hearing and dispose of

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1 the merits of the various issues involved. If environmental  
2 issues had been included at this hearing and we knew when we  
3 met in December at our first hearing conference that now the  
4 AEC acknowledged that it had the power to permit these issues  
5 to be raised, the very same schedule for submitting the ques-  
6 tions and the very same schedule for answering the questions  
7 could have been applied.

8 We could have stood here today with those answers in.  
9 At least I can say that from the standpoint of the Intervenors  
10 that we could have; I don't know whether the Applicant or  
11 Staff could have answered all of those.

12 That presupposes, and I think that is important,  
13 that the detailed environmental data was as complete and as  
14 useful as the Final Safety Analysis Report.

15 I think there is some serious questions about that.  
16 I don't think this goes to the issue of a need for a transition  
17 period unless we go into the thing where the Commission says  
18 our failure to apply with the clear mandate gives us extra  
19 time in the transition period. We might have spent some time  
20 arguing about the validity of the detailed statement but from  
21 my own standpoint, my procedure would have been to ask the  
22 questions that are not answered in the detailed statement and  
23 wait until I got my hands on the answer, not to argue that it  
24 needed those statements before it was a proper legal document.

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1           Now, we might have concluded at the end of the round-  
2 two questions that in fact there was not enough data to make  
3 the kind of judgment that the National Environmental Protection  
4 Act requires this Board to make. But that would have been no  
5 different than what my arguments would be on behalf of the  
6 Citizens Committee for Protection of the Environment, which  
7 is we don't have enough information to conclude as to the  
8 safety of the plant.

9           In short, I don't see anything extra-special about  
10 that transition period. If we had been dealing with a new  
11 system and there had never been hearing boards or hearings  
12 or cross-examination of witnesses or interrogatories or  
13 depositions, that would be a different thing.

14           This Board and other Boards like it have been asking  
15 environmental questions and dealing with them since the  
16 Atomic Energy Commission first began holding hearings.  
17 They have been talking about radiological damage and that is  
18 environmental.

19           We now have to talk about water from the thermal  
20 standpoint, also the radiological standpoint, and air pollution  
21 associated with the operation of cesium or other types of  
22 discharges. There will have to be concern with siting from  
23 an environmental standpoint insofar as the appearance is  
24 concerned.

25           But those go only to the question of whether or not

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1 these issues are issues to which the particular members of the  
2 Board can deal with. I have great confidence -- I think we  
3 are dealing in a scientific field and the ability to assess  
4 whether we know what the impact of a thermal discharge from a  
5 plant is going to be calls upon the same general discipline  
6 as it does to determine whether or not the radiological  
7 discharges are going to effect the biota in there.

8 In short, we cannot discover, even assuming we thought  
9 that the Commission had a right to stick in as late as  
10 December 4th a transition period, we cannot discover why it  
11 would have needed one. We don't see where it would serve any  
12 useful purpose.

13 We might point out that while the terms of the  
14 National Environmental Policy Act in our opinion don't permit  
15 for a transition, the Council on Environmental Quality,  
16 when it published on May 12, 1970, its interim guidelines to  
17 held Federal agencies implement these, set June as the date in  
18 which the agencies must adopt the necessary regulations.

19 In short, that authoritative body felt that maybe a  
20 five-month transition period from January to June was not  
21 unreasonable. The Courts, I might say, have not upheld that.  
22 Down the line they have examined cases where the National  
23 Environmental Policy Act was not complied with in the period  
24 between January 1 and June, and still held that the agency's  
25 actions did not comply with the National Environmental Policy

1 Act.

2 CHAIRMAN JENSCH: What is the basis of this dispen-  
3 sation for a few months? You said the Water Quality Adminis-  
4 tration came out in May and said you could do it in June?

5 Is this something of their own generosity or  
6 has there been some findings of fact? I have always been  
7 puzzled by agencies that decided you could do something  
8 some time later. I wonder if the statute has something specific  
9 in it? Is there anything in there -- the Act -- that says  
10 you can do it now or later?

11 MR. ROISMAN: The Water Quality Act does have  
12 built into it some so-called "grandfather clauses." At this  
13 point we aren't concerned with that Act. They aren't what you  
14 would call transition periods in the sense of a transition  
15 period to allow compliance, but rather the Congress makes a  
16 judgment that in certain cases it will in fact defer compliance  
17 and it tells you if you were to begin construction before --

18 CHAIRMAN JENSCH: As a part of the statute. That is  
19 a different consideration.

20 MR. ROISMAN: That is right. A number of consumer  
21 statutes like the Truth in Lending Act have included in their  
22 provisions the effective date of this act shall be 180 days  
23 after passage of Congress.

24 That is not an unusual thing.

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CHAIRMAN JENSCH: As a statutory enactment.

MR. ROISMAN: That is correct.

We found no cases to support the theory that any time after January 1, 1970 a Federal agency is able to defer compliance with the National Environmental Policy Act.

I want to add, I think we need to separate two things here: Section 101 of the National Environmental Policy Act lays out something like the things we read through this morning in the Atomic Energy Act, broad policy. I think even in more detail in the sense it said you must consider this or consider that or this would be a factor or that would be a factor in the decision.

Section 102 of the Act laid down specific procedures by which the agencies are to implement these general policies in Section 101. I think there is in there the implicit understanding that the procedures must go into effect immediately but when you consider the various environmental factors, you must take into account things like the delay that will be involved.

1           If you get a full consideration of the particular  
2 issue and the delay that might be involved if you required  
3 a nuclear power plant to completely modify its structure in  
4 order to meet a thermal pollution standard that it had not  
5 met before. But that those kinds of judgments are judgments  
6 to be made in the individual case. The thing that bothered  
7 Congress was not that we didn't have broad national  
8 statements. I mean we have heard from the Federal Power  
9 Commission for years. We have heard from environmental needs  
10 pouring out of agencies concerning for water pollution.  
11 We heard from state agencies about their concern for thermal  
12 pollution but their concerns had never been tied down to  
13 specific decisions. They were broad statements that didn't  
14 get any considerations when the decisions were made.

15           Now the National Environmental Policy Act says  
16 that is over. Starting January 1, 1970 when you make a  
17 decision you take into account the environmental factors.  
18 It did not leave the discretion to an agency that they would  
19 postpone consideration of the environmental issue. It is  
20 true in this case the Consolidated Edison Company would then  
21 be permitted to come in when we start raising environmental  
22 issues and say it does not matter whether thermal pollution  
23 is serious or not here because we must have this plant and  
24 it must be started on such and such a date and responding to  
25 the thermal pollution problem would take a three-year

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1 restructuring of the plant and we don't have the time for  
2 that. That would be a judgment which this Board would have to  
3 make.

4 Can we show enough environmental harm to claim that  
5 the plant ought to wait until we can solve the thermal  
6 pollution problem rather than permitting the plant to be  
7 constructed and let thermal pollution to be taken care of  
8 some time in the future? But that judgment is to be made in  
9 the context of the very plant. The agency talked about,  
10 it is ironic in light of our earlier discussion, the need for  
11 power permeates the reasons given for what the agencies have  
12 done in AEC.

13 My brief reading of the Calvert Cliffs case  
14 indicated they are not abandoning that consideration but are  
15 pursuing it. They claim that the need for power is the  
16 relevant consideration and that that need makes it necessary to  
17 have this transition period. But I can't understand. If  
18 this plant is needed for power then this Board can decide.

19 Let's hurry up, let's give them a license right  
20 away. The power need is greater than the environmental  
21 consideration. But how is the Commission capable of looking  
22 at the Indian Point Plant, the Midland Plant, the Palisades  
23 Plant and the Shoreham Plant and all the other plants that  
24 got licenses for construction permits or operating licenses  
25 starting on January 1, 1970 and ending some time after December

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1 4, 1970.

2 How are they able to say that every one of those had  
3 the same magnitude of reasoning and therefore we could  
4 disregard environmental considerations, non-radiological  
5 ones, in the hearing. We are simply unable to comprehend  
6 how it is possible for the agency to do that. Not in the  
7 face of an explicit statute like the National Environmental  
8 Policy Act.

9 The second thing that the agency did, and this is  
10 particularly intriguing, the AEC took the position that  
11 the National Environmental Policy Act imposed upon it the  
12 obligation of policing everybody else's compliance with the  
13 National Environmental Policy Act.

14 Any time the AEC finds a state, regional or federal  
15 authority that has laid down an environmental standard or  
16 regulation that applied to the particular plant that is  
17 being considered, all they do is write in "License comply  
18 with that regulation," end of discussion. It does not matter  
19 whether that applicable state, regional or federal standard  
20 was set after public hearing, considered all of the  
21 environmental considerations relevant, was 10 or 15 years  
22 old or adopted last week, there was no judgment made on the  
23 quality of that regulation.

24 We know some states differ. Some are tough and  
25 others are weak. Just like in the regulation area, some are

1 more rigid than 10 CFR Part 20. But the AEC has said any  
2 place one of those standards exist we defer to it and that  
3 is the end of the matter.

4 We again think they are foreclosing the kind of  
5 investigation that the National Environmental Policy Act has  
6 imposed upon the nation. Sure it is an important consideration.  
7 It would be a weighty piece of evidence and I would not want  
8 to be the one in a position to argue that a particular standard  
9 set by a well qualified, fully competent state agency was not  
10 adequate to protect the environment but the National  
11 Environmental Policy Act said I have a chance.

12 I think our case is a good one. Here is a plant,  
13 Indian Point No. 1, that has been operating in compliance  
14 with the water quality standards of the State of New York.  
15 That is one in which total deference is given by the agency.

16 The Hudson River Fishermen's Association is in  
17 this case because millions of fish are being killed at the  
18 Indian Point No. 1 Plant. The Applicant has conceded that  
19 they have yet to uncover the cause nor have they come up with  
20 the solution. They think it is the intake structure.  
21 Maybe, we don't know. Yet the water quality standards are  
22 being met.

23 Congress said if that many fish are being killed,  
24 if the environment is being harmed, shouldn't somebody decide  
25 what the standard should be and this hearing is where that

1 decision is being made. You can make the decision in the  
2 context of where the crunch is; this license in the AEC is  
3 the most critical thing. It is the critical federal action  
4 and Congress had innate confidence in the ability of the  
5 federal agencies to police this responsibility.

6 Yes, New York State water quality will get  
7 dividends and so will the fact that millions of fish are  
8 being killed in the area of this plant.

9 The decision has to be made, it can't be deferred  
10 by simple fiat that says if you meet the state water  
11 quality standards you have enough. An interesting thing is  
12 going on. We have not had an opportunity to really fully  
13 investigate what the AEC's approach was. In other words,  
14 how did they really intend to apply these requirements  
15 when they said you show us the state standard and we will  
16 apply it.?

17 Part of that reason was that there were no  
18 hearings involving environmental issues, non-radiological ones.  
19 I know the Chairman knows the Vermont Yankee nuclear station  
20 is being considered and the AEC said it would consider all  
21 environmental factors in the context of Appendix C.

22 There is now out for comment a draft of environ-  
23 mental statement. Attached to it are numerous comments by  
24 state agencies and federal agencies. Without going into the  
25 details of those comments let's look for a moment at the

1 water quality question.

2 In that hearing the State of Vermont has a  
3 Water Resources Board which has issued a permit for the  
4 operation of the plant on certain conditions and that permit  
5 represents the water quality standards which the State of  
6 Vermont should be applied to the nuclear power station.  
7 The Attorney General of the State of Vermont a comment.  
8 The standards set by the Water Resources Board according to  
9 the Attorney General of the State of Vermont are not the  
10 water quality standards of the State of Vermont and he cites,  
11 specific pieces of legislation in the State of Vermont.

12 So here we have the first issue that Appendix D  
13 would force the AEC to decide: Which of the two state  
14 authorities, the Attorney General or the Water Resources  
15 Board is authoritative.

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1 We have no question of the merit. It doesn't  
2 matter according to the AEC whether the Attorney General's  
3 water quality standards are better or worse than the ones by  
4 the Water Resources Board. It is strictly a legal question  
5 but in the draft environmental statement the agency doesn't  
6 purport to resolve that question.

7 Secondly, the State Attorney General said, taking  
8 the permit on its face and reading the environmental report of  
9 the Applicant, we discover that the Applicant will not operate  
10 the plant in compliance with the permit.

11 Now, according to Appendix D, the answer is then  
12 that the Commission said, sorry, Applicant, no license because  
13 Appendix D says any state standard set by a proper agency must  
14 be complied with.

15 But an examination of the draft environmental  
16 statement does not discover any such statement at all. Instead  
17 here in this context the AEC attempts to explain why the  
18 violation of the state permit isn't very serious. A little bit  
19 of hot water into the Connecticut River isn't too important.

20 Appendix D says they were going to enforce the state  
21 permit but the draft environmental statement says we aren't  
22 going to enforce that permit, we are going to discuss it  
23 because we judge it isn't very important. We don't object  
24 to them making that judgment as long as they are willing to  
25 make a judgment the other way. As long as they are willing

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1 to say the permit isn't adequate and therefore we need better  
2 standards.

3 Third, the State of New Hampshire, through two of  
4 its state agencies claim it has jurisdiction in the waters  
5 involved and that a permit from the State of Vermont is irrele-  
6 vant.

7 To that the Atomic Energy Commission merely makes  
8 the statement that it does not attempt to resolve the conflict  
9 between the State of New Hampshire and the State of Vermont.

10 CHAIRMAN JENSCH: Is there some basis of getting  
11 certiorari from some court for the conflict of states?

12 MR. ROISMAN: Well, the Supreme Court may be  
13 the place where it ends up, but I think Appendix D forces  
14 the issues and to say it only applies to which standard is  
15 applicable is absurd.

16 We need to have this Board able to investigate  
17 to decide what is the best standard and if the best standard  
18 is the standard in New Hampshire, that is the standard, if  
19 it is the one in Vermont, that is the standard and if it is  
20 another one altogether, that should be the standard.

21 CHAIRMAN JENSCH: Maybe the Vermont situation  
22 was a special case because it was issued before March 4th and  
23 maybe on the basis of the October letter to Mr. Train.

24 MR. ROISMAN: No, in that particular case the AEC  
25 said despite the fact that it was issued before March 4th, they

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1 will disregard the March 4th limitations in Appendix D.

2 CHAIRMAN JENSCH: Didn't they find it was necessary  
3 to have an orderly transition?

4 MR. ROISMAN: Yes, that is why they decided in  
5 the Vermont Yankee case it would not be necessary. Therefore,  
6 they did not use the March 4th date.

7 CHAIRMAN JENSCH: Are you requesting then that this  
8 be certified to the Commission to see whether this case meets  
9 the orderly transition?

10 MR. ROISMAN: I guess that is what is involved,  
11 although I think the Board can look at that question to deter-  
12 mine on the face what can be involved if we raise these issues.  
13 We tried to raise this issue as early as we could and in the  
14 normal course of things, here we are. It is true that since  
15 we have gone through round one questions and round two questions  
16 that there will be a new set of round one and two questions,  
17 but that is not our fault.

18 We were here. The Staff said no; the Applicant  
19 said no and therefore we had to wait and here we are on  
20 March 24th arguing the question.

21 But that delay is one that the Staff and Applicant  
22 has brought upon themselves and obviously should not prejudice  
23 us. I think it is a reasonable question as to whether or not  
24 the March 4th date is reasonable and whether or not it is  
25 reasonable for the Commission to preclude evidence on whether

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1 standards from regional authorities or other agencies are  
2 involved and to prohibit this Board from making independent  
3 judgments about those.

4 Thank you.

5 CHAIRMAN JENSCH: This is almost the time of our  
6 recess, rather than interrupt an argument that might be started  
7 before lunch, let us plan for a recess and reconvene and resume  
8 the argument.

9 Is the Staff prepared to argue on this point?

10 MR. KNOTTS: We will have a few comments on what  
11 Mr. Roisman said and we will try to put some of the things  
12 he said in their proper prospective.

13 CHAIRMAN JENSCH: Your judgment of what is proper  
14 prospective, I think he felt it was in proper prospective.  
15 At this time let's recess to reconvene this afternoon in  
16 this room at 2:00.

17 (Whereupon, at 12:25 p.m., the hearing was recessed  
18 for lunch, to reconvene at 2:00 p.m., this same day.)

end 18

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1 AFTERNOON SESSION

2 (2:00 p.m.)

3 CHAIRMAN JENSCH: Please come to order.

4 I believe at the conclusion of the session this  
5 morning intervenor's counsel, Environmental Defense Fund,  
6 had completed his argument.

7 Does the Applicant desire to make some statement  
8 or reference with regard to the position stated by intervenor's  
9 comments?

10 MR. TROSTEN: Yes.

11 MR. MAC BETH: On behalf of the Hudson River Fisher-  
12 men's position, I would like to say I join in the statements  
13 made by Mr. Roisman.

14 CHAIRMAN JENSCH: Very well. This will be under-  
15 stood.

16 MR. TROSTEN: Mr. Chairman, Applicant's answer to  
17 the motions of the Environmental Defense Fund and the Hudson  
18 River Fishermen's Association, for determination of the  
19 environmental issues is set forth in writing in our answer  
20 dated March 19, 1971.

21 In essence it is our position that this Atomic  
22 Safety and Licensing Board lacks the power to supplement the  
23 issues set forth in the notice of hearing in the Indian Point  
24 #2 proceeding.

25 CHAIRMAN JENSCH: I don't think there is any question

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1 about that; it is should the matter be certified to the  
2 Commission to have the Commission prescribe whether this  
3 additional consideration should be made available.

4 MR. TROSTEN: Addressing myself to that particular  
5 point, Mr. Chairman, I gelieve the Board is in a position to  
6 decide this issue and we would recommend that the Board  
7 decide the issue whether it has the authority to supplement  
8 the issues in the manner stated by the intervenor.

9 On the other hand, if the Board feels it wishes to  
10 certify this question of the Board's authority to the Commis-  
11 sion, the Applicant would not object to that. I would like  
12 to say by way of background that there is now, as the Board  
13 knows, a proceeding pending in the U.S. Court of Appeals for  
14 the District of Columbia in which petitioners represented by  
15 one of the counsel for the intervenors in this proceeding  
16 have fully set forth their arguments concerning the validity  
17 of the Commission's Appendix D Regulations published on  
18 December 4th, 1970.

19 The Atomic Energy Commission has filed a response  
20 to this proceeding and Consolidated as a Company has filed a  
21 amicus curiae brief in this proceeding on Monday.

22 Our arguments with respect to the validity of the  
23 Commission's Regulations, supporting the validity of the  
24 Commission's Regulations, particularly the provisions which  
25 states environmental issues will not be considered in a

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1 proceeding noticed for hearing before March 4, 1961, are  
2 fully set forth in that brief.

3 CHAIRMAN JENSCH: Will we have a copy so we can better  
4 understand your position?

5 MR. TROSTEN: We would be happy to furnish the Board  
6 with a copy of that brief filed in that proceeding.

7 CHAIRMAN JENSCH: Very well. Thank you.

8 MR. TROSTEN: The fundamental issue we believe the  
9 Board must decide is whether this Board has been empowered by  
10 the Atomic Energy Commission to expand the issues in this pro-  
11 ceeding so as to encompass an environmental issue. It is  
12 our position, Mr. Chairman, and we believe this position  
13 is fully supported by the language of the Atomic Energy Act,  
14 of the Administrative Procedure Act, and of the Atomic  
15 Energy Commission's Regulations, that the Board is a replace-  
16 ment for the presiding officer whose functions are described  
17 in the Administrative Procedure Act.

18 Accordingly, the powers of this Board must be  
19 determined first by examining what the role of a presiding  
20 officer is under the Administrative Procedure Act, and it  
21 is certainly true that although presiding officers are  
22 granted broad procedural discretion, their powers basically  
23 flow by delegation from the agency itself.

24 This general proposition which is contained in the  
25 Administrative Procedure Act is confirmed by the Section 191

1 of the Atomic Energy Act, which authorizes the creation of  
2 Boards such as this Atomic Safety and Licensing Board, and  
3 specifically states that these Board shall exercise those  
4 powers delegated to the Board by the Atomic Energy Commission.

5 Although the Atomic Energy Act authorizes the  
6 Commission to delegate to the Boards a broad range of the  
7 Commission's regulatory functions, the Commission has not  
8 exercised that authority and has confined its delegation of  
9 authority to the Board to consider those issues that are assigned  
10 to the Board in the course of an adjudicatory proceeding such  
11 as this one.

12 The issues that have been assigned to the Board in  
13 this proceeding are those set forth in the Notice of Hearing  
14 dated November 17th. Those issues in no way encompass the  
15 environmental issues which the Environmental Defense Fund  
16 and the Hudson River Fishermen's Association wish to have  
17 this Board consider.

18 Moreover, Appendix D of 10 CFR Part 50, explicitly  
19 states that non-radiological environmental considerations  
20 will not be considered in proceedings noticed for hearings  
21 before March 4, 1971.

22 On the basis of this general responsibility of the  
23 Board and of the particular provisions of the notice of hearing  
24 and of Appendix D, we submit it is clear that this Board is  
25 bound to follow the directions of the Commission and does not

1 have authority to consider in this proceeding these  
2 environmental issues. The intervenors have seized upon the  
3 Calvert Cliffs decision as suggesting that a different result  
4 would pertain. We suggest there is no basis in that decision  
5 for concluding that the Board has the authority to consider  
6 these environmental issues.

7 In the Calvert Cliffs decision the Commission stated  
8 that the Board has the authority to consider a challenge to one  
9 of the Commission's regulations on the limited grounds --  
10 certain limited grounds provided that the contested regulation  
11 relates to one of the issues in the proceeding. Mr. Chairman,  
12 the issues in the proceeding are set forth in the notice of  
13 hearing of November 17, and there is no basis in the Calvert  
14 Cliffs decision, therefore, for the Board to consider a  
15 challenge of this sort.

16 There is a more basic question, of course, that I thi  
17 think directs the Board to the conclusion that it may not  
18 consider these issues, and that is the fundamental relation-  
19 ship between an agency and hearing board established by  
20 that agency. In its December Appendix D, the Commission, after  
21 a ruling proceeding, after considering all of the comments  
22 in that ruling proceeding, promulgated the conditions under  
23 which the Board may consider environmental issues. It was  
24 clear from that regulation that this Board was not  
25 empowered to consider environmental issues in this

1 proceeding, and we believe it would be a violation between  
2 the Agency and this Board if environmental issues were to be  
3 considered by the Board.

4 Turning briefly to the substance of the challenge  
5 to the regulation which the intervenors have raised, it is our  
6 basic position, as set forth in our briefs, that the  
7 National Environmental Policy Act, which is an extremely genera-  
8 lized and vague statute, did not require the Commission, imme-  
9 diately upon enactment of the Act, to consider in its adjudi-  
10 catory proceedings all of the environmental issues which are  
11 encompassed by that statute.

12 It is our basic position that the Commission was  
13 authorized by the National Environmental Policy Act to act  
14 in a quasi-judicial character; that the Commission was  
15 required by Section 103 to examine the statute and its  
16 regulations and to either propose new legislation or amendment  
17 to its rules to enable it to comply with the specific directives  
18 of Section 102 of the statute.

19 We submit that the Commission acted in a reasonable  
20 and timely fashion in examining its statute and its regulations  
21 and promulgating in December of 1970, 11 months after enactment  
22 of the National Environmental Policy Act, the December  
23 appendix.

24

25

1 CHAIRMAN JENSCH: Excuse me, may I interrupt?

2 I don't have the proposed June Appendix D. Are  
3 you able to comment as to what its character was? Did it say  
4 in June it would consider environmental policy considerations?

5 MR. TROSTEN: It did not say so, Mr. Chairman. It  
6 was not until the December Appendix D which was a fundamental  
7 change in the content of the Commission's regulations.

8 CHAIRMAN JENSCH: Is there any question in your  
9 mind as to whether there was notice given of the kind of  
10 rule that was adopted?

11 MR. TROSTEN: I believe adequate notice was given.

12 CHAIRMAN JENSCH: What I have in mind is this:  
13 They proposed X and they did Y. The rule-making procedure,  
14 as I understand it, would be the kind of rule they intend  
15 to adopt. If they didn't intend to adopt X should they  
16 have proposed the rule Y and found facts for the content  
17 as reflected in proceeding Y?

18 MR. TROSTEN: It is my belief that an agency  
19 which promulgated a proposed rule and receives a multitude  
20 of comments on that proposed rule and takes them into  
21 consideration, may there upon promulgate as a firm rule a  
22 rule which is different from that which is proposed. This is  
23 the purpose of a proposed rule-making and they are not  
24 required to republish a proposed rule.

25 CHAIRMAN JENSCH: The problem I have is that this

1 may be a part of the considerations. The Board is not  
2 making any decision but the Board may frame its certification,  
3 if it decides to certify, as to whether Appendix D adopted in  
4 December 4th is within the range of that prescription to which  
5 you refer.

6           Supposing an agency, without regard to the  
7 Atomic Energy Commission, but supposing an agency says  
8 "We propose M, N, and O," and people come in and comment  
9 about M, N, and O, and the rule came out dealing with X, Y,  
10 and Z. On a completely different subject. Does the fact  
11 that they propose something in M, N, and O authorize them to  
12 adopt X, Y, and Z?

13           MR. TROSTEN: Mr. Chairman, I understand the question  
14 you are raising, I would respectfully observe this question  
15 has not been raised for determination by the Board by any  
16 of the parties of this proceeding.

17           CHAIRMAN JENSCH: That may be but I am raising it  
18 here as to whether or not there is a validity that the  
19 Commission might want to re-examine. Because as I understand  
20 it rule-making is not entirely discretionary and is intended  
21 to provide a means by which the public may be informed as to  
22 what an agency proposes to do.

23           Now, they have to stay within M, N, and O which is  
24 what they propose to do. If they come up with X, Y, and Z  
25 with nobody having a chance to comment on it, the purpose of

1 the rule-making is not fulfilled. Because if people thought  
2 it was going to be X, Y, and Z they may have had different  
3 comments.

4 I just wonder whether the scope of the rule-making  
5 is such that a man can do whatever he wants. I would think  
6 there are bounds for the rule-making proceedings.

7 MR. TROSTEN: Mr. Chairman, no doubt there must be  
8 bounds for the rules of the proceeding. I observe that the  
9 Commission published a proposed rule in June and thereupon  
10 at the receipt of comments, some of which urged the  
11 Commission to adopt the stance that it took in the December  
12 Appendix D published the December Appendix D that environment  
13 at proceedings could be considered in connection with these  
14 proceedings.

15 Also the Commission published its comments as  
16 a rule to be effective January 4, 1971. I would make a  
17 statement that I do not believe it is necessary for the Board  
18 to criticize the question.

19 CHAIRMAN JENSCH: Well, the reason I raised the  
20 question was the condition, as I understand the rule-making,  
21 when they provide for a certain type of application or  
22 procedure, some fact-finding has to be undertaken.

23 I wonder if that was adequately presented to the  
24 Commission.

25 What facts, in looking into the situation, they

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1 could consider them, there is no question about that, but what  
2 facts justified the selection of the March 4th date? What were  
3 the facts found by the Commission for that date?

4 I understand they have said orderly transition  
5 produces that but what are the factors that made that so  
6 important because as I understand the argument here this  
7 morning, they found in one case it wasn't necessary to have  
8 that orderly transition. Although I don't know what the  
9 facts were there to come to that conclusion.

10 So I am having trouble with the factual basis for,  
11 the rule-making proceeding.

12 MR. TROSTEN: I have not yet had an opportunity  
13 to ready the government's brief in the Calvert Cliffs case.  
14 It may well be they address themselves to some degree to that  
15 point.

16 CHAIRMAN JENSCH: All right, excuse me, you may  
17 proceed.

18 MR. TROSTEN: I would like to conclude my statement  
19 with regard to the substantive validity of the Commission's  
20 implementation of a National Environmental Policy Act in its  
21 December Appendix D by stating that the Commission, after  
22 having completed its review of its law and regulations as  
23 required by Section 103 of the statute promulgated on a timely  
24 basis the December Appendix D.

25 Included in the December Appendix D is a provision

1 is a provision that several factors, including the need for  
2 an orderly transition and the need for power required that  
3 environmental issues not be raised -- could not be raised  
4 in a duplicatory proceeding noticed for hearing prior to  
5 March 4, 1971.

6 We submit this was a reasonable act for the  
7 Commission to take and it was particularly reasonable with  
8 regard to hearings on operating licenses. We feel because of  
9 the generality of the National Environmental Policy Act the  
10 Commission's determinations pertaining to the implementation  
11 of the statute are entitled to equally great weight.

12 On that basis, Mr. Chairman, we would submit that  
13 in the event the Board did have the authority to consider  
14 these issues in these proceedings, it would conclude  
15 that these actions promulgating Appendix D and providing  
16 for the March 4 transition period was reasonable.

17 CHAIRMAN JENSCH: I believe you mentioned earlier  
18 that you would have no objection to certifying this question.

19 Is that a fair statement?

20 MR. TROSTEN: I said, Mr. Chairman, I would not  
21 object the Board certifying to the Commission the question  
22 whether the Board has the authority to supplement the issues  
23 in this proceeding.

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1 CHAIRMAN JENSCH: I don't think the Board will  
2 certify that question. I think the question that the Board  
3 may have under consideration as to when the decision will be  
4 made is to whether the Environmental Policy Act requires con-  
5 sideration in this proceeding. I wonder if some facts should  
6 be developed into the record by the Commission if that type  
7 of question is certified.

8 For instance, should there be consideration here  
9 as to whether Consolidated Edison needs an orderly transition  
10 to get the benefit of this March 4th date, since the Commission  
11 has undertaken and has found that it wasn't necessary to have  
12 the orderly transition.

13 Do I make the point?

14 MR. TROSTEN: Yes.

15 CHAIRMAN JENSCH: I wonder if the factual basis  
16 would be helpful to the Commission in that regard. Would you  
17 give us a comment on that?

18 MR. TROSTEN: We do not object to the Board  
19 certifying to the Commission the question whether environmental  
20 issues should be considered in this case by the Board and what  
21 the Board's determination of that question should be.

22 Now would we object to a certification to the  
23 Commission of the question whether the provision in the  
24 Commission's rule which provides a blanket exemption for hearings  
25 which are noticed before March of 1971 is proper or not.

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1 We would not object to that question being certified.

2 CHAIRMAN JENSCH: I think the question I would pro-  
3 pound to you, however, was in connection to both of those  
4 things, is some factual basis likely to be helpful to the  
5 Commission in consideration of those question if they were  
6 certified.

7 For instance, this hearing for all practical purposes  
8 hasn't started. We have received and the record has indicated  
9 the evidence from the Applicant, as reflected by the FSAR and  
10 related matters and we have received the Staff Evaluation,  
11 but there hasn't been, except for that formal receipt, really,  
12 a great deal of progress in this case.

13 We are exhausting procedural inquiries for data  
14 and that type of thing which I think is very helpful and  
15 which I think will expedite the presentation of evidence and  
16 the actual hearing time required for this proceeding.

17 But is this proceeding somewhat in the same  
18 position as the Vermont Yankee is in which an orderly transi-  
19 tion wasn't needed and maybe an orderly transition isn't needed  
20 for Con Edison.

21 MR. TROSTEN: I would like to comment that. It  
22 was my understanding that the notice of hearing in the Vermont  
23 Yankee proceeding provides for consideration of environmental  
24 issues because of the fact that this hearing was noticed  
25 earlier than would normally have been the case under Commission

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1 practice.

2 I believe that the situation in the Indian Point 2  
3 proceeding is entirely different. The notice of hearing in  
4 this proceeding was issued in November of 1970 and I would sub-  
5 mit that the two cases are really quite different, sir.

6 The timing of the two cases are quite different.

7 CHAIRMAN JENSCH: But the issue in the Consolidated  
8 Edison case as to which notice of hearing was issued on  
9 November 18th states something like this.

10 Had the facility been completed in accordance  
11 with the construction permit, which might permit the inference  
12 that the Commission is making inquiry as of the time of  
13 November 17th, has it been completed. As I understand the  
14 statement here it has not been completed.

15 There is some regulation that might permit a different  
16 approach to that problem but the issue has been followed in  
17 that statement of the regulation in that the issue also says  
18 and I think the statute says when it has been completed, when  
19 the construction has been completed and with the filing of such  
20 additional data to bring it up to date, the Commission may  
21 then, if there is no good cause shown to the contrary, may  
22 issue a license.

23 So I think we still have the question here in  
24 which it has been completed and therefore the orderly transition  
25 may not be necessary.

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1 MR. TROSTEN: Mr. Chairman, I don't see the  
2 connection between the issue, if any, posed by the language of  
3 the Commission's regulations that become effective in April  
4 of 1970, which requires that one of the findings be that the  
5 facility be substantially completed and this question of the  
6 need for an orderly transition period under the National  
7 Environmental Policy Act which is encompassed by 10 CFR,  
8 Appendix D.

9 I would submit that the issue of substantial com-  
10 pletion relates to the matter of an orderly -- I am sorry, a,  
11 reasonable period from the time that the Board receives  
12 evidence in the hearing concerning the state of completion  
13 of the plant and the time that the actual operating license  
14 is issued.

15 We would say, Mr. Chairman, that the language of  
16 10 CFR 50.57 dealing with substantial completion is an entirely  
17 reasonable implementation of Section 185 of the Atomic Energy  
18 Act of 1954 and does not bear a relationship to this question  
19 of transition under 10 CFR, Appendix D.

20 CHAIRMAN JENSCH: What is the orderly transition?  
21 What does that mean?

22 MR. TROSTEN: 10 CFR, Appendix D?

23 CHAIRMAN JENSCH: Yes.

24 MR. TROSTEN: The orderly transition referred to  
25 there is the orderly transition with respect to proceeding in

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1 which the only consideration given by the Atomic Energy  
2 Commission regulatory process related to radiological health  
3 and safety considerations, to the new situations reflected by  
4 10 CFR, Appendix D, after March 4, 1971, in which the AEC's  
5 regulatory jurisdiction will encompass not only its traditional  
6 scope but also the environmental considerations set forth in  
7 the National Environmental Policy Act.

8           It is our position that the National Environmental  
9 Policy Act, which was such a radical change -- which affected  
10 such a radical wrapping of new authority onto the authority  
11 of the Atomic Energy Commission and other regulatory agencies  
12 necessarily contemplated an orderly transition period so that  
13 the affected agencies, particularly the Atomic Energy Commis-  
14 sion could change their regulations, acquire the additional  
15 expertise and prepare themselves to comply with their new  
16 responsibilities.

17           We submit there is a particular importance to this  
18 orderly transition period with regard to facilities which  
19 have received construction permits and are nearing the point  
20 at which they would receive operating licenses because of the  
21 period of time involved since the facility had been planned  
22 and designed, the extreme economic consequences associated  
23 with suddenly changing the ground rules under which the  
24 facility would be considered and in addition the need for  
25 power from this particular facility.

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1 So these are the bases underlying the orderly  
2 transition period as reflected in Appendix D.

3 CHAIRMAN JENSCH: Is the term "orderly transition"  
4 included in the National Environmental Protection Act?

5 MR. TROSTEN: The words "orderly transition" do  
6 not appear in the National Environmental Protection Act. The  
7 concept is retained in the National Environmental Policy  
8 Act. It is contained throughout the National Environmental  
9 Policy Act by the structure of Section 102 and Section 103,  
10 by relationship between these two sections, by the legislative  
11 history of the statute.

12 CHAIRMAN JENSCH: While perhaps it doesn't have  
13 any particular bearing here, but just as an aid to understanding  
14 the problem that the Board may like to consider, whether to  
15 certify or not, do you know what the date of adoption of  
16 regulations in compliance with the National Environmental  
17 Policy Act have been for the other agencies of the government,  
18 for instance, the Federal Power Commission, the Interstate  
19 Commerce Commission or Department of Interior, Department of  
20 Commerce?

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1 MR. TROSTEN: Mr. Chairman, I do not have that  
2 information readily at hand. I know there are some agencies  
3 which have not yet promulgated their regulations, all of their  
4 regulations under the National Environmental Policy Act. I  
5 do know the Atomic Energy Commission's promulgation of its  
6 regulations concerning a preparation of detailed statements,  
7 one of the conditions imposed upon it, was among the earliest  
8 if not the earliest of the Federal agencies.

9 CHAIRMAN JENSCH: Well, suppose the Interstate  
10 Commerce Commission, instead of our Commission made the National  
11 Environmental Policy Act immediately effective, requiring  
12 consideration in all the hearings then going on or to be  
13 started and required determinations on all of the National  
14 Environmental Policy Act matters immediately? I just wondered  
15 whether the problem about the transition had arisen in  
16 reference to the utilities, both electric and gas, for  
17 instance, under the Federal Power Commission?

18 MR. TROSTEN: I am afraid I don't have at hand the  
19 information you are seeking. I would comment that the speed  
20 at which the various agencies implemented the National  
21 Environmental Policy Act and the manner in which they imple-  
22 mented it would be different because of the scope of the  
23 authority of the various agencies.

24 The Atomic Energy Commission, as determined by Court  
25 decision prior to the National Environmental Policy Act, did

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1 not have a public interest jurisdiction. It was limited to  
2 matters of consideration of common defense and safety and the  
3 public health and welfare, and hence it is understandable that  
4 the manner of implementation of NEPA would differ among the  
5 agencies.

6 CHAIRMAN JENSCH: Well, supposing a gas utility  
7 under the Federal Power Commission applies to the Power  
8 Commission for a certificate to construct a pipeline. That  
9 application and consideration thereof requires reconsideration  
10 of environmental matters? By the same token, if the utility  
11 has a nuclear power plant, when it comes to the Atomic Energy  
12 Commission, although it is the same utility, for the gas  
13 transmission it has to have reconsideration, but for atomic  
14 energy it doesn't have to have it unless the notice of  
15 hearing was issued afterwards.

16 I wonder if you can get a definition for the kinds  
17 of considerations for those applications?

18 MR. TROSTEN: Mr. Chairman, I would say under the  
19 hydroelectric situation --

20 CHAIRMAN JENSCH: Take gas.

21 MR. TROSTEN: I would hesitate to comment  
22 authoritatively myself under the Natural Gas Act.

23 CHAIRMAN JENSCH: Well, I just inquire because it  
24 might effect it if the Board expects to submit for certifica-  
25 tion, what problems the Board would like to have resolved to

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1 some extent, anyway.

2 DR. BRIGGS: Mr. Trosten, I believe the Applicant has  
3 prepared an Environmental Report and then has revised that  
4 Environmental Report, is that not right?

5 MR. TROSTEN: The Applicant has prepared an Environ-  
6 mental Report. It is dated August 6, 1970, and was prepared  
7 in accordance with the Atomic Energy Commission's Regulations.  
8 The Applicant has not revised this report. It has commented  
9 on the views of Federal agencies which were expressed concern-  
10 ing that report.

11 On December 17, 1970, the Applicant prepared another  
12 document entitled "The Environmental Impact of Indian Point  
13 #2 Facility." This was not a revision or updating of the  
14 Environmental Report in a formal sense. It was a document  
15 prepared for the information of the public which provided  
16 certain additional information for the benefit of the public  
17 concerning the plant, but it did not represent a revision as  
18 such of the August 6, report.

19 DR. BRIGGS: Do you think these reports meet the  
20 requirements of NEPA or do you think they would have to be  
21 extensively revised in order to meet such requests?

22 MR. TROSTEN: I believe that the report that has  
23 been filed by the Applicant in these proceedings meets the  
24 requirements of the Atomic Energy Commission's Regulations and  
25 the requirements of the National Environmental Policy Act.

1 DR. BRIGGS: One other question.

2 You indicated that you had some discussion concerning  
3 the date that the hearing for this Indian Point #2 plant was  
4 set. Were these at the time that the Atomic Energy Commission  
5 would normally set the date for hearing or were they requested  
6 by Con Ed that they be set at a time that was actually  
7 earlier than the Atomic Energy Commission normally sets them?

8 MR. TROSTEN: I believe these hearings were set at  
9 a time that would be characterized as normal for the Atomic  
10 Energy Commission. These were set after the Staff had completed  
11 its review and I would consider them to be normal in relation  
12 to other cases.

13 DR. BRIGGS: Thank you.

14 CHAIRMAN JENSCH: If there is nothing further, may  
15 we hear from the Staff?

16 MR. KNOTTS: For the benefit of the public, before  
17 I begin I might point out that Mr. Roisman's remarks before  
18 lunch and Mr. Trosten's remarks just now and the remarks I am  
19 about to make are in the nature of legal argument. Each of  
20 the attorneys representing the various parties are entitled  
21 to their opinion, of course, but in no event should those  
22 opinions be taken as established assessments of what has  
23 actually occurred, what the AEC has said or how the AEC's  
24 performance and implementation and compliance with the National  
25 Environmental Policy Act of 1969, for example, has been

1 judged by others, particularly others in a position to judge.

2 My comments again are in the nature of legal argu-  
3 ment, they are certainly not evidence in this proceeding.

4 As to the motion which is under consideration regarding  
5 the March 4th date, to use a shorthand term, the Staff's answer  
6 to the motion on this point has been filed in writing and we  
7 will shortly, as stated therein, supplement our motion with  
8 the briefs for respondents in the United States Court of Appeals  
9 for the District of Columbia.

10 That is now available and we hope to have copies in,  
11 a few days to circulate to all the parties.

12 CHAIRMAN JENSCH: And the Board, if you please.

13 MR. KNOTTS: I beg your pardon. The Board as well.

14 CHAIRMAN JENSCH: We are not regarded as a party,  
15 I hope.

16 MR. KNOTTS: No, sir.

17 Let me begin with some of Mr. Roisman's points more  
18 or less in the order raised, and offer some comments on them  
19 as we go along.

20 Starting with the matter of Calvert Cliffs case,  
21 his description of the parties' respective positions on the  
22 tests laid down by the Commission in that Baltimore Gas and  
23 Electric matter concerning the attack of AEC Regulations is  
24 fair enough, and I think no further comment on our part is  
25 required.

1 I think our position in a nutshell is that Appendix  
2 D can be challenged in a proceeding like this under the ground  
3 rules laid down in Calvert Cliffs.

4 CHAIRMAN JENSCH: May I have your comment on whether  
5 or not, assuming the Board would certify some question to  
6 the Commission, in your opinion would it be helpful to have some  
7 factual background for certification in reference to the  
8 matters generally indicated in the Commission's Calvert Cliffs  
9 decision?

10 MR. KNOTTS: I think a reasonable amount of factual  
11 background relating to the nature of the inquiry that has been  
12 such as the problem in the Board's mind a substantial question,  
13 would be in order.

14 CHAIRMAN JENSCH: Thank you. Proceed.

15 MR. KNOTTS: Next a rather fine point: Mr. Roisman  
16 indicated that the Staff had offered its detailed statement  
17 to show compliance with the National Environmental Policy Act.  
18 In Staff's view the immediate requirement which is applicable  
19 to the Staff and to the other parties of the proceeding is  
20 Appendix D of 10 CFR 50, and our offer in fact was in terms  
21 of Appendix D, 10 CFR 50.

22 The Commission has made the judgment about how  
23 NEPA should be implemented and the Staff has followed what  
24 the Commission told it to do.

25 Next, Mr. Roisman said, this is not necessarily the

1 next thing he said -- this is just the next thing I want to  
2 comment on -- that NEPA requires consideration in environmental  
3 matters and detailed statements on those matters in the  
4 public hearing.

5 The Commission has not suddenly arrived at the  
6 position where it has said it is wrong in excluding heretofore  
7 from hearing considerations of environmental matters or  
8 detailed statements. Instead it has added to pre-existing  
9 implementation of NEPA, dated April, 1970, the reports required  
10 from the Applicants, detailed statements, which should not be,  
11 placed down -- these are a significant extension of the  
12 Commission's jurisdiction.

13 These contain compliance with non-radiological and  
14 environmental data. The Commission was of the view that its  
15 exercise of the discretion conferred on it by NEPA prior to  
16 December 4th was an appropriate one and consideration of  
17 such matters in public hearings was also appropriate, and the  
18 commission ultimately decided after the comments of a number  
19 of organizations that it would be appropriate also to extend  
20 this implementation of NEPA by considering these matters in  
21 public hearings.

22 I inferred from what Mr. Roisman was saying, and I  
23 don't have the transcript before me, and CI don't want to  
24 characterize what he said unfairly, but I inferred that what  
25 he said was that the AEC had done essentially nothing about

1 the Act.

2 In point of fact, AEC was the first agency to put  
3 out rules implementing the National Environmental Policy Act.  
4 They came out before the guidelines on environmental quality  
5 itself -- which was the organization established by the  
6 National Environmental Policy Act. Moreover, last fall a  
7 member of the Council on Environmental Quality was asked in  
8 testifying before a Congressional Committee inquiring as to the  
9 implementation of NEPA by Federal agencies what agency had done  
10 the best job, and his judgment was that the AEC had.

11 CHAIRMAN JENSCH: Did he speak about jurisdiction or  
12 state operations?

13 MR. KNOTTS: It was in the context of detailed  
14 statements, Mr. Chairman.

15 I refer Mr. Poisman -- Mr. Poisman prefers the  
16 position where the AEC would look behind the State standards,  
17 and I suggest this is contrary to the trend in environmental  
18 law where an agency such as the AEC would be empowered to look  
19 behind the State which is closest to the problem, and presumed  
20 most expert about it, and decide it, and even in this judgment  
21 reached the conclusion the state standards are unreasonably  
22 strict and should be the last.

23 CHAIRMAN JENSCH: Are you suggesting then with  
24 respect to this Vermont situation, where there is a conflict  
25 between the state agencies up there, they better resolve

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between themselves up there and come up with one answer as to which the Atomic Energy would defer to that determination? Is that correct?

MR. KNOTTS: Based only on present accounts, I understand the Governor of Vermont has called his people together to -- including the Attorney General -- and the other cognizant authorities and asked them to come up with a single position.

CHAIRMAN JENSCH: That wasn't my question, whether it applied to Vermont or Minnesota. Some one agency of the state should resolve the matter or there should be some one agency from the state to which the Atomic Energy Commission could defer?

MR. KNOTTS: Yes, sir.

CHAIRMAN JENSCH: In other words, further proceedings might be necessary before a state agency rather than have the Atomic Energy Commission tell Vermont what it should do?

END#22

1 MR. KNOTTS: Yes, one can visualize the situation  
2 where we are inflicting an overriding state standard and it  
3 would be impossible to resolve the situation as a practical  
4 matter. You wouldn't know which state standard to comply with.  
5 Nobody would know.

6 CHAIRMAN JENSCH: How would you apply that to  
7 Vermont and New Hampshire?

8 MR. KNOTTS: I will get to that under the Water  
9 Quality Act, there is a provision made for that which I  
10 recently had some contact with.

11 CHAIRMAN JENSCH: Speaking of water quality standards,  
12 that has been used here as an example of standards within  
13 Appendix D as standards subject to National Environmental  
14 Policy Act.

15 The AEC's position is that the Water Quality  
16 Improvement Act of 1970 which amended the Water Pollution  
17 Control Act supersedes the National Environmental Policy Act  
18 to the extent it applies. There is exclusive statutory  
19 provision in the National Policy on this and agreement  
20 with respect to bills, Senator Muskie and Senator Jacobson, on  
21 respective fitting together of Water Quality and NEPA in  
22 this regard is in the legislative history.

23 Perhaps now we can get to some of the Vermont  
24 Yankee matters. It remains to be seen in that case whether  
25

1 the certification is valid and as I mentioned it is hoped that  
2 the state agencies would get together and come up with a  
3 single position in that case.

4 There is a draft detailed statement being circulated  
5 by the Staff at this time and it is a draft, it does not say  
6 we find no action in the matter of whether the Applicant is  
7 going to comply with the standards. It says that the  
8 permit in effect unaccountably makes no mention of a well-  
9 known phenomenon which is that all cooling towers have blow  
10 downs and some provision must be made for either cooling the  
11 blowdown or for allowing it to be discharged.

12 My understanding is that in cooling tower design  
13 it is not feasibly normally made provisions for cooling and  
14 blowdown.

15 Now, as to the matter of New Hampshire and its  
16 disagreements with Vermont water quality standards, there is  
17 an explicit provision in the Water Quality Improvement  
18 Act, Section 21(b), Subsection 2 for a state in the posture  
19 such as the State of New Hampshire to request a hearing.

20 I have personally been in contact with special  
21 counsel for the water quality authorities in the State of  
22 New Hampshire and we understand the state intends to request  
23 a hearing provided for by Section 21(b)(2) which is a  
24 separate matter from the hearing being conducted under  
25 Section 189 noticed for hearing on February 7 in the Federal

1 Register.

2 There has been some discussion of the matter  
3 whether the question should be certified to the Appeals Board  
4 regarding the Vermont Yankee notice of hearing in contra-  
5 distinction to the notice of hearing in this proceeding.

6 CHAIRMAN JENSCH: Didn't the Calvert Cliffs  
7 decision come down at a time when the Appeals Board was in  
8 existence but the Commission's decision was to certify this  
9 to the Commission?

10 MR. KNOTTS: I believe, if my memory is correct,  
11 that it was prior to the formal establishment of the  
12 Appeals Board.

13 CHAIRMAN JENSCH: Very well. Proceed.

14 MR. KNOTTS: I believe we have that in our brief  
15 in answer to the motion.

16 CHAIRMAN JENSCH: Very well, proceed.

17 MR. KNOTTS: I believe your assurance to the  
18 question was that the Commission was explicit by consideration  
19 of non-radiological and environmental matters in the Vermont  
20 Yankee notice and it could have been equally explicit in a  
21 notice in this proceeding. Perhaps a more detailed answer  
22 would take account of the fact that the Vermont Yankee notice  
23 was published seven days prior to March 4th or approximately  
24 seven days. At any rate February 27th.

25 In addition, that notice was published prior to  
the time when in the ordinary course of things a notice of

1 hearing would be published. That is to say prior to the  
2 issuance of an AEC safety evaluation. The purpose of that  
3 obviously is to permit the parties to engage in such pretrial  
4 activities as are required to become parties at an early  
5 enough date for them to adequately prepare for hearing.

6 The Chairman raised the question with Mr. Trosten  
7 regarding the regularity of rule-making procedures on the  
8 December 4th Appendix D. I too note that an 80-day comment  
9 period was provided beyond the 30-day effectiveness. The  
10 Commission did note the factors which it has taken into account  
11 in deciding the transition date.

12 One further comment on something which Mr. Trosten  
13 said and perhaps I didn't understand him clearly and perhaps  
14 he didn't have particularly in mind the thought that I did.  
15 His comment was to the effect that the regulatory jurisdiction  
16 of the Commission was changed in the December 4th Appendix D  
17 over what had been there before.

18 I think our position on that would be that the  
19 regulatory jurisdiction of the Commission changed a long time  
20 prior to that. That jurisdiction was implemented by license  
21 conditions and detailed statements and the other requirements  
22 on the April 2nd and June 3rd policy statement.

23 CHAIRMAN JENSCH: Before you leave this subject,  
24 I was looking at the December 4th Appendix D and I believe you  
25 mentioned that the Commission recited the factors it considered

1 for the adoption of that Appendix D and I infer that you were  
2 referring to matters that the Commission found advisable  
3 for the orderly transition.

4 I wonder to what sections were you referring?

5 MR. KNOTTS: I was referring to, I believe, the same  
6 thing the Chair was referring to, the basis for an orderly  
7 transition.

8 CHAIRMAN JENSCH: Where are those?

9 MR. KNOTTS: I am looking for a provision.

10 MR. ROISMAN: If I may suggest, those bases were  
11 stated in the Federal Register publication, I don't know what  
12 has been reproduced in what you have there. But when they  
13 made the rule-making they put in several pages explaining why  
14 they took various positions.

15 One of those pages, if I remember correctly, a  
16 paragraph that stated it was the need for power that required  
17 an orderly transition period in the selection of the March  
18 4th date. But that statement of reasons does not appear in  
19 Appendix D as written in 10 CFR Part 50.

20 CHAIRMAN JENSCH: Well, paragraph 3, to which you  
21 refer reads as follows: "In order to provide for an orderly  
22 period of transition in the conduct of the Commission's  
23 regulatory proceedings and to avoid unreasonable delays  
24 in the construction and operation of nuclear power plants  
25 urgently needed to meet the national requirements for electric

1 power the issues described in paragraph 2 above may be raised  
2 only in proceedings in which the notice of hearing in the  
3 proceeding is published on or after March 4, 1971."

4 I understand that is the conclusion but I am looking  
5 for the factors that justify that conclusion.

6 I understood Staff counsel said that the Commission  
7 recited the fact that led to that conclusion. I haven't been  
8 able to find it.

9 MR. KNOTTS: Well, if you mean in the sense of an  
10 initial decision in a licensing proceeding, I don't believe  
11 there is any such thing.

12 CHAIRMAN JENSCH: I don't mean an initial decision  
13 but it has been my understanding that rule-making that  
14 purports to establish the necessity for a certain course of  
15 conduct is compelled by some determination that the facts  
16 are present of that character.

17 For instance, the knife is hanging over their heads  
18 or something and it is going to drop pretty soon if we don't  
19 provide for a time element right away.

20 I don't find any crisis factor mentioned here that  
21 said they have to do that for that reason. Where are the  
22 facts that said it should be done? I think rule-making  
23 necessarily involves factors.

24 MR. ROISMAN: Mr. Chairman, I don't usually make  
25 the arguments for my opponents but it is all there on the record.

1 I think before that paragraph there is at least one reference  
2 to a statement by Chairman Machiches of the Federal Power  
3 Commission relating to the national need for power. We don't  
4 consider that reference to the one statement made by the  
5 Chairman of the Federal Power Commission would be the kind  
6 of evidence you are looking for but I do think earlier in the  
7 same notice in the part you are reading there was some reference  
8 to that, perhaps in the footnote and I don't remember whether  
9 it said that Chairman Machiches made that statement to the  
10 AEC or AEC was taking notice of it or how it came about.

11 CHAIRMAN JENSCH: I have some recollection of such  
12 a reference, I don't readily find it but again the factors I  
13 am looking for are those factors that justify an orderly  
14 period of transition in the conduct of the regulatory  
15 proceedings.

16 Now, how many cases were set for hearing during  
17 1970? Was there 75 or 100 that couldn't be accommodated  
18 or were there two or three? The reason I am asking is -- I  
19 don't disagree with whatever the Commission decides, this Board  
20 must comply with the Commission's regulations but in trying to  
21 frame a matter for certification, my inquiry is solely whether  
22 we should present to the Commission for its consideration  
23 on some matter of certification whether this Applicant has  
24 factors within the scope of the consideration for orderly  
25 transition that the Commission considers in adopting December

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4, 1970. There is no question that this Board will comply explicitly with the regulations of the Atomic Energy Commission.

My inquiry and all of my inquiries on this matter are an aid as to what type of question we can certify to the Commission.

End #23

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1 MR. ROISMAN: Just in conjunction with the one  
2 question you asked, in a brief which we filed in the U. S.  
3 Court of Appeals, of which you have a copy, when we filed our  
4 motion in this case, we had included in the Court of Appeals  
5 brief, but not here, a brief of Appendix A which listed as  
6 we found in the Federal Register all of the notices of hearings  
7 and all of the hearings which could have been completed in  
8 1970.

9 If the Board would like we would be happy to  
10 provide that appendix. Without swearing to its accuracy,  
11 that we pick up every one. We just read through the index  
12 of the Federal Register and hope that we picked up every  
13 licensing proceeding. I seem to remember that there were  
14 some 20 or 30 either operating licenses or construction permits  
15 that actually had permits issued.

16 CHAIRMAN JENSCH: How many operating license  
17 considerations were pending after January 31, 1970?

18 MR. ROISMAN: I think that was maybe the larger  
19 number, maybe just 10 or 11 or 12. I am not sure on that.

20 MR. TROSTEN: Mr. Chairman, may I make an observa-  
21 tion?

22 CHAIRMAN JENSCH: Yes.

23 MR. TROSTEN: First of all, I would like to call  
24 the Board's attention for information to page 1847 of the  
25 Friday, December 4, 1970 Federal Register in which the footnote

ln2 1 to which we have earlier referred is contained and also there  
2 is an additional paragraph or two discussing the matter of  
3 power needs and electric power shortage.

4 I would also like to make this observation,  
5 Mr. Chairman. The December 4th Appendix D which contains the  
6 March 4, 1971 cutoff date does not suggest, in our view,  
7 Mr. Chairman, that it is necessary for boards to make a  
8 determination in individual licensing cases whether there is  
9 a need for an orderly transition with regard to a particular  
10 case at hand.

11 We submit that the regulation is quite clear that  
12 the March 4, 1971 date applies simply to whether or not the  
13 proceeding has been noticed prior to that date or after that  
14 date and that the situation with Vermont Yankee is different  
15 for the reasons already discussed, the issues in that case are  
16 different and they have been stated to be different and there  
17 is a reason.

18 But this does not require the Board to inquire as  
19 to whether there are factors in a particular case before it  
20 to lead to a similar conclusion.

21 CHAIRMAN JENSCH: I don't think that is the  
22 question. The question is if the Intervenors here are attacking  
23 the application of December 4th Appendix D, under the permission  
24 granted by the Commission in its Calvert Cliffs memorandum or  
25 order, then the question of what kind of question can be

ln3 1 certified to the Commission and what kind of factual background  
2 would be helpful to the Commission, these are the reasons for  
3 my inquiry as to what was the orderly transition that the  
4 Commission considered and can we submit facts to them for  
5 their consideration within or are they without the scope of  
6 the definition that the Commission devised for the December 4th  
7 Appendix D.

8 It is in aid of a certification problem, not  
9 merely that any board should raise the question of March 4th  
10 at all. I think the regulation as it is written obligates this  
11 Board and all boards to comply explicitly with that regulation.

12 When the question is raised, however, as the  
13 Environmental Defense Fund has done challenging then, then  
14 the question is what kind of factors should be considered  
15 which would be helpful to the Commission.

16 Very well, does the Atomic Energy Council of the  
17 State of New York have some comments?

18 MR. SCINTO: Yes, Mr. Chairman. We did not respond  
19 to the written motion of the Environmental Defense Fund or  
20 the Hudson River Fishermen's Association concerning the  
21 motion. However, I would like to respond to the additional  
22 oral motion which Mr. Roisman made this morning in his oral  
23 arguments.

24 By that I mean that the Board consider water quality  
25 factors within the framework of this proceeding if it takes

ln4 1 into account NEPA issues. That would be requesting to  
2 disregard the Water Quality Improvement Act of 1970 which,  
3 whether or not the Board will hear nonradiological environment  
4 effects, one of the nonradiological effects it may not hear  
5 within the framework of this proceeding are the water quality  
6 effects which are covered by Section 21(b) of the Water Pollution  
7 Control Act as amended by the Water Quality Improvement Act  
8 of 1970.

9 It may be done by those provisions and the procedures  
10 set forth.

11 CHAIRMAN JENSCH: And that constitutes your entire  
12 response to the motion?

13 MR. SCINTO: Yes, Mr. Chairman.

14 CHAIRMAN JENSCH: Very well.

15 Is there any other comment that we can hear at  
16 this time? If not, the Board will give consideration to the  
17 several arguments that have been made.

18 Let us proceed with the request of the Applicant  
19 that certain evidence will be adduced at this time. Is that  
20 the request?

21 MR. TROSTEN: Yes.

22 MR. ROISMAN: Mr. Chairman, we would like to request  
23 now, if this has not been clear before, permission to file in  
24 effect a reply brief which will be the reply brief we are  
25 filing on April 1st in the Calvert Cliffs case to provide the

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1 Board with that as with the serious comments we will make.

2 CHAIRMAN JENSCH: The Board will be very happy to  
3 receive that.

4 Will you proceed, Applicant Counsel?

5 MR. TROSTEN: Yes, sir.

6 Mr. Chairman, I would like to proceed now to the  
7 matter of the offer into evidence of the answers to the oral  
8 questions addressed to the Applicant on January 19, 1971.

9 I would first ask that Mr. William Nelson stand  
10 and be sworn by the Board.

11 CHAIRMAN JENSCH: Will he be responsible for all of  
12 the evidence you propose to adduce?

13 MR. TROSTEN: No, Mr. Chairman, he and other  
14 witnesses who have previously been sworn, a total of seven  
15 witnesses in all, will be responsible for that.

16 CHAIRMAN JENSCH: Very well.

17 Whereupon,

18 WILLIAM F. NELSON

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was called as a witness on behalf of the Applicant and, having  
20 been first duly sworn by the Chairman, was examined and  
21 testified as follows:

22 CHAIRMAN JENSCH: Very well, you may proceed.

23 DIRECT EXAMINATION

24 MR. TROSTEN: Mr. Nelson, I show you a one-page  
25 document entitled, "Qualifications of William F. Nelson,"

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1 a copy of this document has been furnished to the Board and  
2 parties, and I ask you if you are familiar with the contents of  
3 this document?

4 MR. NELSON: I am.

5 MR. TROSTEN: Are the same true and correct?

6 MR. NELSON: Yes.

7 MR. TROSTEN: Do you desire that this document to  
8 which I have referred be included in the transcript of this  
9 hearing as your sworn testimony?

10 MR. NELSON: Yes.

11 MR. TROSTEN: Mr. Chairman, I now offer into  
12 evidence the document entitled "Qualifications of William  
13 F. Nelson" and ask that it be incorporated into the transcript  
14 as if read.

15 CHAIRMAN JENSCH: Any objection by the Staff?

16 MR. KARMAN: No objection.

17 MR. ROISMAN: Mr. Chairman, our position on the  
18 introduction of all of this will be exactly as it was with  
19 the FSAR. We reserve our rights under the applicable regula-  
20 tions to contest relevancy and other bases on which evidence  
21 can be tested and reserve our right to cross-examine.

22 With that in mind we have no objection to the  
23 introduction into the record of the evidence that will be  
24 offered today.

25 CHAIRMAN JENSCH: Those rights may be considered

ln7 1 today.

2 MR. MAC BETH: We will preserve the same rights,  
3 Mr. Chairman.

4 CHAIRMAN JENSCH: The request is granted and the  
5 Reporter is directed to incorporate into the transcript the  
6 statement of qualifications.

7 (William F. Nelson's qualifications follow.)

8 Qualifications, William F. Nelson, Radiation  
9 Safety Officer, Consolidated Edison Company of New York, Inc.

10 My name is William F. Nelson. My business address  
11 is 708 First Avenue, New York City, New York. I am the  
12 Radiation Safety Officer for Consolidated Edison and report  
13 to the Manager - Technical Services and Development Department.

14 I have held that position since 1967 and since  
15 then have been responsible for the radiation safety activities  
16 of the company, health physics and the conduct of the environ-  
17 mental monitoring at Indian Point.

18 I have studied electronic engineering at the  
19 Polytechnic Institute of Brooklyn and at the MIT Radiation  
20 Laboratory, and have studied nuclear science and radiological  
21 health and safety at the Oak Ridge Institute of Nuclear Studies,  
22 the Taft Institute, and the Shippingport Pressurized Water  
23 Reactor.

24 I was first employed by Con Edison in 1929 and  
25 have recently held the positions of Assistant Engineer in the

ln8 1 Test Bureau (1957), Health Physicist and Test Engineer in the  
2 Test Bureau (1959), and Assistant General Superintendent of  
3 the Meter and Test Department (1965).

4 I am a member of the American Nuclear Society, the  
5 Institute of Electrical and Electronics Engineers, the Health  
6 Physics Society, and the Radiation Safety Task Force of  
7 the Accident Prevention Committee of the Edison Electric  
8 Institute.

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MR. TROSTEN: Mr. Chairman, I now address myself to the six witnesses who have previously been sworn, Professor James Moore, George McAdoo, John Weisemann, William Cahill, John Crob, and Joseph Prestele.

Whereupon,

- JAMES MOORE,
- GEORGE MC ADOO,
- JOHN WEISEMANN,
- WILLIAM CAHILL,
- JOHN CROB, and
- JOSEPH PRESTELE

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

DIRECT EXAMINATION

MR. TROSTEN: Addressing myself to these men, I ask have each of you been sworn previously in this proceeding?

(Chorus of "Yes.")

MR. TROSTEN: I show you two documents entitled, "First Answers of Applicant to Questions Paised by Atomic Safety and Licensing Board on January 19, 1971," and "Second Answers of Applicant to Questions Paised by Atomic Safety and Licensing Board on January 19, 1971," the first document being marked Part I, March 11, 1971; the second document also being marked Part II, March 22, 1971. Copies of the March 11, 1971 document were distributed to the Board and the parties

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1 to this proceeding on March 12, 1971. Copies of the March 22,  
2 1971 document were distributed to the Board and the parties  
3 this morning.

4 I ask you if these documents were prepared by you  
5 or under your supervision and direction?

6 (Chorus of "Yes.")

7 CHAIRMAN JENSCH: Do you have an extra copy of Part  
8 I, somehow the transmittal -- it seems to have been overlooked.

9 MR. TROSTEN: Do all Board members wish additional  
10 copies?

11 CHAIRMAN JENSCH: We would like two of them, please.  
12 We received them from Mr. Maher. Thank you very much.

13 MR. TROSTEN: Are the statements contained in the  
14 documents to which I referred true and correct?

15 (Chorus of "Yes.")

16 MR. TROSTEN: Do you desire they be offered in  
17 evidence in this proceeding?

18 (Chorus of "Yes.")

19 MR. TROSTEN: I now offer two documents, to which  
20 I referred, in evidence and ask that they be incorporated into  
21 the transcript as if read.

22 CHAIRMAN JENSCH: Objections by the Staff?  
23 Intervenors?

24 MR. ROISMAN: No objection.

25 MR. MAC BETH: No objection.

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MR. SCINTO: I have no objection, Mr. Chairman.

CHAIRMAN JENSCH: It is understood that you will reserve the right to cross-examine in these matters.

The request is granted.

Do you have sufficient copies to give to the Reporter so he need not type it again?

MR. TROSTEN: Yes, sir.

CHAIRMAN JENSCH: The Reporter is directed to physically incorporate within the transcript Parts I and II of the Answers to the Applicant to Questions Raised by Atomic, Safety and Licensing Board on January 19, 1961.

MR. TROSTEN: Copies will be furnished to the reporter.

BEFORE THE UNITED STATES  
ATOMIC ENERGY COMMISSION

In the Matter of )  
 )  
Consolidated Edison Company of ) Docket No. 50-247  
New York, Inc. )  
(Indian Point Station, Unit No. 2) )

Answers of Applicant to Questions Raised  
by Atomic Safety and Licensing Board  
on January 19, 1971

Part I

March 11, 1971

KEY TO IDENTIFICATION OF QUESTIONS

(B) Question by Dr. Briggs

(G) Question by Dr. Geyer

(J) Question by Mr. Jensch

(Tr. 483) - Transcript Page 483

Question No. 1 (B) (Tr. 483)

"I find in the staff summary statements to the effect that the results of the Environmental Monitoring Program which has been conducted at the Indian Point for several years has shown no effect or that the releases of radioactivity have had no effect on the environment.

"I find similar statements in the applicant's summary and other reports, yet I find no evidence to this effect. It seems to me that since there now has been a considerable amount of experience in this area with measuring background, measuring the radiation levels and the other effects from the plant in operation, that it would be worthwhile and important to summarize this information in such a way that it is quite obvious to the person who reviews the summary that there have, in fact, been no detectable effects or what these detectable effects have been."

Answer:

There have been three relatively extensive sets of environmental analysis made in our case. Con Edison has maintained an Environmental Monitoring Program since 1958 in the vicinity of Indian Point; the State of New York has maintained Environmental Surveillance in the vicinity of Indian Point for almost ten years; and the New York University Institute of Environmental Medicine has conducted quantitative studies of radionuclides in Hudson River water, sediments, and biota since 1963.

The Environmental Monitoring Program conducted by Con Edison generally monitors gross amounts of beta activity in a variety of environmental samples. Were any large increase observed in the normal levels present, it would then be necessary to make specific analysis for the radioactivity present, to assess the possible dosimetric implications.

Some additional evaluation of radionuclides is made whenever gross activity measurements suggest the presence of unusual and unexpected amounts of activity.

To properly assess effects of radioactivity on man or the environment it is necessary to know the dose delivered either to man or to biota as a result of releases of radioactivity. Often the measurements of the activities in environmental samples is confused with an effect. Accordingly the only proper way to assess the

effects of radiation release into the environment is to establish a radiation dose to man or to biota associated with the release. In assessing radiation dose, it is generally necessary to measure the radionuclide content of properly selected samples, and then to infer radiation dose from a knowledge of their radionuclide content

The attached table lists radiation dosages to individuals residing near Indian Point for 1969. The year 1969 has been chosen because it was the year for which the highest liquid and gaseous releases have occurred to date from the plant. The dose to a nearby resident is so small that it cannot be measured directly. The dose was inferred from the measurement of gaseous activity at the release point and a knowledge of the meteorological dispersion. Dose from consumption of fish was calculated based upon measurements of fish by New York University. For purposes of making this estimate, a fish intake 50% higher than the United States average was assumed. The dose from plant operation to an individual living near the plant boundary with a substantial intake of Hudson River fish was about 0.4 millirems per year, about 1/2000 of the variability of natural background in the area, and 1/10,000 that at the permissible limits.

The highest dose to biota in the river from releases at Indian Point Unit No. 1 was about 120  $\mu\text{rem}/\text{yr}$  to benthic organisms completely submerged in sediments. Fish received a smaller dose, less than 2 millirads per year. Aquatic vegetation which concentrates activation products well above levels found in fish, received a maximum dose of about 0.7  $\mu\text{rem}/\text{yr}$  from Mn-54.

Radiation Dosages to Individuals  
Residing Near Indian Point (3)

		mrem/year		
		minimum	mean	maximum
Measured Natural Background:				
EXTERNAL:	Cosmic	30	30	30
	Terrestrial	40	64	125
INTERNAL:		30	30	30
Total		100	124	185

Calculated Increment from Indian Point Unit No. 1 Reactor (1969):

Gaseous Releases <sup>(1)</sup>	0.013
Liquid Releases <sup>(2)</sup>	<u>0.030</u>
Total	0.043

- (1) Calculation based on 1969 gaseous releases.
- (2) Calculation based on eating 30 grams fish/day using conservative model.
- (3) See Question 11.1 of Indian Point Unit No. 2 FSAR for greater detail.

2. (B) (Tr 484)

QUESTION:

"However, in looking at the technical specifications, I see many places where it says documents for inspection are not presently available and if such methods are developed that these inspections would take place, I would like to have information concerning what changes were made in the design of the plant or what provisions were incorporated in the detailed design of the plant for making the in-service inspection, what work was done by the applicant between 1966 and the present time to make these inspections possible, what programs the applicant will continue beyond the present date to make these inspections possible and what the schedules are for the completion of these programs." \*

ANSWER:

The following areas within the reactor coolant system pressure boundary are available for visual examination and non-destructive testing:

- 1) Reactor Vessel - The entire inside surface
- 2) Reactor Vessel Nozzles - The entire inside surface.
- 3) Closure Head - The entire inside and outside surface.
- 4) Reactor Vessel Studs, Nuts and Washers.
- 5) Field Welds between the Reactor Vessel, Steam Generators, and Reactor Coolant Pumps and the Main Coolant Piping.
- 6) Reactor Internals
- 7) Reactor Vessel Flange Seal Surface
- 8) Fuel Assemblies
- 9) Rod Cluster Control Assemblies
- 10) Control Rod Drive Shafts
- 11) Control Rod Drive Mechanism Assemblies
- 12) Main Coolant Pipe External Surfaces (except for the foot penetration of the primary shield)
- 13) Steam Generator - The external surface, the internal surfaces of the steam drum, and channel head.
- 14) Pressurizer - The internal and external surfaces.
- 15) Reactor Coolant Pump - The external surfaces, motor and Impeller.

\* "As I look at the technical specifications there are several places that indicate that inspections will take place 10 years from now."

The following design considerations have been incorporated in order to facilitate the above inspections:

- 1) All reactor internals are completely removable. The tools and storage space required to permit these inspections are provided.
- 2) The closure head is stored dry on the reactor operating deck during refueling to facilitate direct visual inspection.
- 3) All reactor vessel studs, nuts and washers are removed to dry storage during refueling.
- 4) Removable plugs are provided in the primary shield just above the coolant nozzles, and in the insulation covering the nozzle welds is readily removable.
- 5) Access holes are provided in the lower internals barrel flange to allow remote access to the reactor vessel internal surfaces between the flange and the nozzles without removal of the internals.
- 6) A removable plug is provided in the lower core support plate to allow access for inspection of the bottom head without removal of the lower internals.
- 7) The storage stand provided for storage of the internals allows for inspection access to both the inside and outside of the internals.
- 8) The station provided for changeout of control rod clusters from one fuel assembly to another is specially designed to allow inspection of both fuel assemblies and control rod clusters.
- 9) The control rod mechanism is specially designed to allow removal of the mechanism assembly from the reactor vessel head.
- 10) Manways are provided in the steam generator, steam drum and channel head to allow access for internal inspection.
- 11) A manway is provided in the pressurizer top head to allow access for internal inspection.
- 12) All insulation on primary system component areas required to be inspected is removable.

The proposed technical specifications indicated two areas where uncertain test results were anticipated because of material or geometrical considerations. Two of these areas include the steam generator tube sheet to head weld and steam generator safe ends. These areas proved to be inspectable during pre-service examinations.

The proposed Technical Specifications identify three areas in the reactor vessel for which remote inspection equipment must be developed. These areas are described in Items 1.1, 1.2 and 1.3 of Section 4.2.5 of the proposed Technical Specifications. A remote inspection system will be fitted to the Indian Point 2 plant within the ten years allowed by the code. Combustion Engineering, Babcock and Wilcox, Westinghouse and Southwest Research Institute are currently engaged in programs to establish procedures and techniques for remote inspection.

Southwest Research has already performed remote-automatic ultrasonic examinations of two reactors, one foreign and one domestic. The apparatus was custom built and procedures and methods were individually developed.

The proposed technical specification statement that some inspections would take place 10 years after initial operation starts from the inspection interval established by ASME Section XI. The code allows many components to be examined at or near the end of the inspection interval.

3. (B) (Tr. 485)

Question No. 3. "Also, I believe there is an indication that some, I will call it background information, must be available. Some information on the condition of the welds at the present time for use in comparison with measurements that are to be made in the future.

"I would like to have an indication of what this background information will be and how it is to be obtained prior to operation of the plant, if it is necessary that it be obtained prior to operation of the plant."

Answer:

Background information or base line data will be available for areas to be examined subsequent to plant operation.

ASME Section XI specifies that a pre-operational examination should be performed and the data therefrom should become the reference for all future post-operational examinations. Most of this pre-service inspection has been performed for Indian Point Unit 2. The examination methods are as specified in Section 4.2 of the proposed technical specifications.

Detailed procedures have been developed which specify the locations and methods of examinations. The procedures identify the particular test techniques to be utilized and data sheets to record the ultrasonic indications for the particular item being tested. A record of these indications can be used for future comparison purposes. These procedures have been devised to allow subsequent examinations to repeat the pre-service conditions.

Included in the pre-service examinations is a map of the Ultrasonic test results of the reactor vessel, performed after the hydro test which included the following areas:

## 3. (B) (Tr. 485) Cont'd

- a) Vessel flange radius, including the vessel flange to upper shell weld.
- b) Middle shell course
- c) Lower shell course above the radial core supports
- d) Exterior surface of the closure head from the flange knuckle to the cooling shroud.
- e) Nozzle to upper shell weld
- f) Middle shell to lower shell weld
- g) Upper shell to middle shell weld

Question No. 4 (B) (Tr. 486)

"As I recall the staff answered this question rather briefly that the statement was made that Wash 740 was irrelevant to the present consideration and there was some small discussion of this.

I would like to ask that the staff look again at Report Wash 740, at TID-14844, and to tell again whether these two reports are irrelevant, if they are, why; if they are not, what has changed since the time of these reports to make the situation different from what was reported.

Answer

AEC Staff Response

5. (G) (Tr. 487)

Question #5:

My first question has to do with environmental monitoring, and in the Consolidated Edison Company's report on the environmental impact of Indian Point Station Nuclear Unit No. 2 there is a figure 17 which shows the location of numerous thermal dosimeters. I want to ask about these; what they record, how often they are read, what their full purpose is:"

Answer:

These dosimeters detect and integrate background gamma and cosmic radiation along with any gamma radiation from the plant. They are read monthly to determine if any change is occurring in the background radiation.

"Also, I would like to find out more about the continuous monitoring system, just where the sensors are located, how much redundancy there is, what kind of alarms they sound and in connection with the discovery of unusual radiation, what provisions are made for warning the public, who makes the decision as to whether the public should be warned.)

Answer:

There are several types of samples which are taken continuously at various points outside the plant as part of the environmental monitoring program. While these samples are collected continuously they are analyzed on a weekly or monthly basis. These sampling systems have no redundancy, except insofar as there are several sampling points for some types of measurements. There are no alarms associated with any of these samples. These sampling points are described in attached figures 6-1, 6-2 and 6-3.

In addition to the above described continuous sampling systems there are two monitors external to the plant which provide continuous measurement. These monitors are:

1. An air particulate monitor at a point 800 feet southwest of the Unit No. 1 stack. If the radioactivity in the air exceeds normal levels, an alarm is indicated to the central control room operator.
2. A discharge canal monitor which likewise indicates an alarm to the control room operator if levels of radioactivity in the canal water approach limits.

Neither of these monitors have any redundancy.

As stated in the answer to Board questions No. 14, reliance will be placed upon in-plant instrumentation, not the above described out-of-plant instrumentation, in making the initial decision as to whether the public

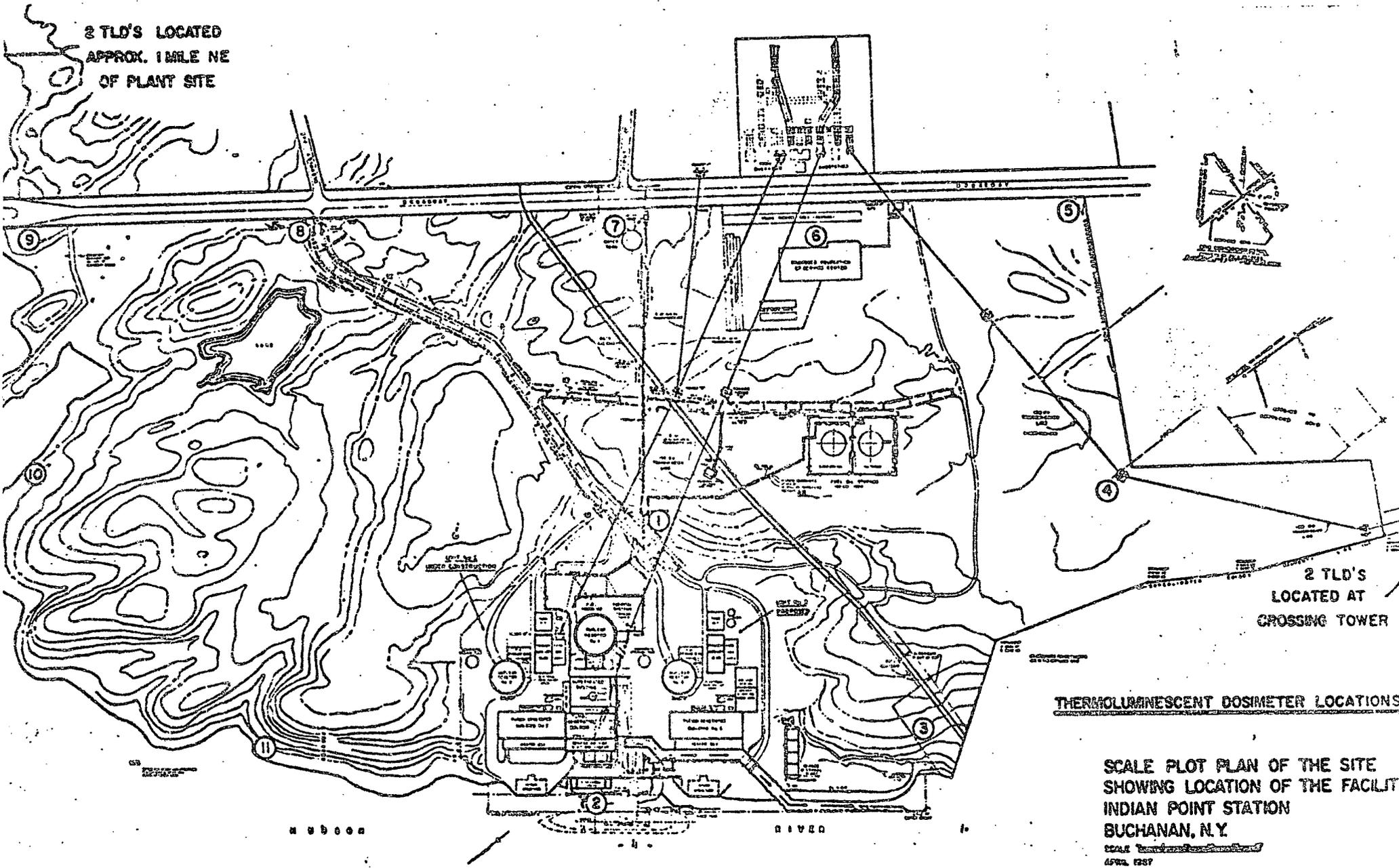
should be warned in the event of unusual radiation from a radiation accident.

The New York State Health Department would make the decision whether the public should be warned. In accordance with the State's emergency plan, if the Health Department determined such warning to be necessary, the Department would promptly disseminate information to the affected public on recommended protective action by the most expeditious means available. We understand that the State Health Department would use the facilities of the State Civil Defense Commission, police and fire departments, radio and television and other available means as appropriate.

CONTINUOUS SAMPLING MONITORING STATIONS  
AT INDIAN POINT

<u>Station No.</u>	<u>Media</u>	<u>Type</u>	<u>Sampling Frequency</u>	<u>Method of Collection</u>	<u>Locations</u>	<u>Analysis</u>	<u>Minimum Sensitivities</u>	<u>Measurement Instrumentation</u>	<u>Remarks</u>
1	Fallout	Continuous	Monthly	Open pot type collector	Point 1 and 1 1/2 miles south of site of Eastview	Gross beta and tritium	1 picocurie per liter for gross beta  3000 picocuries per liter for tritium	Gas flow, windowless proportional counter for gross beta  Nuclear Measurement Corporation Type PC 3A Type PC 11A Type PC 11F	Measurements made 48 hours after collection to allow for decay of radon thoron daughters
2	Air Particulate and Organic Iodide	Continuous at 1 CFM	Weekly	Two fixed membrane filters (0.8 micron size) preceding a charcoal filter	Points 1, 2, 3, 4 & 5 and in addition offsite at points in Petaskill, Buchanan, and Verplanck for one week periods consecutively	Gross beta and gamma spectrum	0.1 picocuries per cubic meter for gross beta	Same as 1 for gross beta	Measurements made soon after collection and 48 hours later to allow for decay of radon thoron daughters
3	Hudson River Water	Continuous	Weekly	Continuous flow regulated to fill 50 gal. drums. Representative sample taken once a week and drums emptied	Hudson River inlet pipe into the plant, and at plant discharge canal. Points 9 and 10	Same as 1 and tritium on monthly composite	Same as 1	Same as 1	Same as 1
15	Direct Gamma	Continuous	Monthly		Selected locations in Buchanan, Verplanck, Montrose, Peckskill, and at a number of points on-site at the plant perimeter	Gross Gamma background	1 mR	Victoreen Ionization Chamber Model 239 0-10 mR or Film Badges	
	Direct Gamma	Continuous	Monthly	-----	Eleven site locations shown on Fig. 17	Same as 15	Reportedly sensitive to very small changes in gamma radiation	Thermoluminescent Dosimeters	Installed on trial basis. Sensitivity and reproducibility under evaluation





"In connection with the monitoring program it would be interesting to know if any consideration has been given to daily publication of radiation levels in the region just as they now report weather or air pollution levels or pollen counts. They might assure the public to see what goes on continuously.

Answer:

Applicant believes that the decision whether to make daily publication of radiation levels should be made by a responsible government agency. However, it is applicant's view that publication of radiation levels would not be useful to the general public. The variation in measured natural background radiation levels from one location to another in the vicinity of Indian Point is considerably greater than the smaller increment from the Indian Point plant. Daily publication of variation of these background levels would not provide the general public with meaningful or useful information such as is the case with information on weather, air pollution and pollen counts.

"In connection with Dr. Brigg's question about WASH 740, the whole problem, a very complex problem of risk versus benefit versus cost in connection with these environmental matters has been brought up in discussions earlier in this hearing. It might be interesting to hear the staff in particular addressing itself to how it considers this problem."

Answer:

AEC staff response.

Question No. 9 (G) (Tr. 488)

"Other areas of interest are the question of the burnable poison that has now been designed into this reactor, how it is fastened in, how it functioned, what experience there has been with such burnable poison, what assurance is there that it is going to be there when needed."

Answer

Each fuel assembly contains 21 steel thimbles which replace fuel rods in the lattice. 20 of these thimbles guide the control rod pins through the assembly when the assembly is in a control rod position. The remaining thimble is used for the moveable flux detectors which also may pass through the assembly. In the first cycle of core operation when the core is more reactive than in later cycles, burnable poison pins are placed in most of the assemblies which are not at control rod positions. Their purpose is to reduce the concentration of chemical shim in the critical core at the beginning of the first cycle. Without the burnable poison, a higher soluble poison concentration would be required and a positive moderator temperature coefficient would result due to the expansion of water carrying dissolved chemical poison out of the core.

All the burnable poison pins for one fuel assembly are screwed and welded to a holddown plate which is held in position under the upper core plate. The burnable poison pins slide into the control rod guide thimbles and the complete poison assembly, consisting of 8, 12 or 16 pins fixed to a holddown plate, is loaded into appropriate assemblies at the fuel element factory.

Each pin consists of a steel tube containing a glass tube with an inner steel sleeve inside the glass tube. The glass contains 12.5% by weight of  $B_2O_3$ , the B-10 in the glass acts as a neutron absorber to reduce the initial reactivity of the core. As neutrons are absorbed, the B-10 depletes, roughly 10% is left at the end of the first cycle when all burnable poison rods are removed. The tube is completely sealed and the glass is supported by the inner sleeve and outer clad.

Identical burnable poison pins have been irradiated in the Saxton experimental reactor and are in use in the Beznau reactor, Switzerland, the R.E. Ginna reactor, the H. B. Robinson reactor and the Point Beach reactor where they have successfully performed their function which is to assure that the moderator coefficient is less than zero at operating conditions early in core life before the coefficient is made negative by core burnup. In two or three months, they will be removed from Beznau and R. E. Ginna since they are no longer needed to maintain a negative moderator coefficient.

"Another question having to do with the internal safety features is the matter of crucibles beneath the reactor which is now a longer time than is desirable. It would be interesting to hear why this was considered desirable and what made it then considered to be unnecessary."

Answer: As stated in the FSAR, there have been several design modifications incorporated into this plant for emergency core cooling since submission of the preliminary report and issuance of the construction permit. They are as follows:

1. Increased capacity of emergency core cooling.
2. Deletion of the reactor pit crucible.
3. Valving and piping modifications in the emergency core cooling system to give added assurance of core and containment cooling in the very unlikely event of a passive component failure during long-term cooling following a loss-of-coolant accident.

The increased capacity of the emergency core cooling system results from the addition of a pressurized accumulator to each coolant loop which provide rapid core reflooding capability with borated water after a major loss of coolant accident. As a result of the increased cooling system capacity, clad melting is effectively prevented for rupture sizes up to and including the double-ended severance of a main reactor coolant pipe. The detailed analysis of such breaks is shown in Section 14.3.3.

In the prior design of the emergency core cooling system, core reflooding following a loss of coolant accident was accomplished by three high head and two high flow safety injection pumps and by the two high flow residual heat removal pumps. The reflooding rates with this design were not sufficient to prevent the fuel clad temperature on the highest power fuel rods from rising to the clad melting temperature, hypothetically assuming instantaneous severance of a coolant loop. Further, the additional pumping capacities and emergency power requirements necessary to provide reflooding times that would not result in clad melting for a loop severance were prohibitively large. Because of this and the uncertainties involved in demonstrating that the fuel pellets released from the melted clad could not fall to the bottom of the reactor vessel a provision was proposed for containing the melted fuel in this unlikely event. This provision was a refractory lined crucible to be located directly beneath the reactor vessel. Extensive research and development efforts were initiated in the areas of; 1) designing a core reflood system that would limit clad temperature to below melting and 2) the design of a crucible that could contain the molten core. Because of the success in developing a highly improved core reflooding system and the continuing

uncertainties associated with the behavior and containment of molten fuel, more stringent core cooling criteria were adopted to preclude fuel clad melting and prevent significant clad water reaction and hence insure the preservation of the core heat transfer geometry. The increased capability of the emergency core cooling system to meet these new criteria are reflected in the design by the inclusion of four pressurized accumulator tanks containing a large volume of borated water held back from the reactor system by check valves which open (without requiring a signal) to discharge into the reactor coolant system when the system pressure decrease associated with a loss of coolant falls below their discharge pressure. These four accumulator tanks supplement the two high flow safety injection pumps. The rapid water discharge from these accumulators greatly reduces the core reflooding time thereby supplying earlier core cooling and limiting the clad temperature increase to a value well below the melting temperature. As a measure of effectiveness of the accumulators, the core midplane reflood time after a loop severance is less than 35 seconds with the revised design as compared to about 300 seconds with the initial design assuming one high head and one low head pump ineffective in both cases. This direct approach of reducing the core reflood times and retaining the core intact eliminates the problem of containing the fuel pellets

and the possibility of core migration and thus the need for the reactor pit crucible associated with the slower reflooding rates provided by the initial emergency core cooling system design. Hence, the reactor pit crucible has been deleted from the plant design. Details of the design of the revised emergency core cooling system including the accumulators are presented in Section 6.2. A complete analysis of the capability of the revised emergency core cooling system to accommodate the loss of coolant accidents, including supporting basis, assumptions and results which show that the new emergency core cooling system design meets the revised criteria is included in Section 14.3.

The valving and piping modifications in the emergency core cooling system give capability to maintain core cooling and containment cooling in the event of a passive component failure in the safety injection system or service water system for the long term after a loss of coolant. The design also has sufficient component redundancy to accommodate an active component failure.

"Finally, in the earlier discussions there were references to an accident at Indian Point that produced high fallout at Yorktown. Now, we have no evidence on this so far as to just what did happen, but it would be nice to clear this matter up, and if there was such an occurrence, what did it amount to and why was this statement made?"

Answer:

There was no accident, or accidental or abnormally high release of radioactivity at Indian Point on or about May 18, 1970. There is no connection between the May 18, 1970 Croton reservoir reading and operations at Indian Point.

As for the Yorktown reading (Croton Reservoir), the fact that, as Mrs. Weik says, it was measured nowhere else in the State of New York implies that there may have been some error in measurement. For further elaboration on the unusual reading at the Croton Reservoir, the following direct quotation from the State of New York's Department of Environmental Radiation Bulletin 70-2, October 5, 1970, is provided:

"A grab water sample collected on May 18, 1970 from Croton Reservoir at Taconic showed a gross beta of 80 pCi/l. An isotopic gamma analysis was made on this sample and ruthenium-106 was non-detectable, and zirconium-95 was 53 pCi/l. An Algae sample was collected July 9, 1970 at the same sampling point and results were as follows:

RuRh-106	2,816 pCi/kg	ZrNb-95	1,484 pCi/kg
Cs-137	479 pCi/kg	Co-60	non-detectable

Gross beta results of grab samples taken from this same sampling point around the period of the relatively high result are given below:

4/16/70 - 5 pCi/l	7/ 2/70 - 4 pCi/l
5/18/70 - 80 p Ci/l	7/15/70 - 4 pCi/l
6/16/70 - 7 pCi/l	

It was concluded that the water sample with the high result was collected too close to the shoreline in shallow water and some algae was included in the water sample. The radioactivity found in the water sample and in the algae

Q. 11 (G) (Tr. 488)

sample appears to have originated from fallout associated with atmospheric weapons testing. This sampling point has been changed to deeper water in the Croton Reservoir in order to obtain a more representative water sample in the future."

The following is a quotation from the Indian Point Station Semi-Annual Operation Report No. 16 covering the period April 1, 1970 to September 30, 1970, which explains the cause of the plant shutdown referred to by Mrs. Weik:

"Following a two month refueling outage, Unit No. 1 was returned to service on May 20, 1970 with primary loops Nos. 11, 12 and 13 operating. Loop No. 14 was isolated due to a tube leak in its associated boiler which developed on May 16, 1970 during a hydrostatic test of the primary system. Within a few hours after the Unit had been placed in service, a primary to secondary leak was detected in No. 12 nuclear boiler. The unit was shut down at 9:55 P.M. on May 20, 1970 in order to locate and plug the tube leaks in Nos. 12 and 14 boilers."

Question No. 12 (B) (Tr. 488)

"In reviewing the reports, a question on the detail came to mind. The question came to mind as a result of an experience back in the middle 140s that occurred many times before June of 1946, and I assume it has happened since. It has to do with the use of transit as a fire barrier.

Before the mid-40s, it was used as a fire barrier and the temperature when it got up as much as 500 degrees Fahrenheit, the transit could be expected to explode.

I see in the report it is used in aeration of control wiring and power wiring. I would like to have some information concerning changes that have been made in the transit since the middle '40s that make this procedure useful. Also whether this characteristic of transit was concerned in specifying the material for the fire barriers."

Answer

"Transite" is an exclusive trade name for a non-laminated asbestos-cement product manufactured by Johns-Manville. Johns-Manville has indicated that they are not aware of any tests and resultant explosions of "Transite" during the 1940s. They suggest that the actual material tested at that time was a laminated asbestos-cement product made by another manufacturer and mistakenly referred to as "Transite."

The Johns-Manville "Transite" used in Indian Point Unit No. 2 is made by a press process which results in a homogeneous structure. Most other asbestos-cement products are manufactured in a way which results in

a non-homogeneous laminated structure with high moisture content. Exposure of such non-homogeneous products to temperatures of 212°F and higher can form steam and the rapid increase in pressure causes explosive delamination.

Corrugated "Transite", manufactured in a similar fashion to flat "Transite" did not explode on testing. This was true for fire or oven exposure of "Transite" completely saturated with water. Similarly, immersion of "Transite" while at elevated temperature did not result in explosion. Identical tests were performed on non-homogeneous material manufactured by other processes and that material exploded.

"Dr. Geyer mentioned the elimination of the crucible. There is a statement made in the report that although the crucible has been eliminated, that provision has been made in the insulation so that water has access to the bottom of the reactor vessel and I assume that means the water would provide some cooling for the bottom of the reactor vessel.

I would like to have information concerning how effective this can be expected to be, what sort of conditions it would take care of, and what certainty there is that water will have access and will in fact cover the bottom of the reactor vessel under accident conditions."

Answer: Preliminary calculations made during the conceptual design of the crucible indicated that water level around the reactor vessel would cover the bottom of the vessel and if in contact with the vessel, the water could provide adequate cooling so that it might be expected that molten fuel could be contained by the bottom head of the vessel. Accordingly, the reactor vessel insulation was designed to permit the water to contact the vessel surface.

The efficacy of this cooling mode, like the other phenomena related to behavior of molten fuel, could not be well defined because of inability to simulate the system experimentally. Hence the decision was made to upgrade the emergency core cooling system and obviate the need to design molten fuel entrapment and cooling.

13. (B) (Tr. 489)

ASLB 1/19

The design feature of the vessel insulation referred to above was retained, as it did not interfere with the other functional requirements of the insulation.

Question No. 14 (B) (Tr. 489)

"...the reading I have done so far gives me the impression that if there were an accident and an accompanying considerable release of radioactivity, that the applicant is responsible only for notifying the State of New York and other agencies that this has occurred and the provisions that must be made for taking care of the public after that are the responsibility of those agencies.

"I would like to have some information concerning the negotiations that have been taking place or have taken place between the applicant and the various public agencies concerning the emergency procedures, the procedures that can be expected to be used and where the responsibility lies in the event of serious accident."

Answer:

Emergency Plans for Indian Point Unit No. 2 describing the activities of Con Edison and the notifications to be made by Con Edison, including requests for assistance, are described in the response to FSAR Question 12.5 in the section titled "Radiation Contingency Plan." Within this Plan are three different categories which may require varying degrees of implementation of protective actions, described beginning on page 6 under Section 4.2 titled "Implementation Levels." The first category is the local contingency plan which primarily would involve a potential for the need to take protective actions within the site boundary. Also described is the site contingency plan which involves a potential that may require protective actions beyond the site boundary. The third category is titled general contingency plan which involves a site contingency for which the off-site effects have been verified by monitoring and surveys off-site.

Con Edison's Radiation Contingency Plan requires that notification be given to the AEC's New York Operations Office and to the New York State and Westchester County Departments of Health that a site contingency has been declared. This would be prior to the declaration of the general contingency, which would not be made until off-site monitoring by Con Edison had taken place. These

requirements for notification are described on page 26 of the Radiation Contingency Plan.

Although it is exceedingly improbable that an accident will occur at Indian Point Unit 2 which will require protective actions off-site, over the past several years Con Edison has held numerous meetings concerning the Radiation Contingency Plan with various representatives of the State of New York, the New York Operations Office of the AEC and the Westchester County Health Department. Actions of State agencies in response to a major nuclear accident are described in New York State's emergency plan for major radiation accidents.

The State's emergency plan describes the criteria for determining whether protective actions are needed, the protective actions to be considered to minimize public exposure to radiation and the authority and responsibilities of the various officials and agencies involved. It further provides for appropriate public announcements.

In accordance with the State's plan, the State Department of Health, upon notification from Con Edison that a site contingency had been declared, would determine the necessity for protective actions off-site and direct the various actions required.

Con Edison has discussed general procedures to be followed and the information that should be provided in the event of a site contingency with the Department of Health and various other State agencies involved in the State's emergency plan. The Department of Health indicated its desire to consider the need for protective actions at the earliest moment following the onset of a serious accident, rather than waiting for off-site monitoring results to confirm the magnitude of any accident which had taken place. To this end, the Department of Health has requested, and Con Edison has agreed, that in the event of a site contingency, Con Edison will notify the Department of Health through the officer

on duty at the 24-hour emergency number of the New York State Civil Defense Commission warning point located near Albany. Con Edison will also provide the following information: the type of accident that has occurred; the safeguards which are effective; gross activity levels inside containment as determined by gross gamma instrumentation which observes containment activity through steam line beam holes; a statement as to the nature of the release to the containment; wind speed; wind direction and meteorological category.

Con Edison will further provide the Health Department with calculated thyroid dose levels due to iodine 131 at various distances downwind based upon the activity within containment and an assumed 1/10 of a percent per day leakage from containment. The 1/10 of a percent per day leak rate from containment is assumed even though the pressurized weld channels and penetration system along with the seal water injection system is designed to prevent such containment leak rate because the field survey monitoring which would verify that such containment leakage is not occurring would not yet be available on this initial notification. If means are available of verifying that containment leakage is not occurring at the time of the initial notification or that it is considerably below the 1/10 of a percent per day assumed, the calculated doses will be adjusted accordingly.

The State Health Department has indicated to Con Edison that these dose estimates will be used by the Department as a primary tool in making the initial determination as to which, if any, protective action should be implemented immediately. Subsequently, off-site monitoring data will provide the necessary information concerning off-site releases upon which the Department's determination of the need and desirability of subsequent protective actions would be based. The potential for significant off-site releases could exist only if the containment inventory of iodine were to be far in excess of the amount anticipated. In

this connection, the redundant core cooling features are designed to limit the iodine inventory to that released from the gap.

As previously indicated, Con Edison will notify the AEC's New York Operations Office and the Westchester County Department of Health of a site contingency at the same time as the State Health Department. Within the AEC's New York Operations Office there is a radiological assistance team under the direction of an AEC group leader, which team consists of local AEC personnel equipped with appropriate survey instruments who will be able to assist in monitoring the effects of radiation releases from the site. We are advised that the Westchester County Department of Health would provide additional radiological survey supporting effort. Initial radiation surveys off-site would be by Con Edison's plant health physics survey team who would utilize a survey truck with 2-way radio communication to the central control room. These personnel would monitor airborne radioactivity and direct radiation downwind of the site in the event of a site contingency. There would also be available through the AEC interagency support from various other Federal agencies and national laboratories, under the Interagency Radiological Assistance Plan. These groups can provide additional trained personnel for monitoring and advisory activities to help support Con Edison's contingency plans and the State Health Department's activities.

Question No. 15 (B) (Tr. 490)

"The technical specifications indicate that the releases from the plant will be limited to those which will make certain that the public is not exposed to radiation levels above those provided in the 10CFR, Part 20 guidelines. We understand that the plant will normally operate with releases that are far below those guidelines.

Is there reason why the technical specifications contains no time limits on the releases to the 10CFR, Part 20 limit and should not such time limits be included in the technical specifications? I assume that the technical specifications were written by the applicant and that he has a certain amount of freedom in what he puts in the technical specifications, at least until the time they are accepted by the AEC."

Answer

Applicant's proposed Technical Specifications, Section 3.9, limits even the maximum instantaneous release rate to 10CFR20. The requirement in this specification to keep releases as low as practicable would require prompt correction of any condition causing higher than normal releases. (Normal releases are expected to be only a small fraction of 10CFR20). Therefore, a time limit on releases at 10CFR20 levels is not required.

" Dr. Geyer referred in one part to the burnable poison and suggested that experimental test data might be of interest to confirm these conclusions with reference to burnable poison. I wonder also as a general matter if more of the experimental test data can be shown for several of the safety engineered components that are accepted in this proposal for this reactor.

"For instance, the emergency core cooling system, what are the data that confirm the conclusions in that regard? I know in previous cases this subject has come up, but it is referred to continuously as research matter and there may be data which is more updated than we have last considered and might give us a summary of the R&D in this regard."

Answer

The answer to this question will be forthcoming shortly.

Question No. 17 (J) (Tr. 491)

"Speaking of research and development, the Board is concerned concerning the reports issued by the Advisory Committee on Reactor Safeguards over a period of time in reference to pressurized water reactors, and I wonder if a summary can be presented of what those concerns are as having been expressed by the Advisory Committee on Reactor Safeguards over, say, the last ten years because the ACRS, and I refer to them as the Advisory Committee on Reactor Safeguards, concluded many of its reports by saying if these matters are carried out then there is reasonable assurance that the reactor can be operated without undue risk to health and safety of the public."

Answer

AEC staff response

Question No. 18 (J) Tr. 491

"Aside from a summary statement, or in addition, let me say, to a summary statement in that regard and updating of the experimental test data under those research and development projects, I wonder if we could have a witness from the staff of the Atomic Energy Commission about the research and development work. I think some boards in the past have had difficulty with summary statements maybe not being as complete as they would like to have it. If a witness is present then I think any further inquiry the Board may have can be readily considered and answered at that time.

For instance, as I recall it, there is a loss-of-fuel test. That has been going on for sometime, and maybe we can have some data about that and the other R&D programs that ACRS has outlines...

Are they carried on with the same vigor and financial support, for instance, that heretofore has been allocated to other projects and what has been discovered to date and what more is left to be done and when will that work be done and what is the data that is expected to be derived from further work in that regard?...

I think it is important that we have a witness from that work, a witness that has a responsible position.

Maybe it would be the director of the reactor development technology himself to participate in this hearing; I think it would be very helpful if he would."

Answer

AEC staff response

Question No. 19 (J) (Tr. 495)

"On page 113 of the detailed statement on environmental considerations by the staff... we find HEW's statement, something to this effect: The estimate of liquid radioactivity discharges and so forth, in our judgement, is not adequately documented.

What do they want in order to make the reviews? Did the staff get this to them? Is there anything further from HEW other than that which is reflected in the staff detailed environmental statement reflected on page 113?

In fact, is there any supplementary cost to any of the agencies to which the Applicant's statement is submitted?

Answer

AEC staff response

Question No. 20 (J) (Tr. 495)

"Then there is this further statement shown on page 113 of the staff detailed environmental statement which says something like this: Current PWR, I take that as "pressurized water reactors," operating experience indicated that both the liquid radioactive discharge and gaseous discharges will be considerably higher and the Applicant has not desired new design implications to support the lower effluent discharges. Can the staff give us what figures reflect the current PWR operating experience and indicate that both the liquid and gaseous discharges will be higher, higher than what, the Applicant considered, or what has been designed in other reactors and what kind of design information does HEW believe will be necessary for it to support or give a conclusion respecting the estimated lower discharges?

Answer

AEC staff response

Question No. 21 (J) (Tr. 496)

"On page 114 of that statement staff supplement there is the statement by a public health physician of HEW, the proposed technical specification for the site gaseous waste discharge limits would be excessive if calculated by the method indicated by the Applicant."

Answer

On November 12, 1970, Applicant responded to comments on Applicant's Environmental Report made by Federal agencies in a letter to Peter A. Morris, Director, Division of Reactor Licensing, Atomic Energy Commission from William J. Cahill, Jr., Vice President, Consolidated Edison Company of New York, Inc. As stated in that letter, "With respect to the site gaseous waste discharge limit, a typographical error appeared in the equation for the allowable gaseous release rate from the Indian Point site as first submitted to the AEC in the FSAR. Subsequent to the HEW review, the error was corrected and the equation rewritten to avoid misinterpretation. The correct equation is as follows:

$$\left(\frac{X}{Q}\right)_1 \sum_i \frac{Q_1^i}{(MPC)_i} + \left(\frac{X}{Q}\right)_2 \sum_i \frac{Q_2^i}{(MPC)_i} \leq 1.0$$

where:

i refers to any radioisotope.

$Q_{1i}$  and  $Q_{2i}$  are the release rates (Ci/sec) of any radioisotope  $i$  from Unit No. 1 and Unit No. 2, respectively.

(MPC) is in units of  $\mu\text{Ci/cc}$  as listed in Column 1, Table II of Appendix B, 10CFR20, except that for isotopes of iodine and particulates with half lives greater than eight days, the values of (MPC) <sub>$i$</sub>  shall be reduced by a factor of 700.

The above specification applies to the entire Indian Point site and will be modified to accommodate Unit No. 3 when it is completed and in operation."

"HEW also said discharge limits for Indian Point facility should also be applied for Con Ed Units 4 and 5 if these additional units were built at the proposed location about 1500 meters south of the Indian Point site."

Answer

Con Edison has already indicated that Indian Point Units 1, 2 and 3 should be treated as a single facility in establishing discharge limits. Nuclear Units 4 and 5 are not under review in this context, however, this comment by HEW will be taken into consideration in the licensing review of Nuclear Units 4 and 5 (Verplanck 1 and 2).

"The statement is also made the environmental surveillance program for the facility would be adequate if modified to include the LDs, and I take it that is total limitation doses with the minimum sensitivity of a dash 10 millirems per month."

Answer

We are evaluating the use of thermoluminescent dosimeters now and expect that it will be possible to measure doses about 10 millirems per month with them.

Question No. 24 (J) (Tr. 496)

"The suggestion is made by HEW on page 115 of the staff's submittal, estimates for gaseous releases for Indian Point No. 2 were based upon a 45 day holdout. We believe the capacity should be expanded to 60 days and it comments further:"

answer

With respect to radioactive waste treatment and holdup systems, the revised proposed technical specification and bases for Indian Point Unit No. 2 (Specification 3.9 Effluent Release) which was submitted to the AEC subsequent to the HEW review, contains the following commitment:

"Plant equipment shall be used in conjunction with developed operating procedures to maintain surveillance of radioactive gaseous and liquid effluents produced during normal reactor operations and expected operational occurrences in an effort to maintain radioactive releases to unrestricted areas as low as practicable."

HEW suggested that the gaseous waste holdup capacity should be expanded to 60 days minimum. The final technical specification required a minimum of 20 days holdup in the gas decay tanks, except for low radioactivity gaseous waste resulting from operations associated with refueling and startup. The design capacity of the tanks allows a 40 day holdup based on design flow rates. Variation in those rates may permit a longer holdup time. However, the 20 day minimum required by the technical

specifications result in discharges that constitute a small percentage of maximum permissible concentrations.

25. (J) (Tr. 497)

"Apparently the position taken by HEW is said to be taken because gaseous releases during normal operating at Indian Point Unit No. 1 have been much higher than at other similar operating PWR's which could be interpreted to indicate that the gaseous waste holdup was not used to the fullest extent, and so forth.

Could the staff get those figures or could the Applicant? What were the releases from Indian Point No. 1 which were higher than other similar operating PWRs? What are other similar PWR's and what were the figures for releases from them?"

Answer

AEC staff response

Question No. 26 (J) (Tr. 497)

"Incidentally, in considering what the releases are from Indian Point Unit No. 1 and other PWRs, especially in New York State, can those readings be compared with the readings of the environmental surveillance undertaken by New York State monitoring groups? What are their figures?...

We aren't so worried about the conclusions if the figures are shown and we would like to see the figures."

Answer

See NYS Department of Health and NYS Department of Environmental Conservation Environmental Radiation Surveys from 1959 to 1969, which will be submitted separately.

Question No. 27 (J) (Tr. 498)

"There was mention made, I believe, by Dr. Briggs about TID-14844. I wonder if we could have a computation precisely in accordance with TID-14844, together with the components, other components of that calculation.

I understand that they have used some TID-14844 and some other components which I think are justified; but I think we should start with 14844 and give us that from both the staff and the Applicant because as I understand, TID-14844 is a guideline that can be applied until other engineering data are shown to justify variance therefrom and there may well be engineering data in that regard but if we can start from the beginning point, that would help us to evaluate the safety considerations of the engineering matters that seem to justify a variance."

Answer

See Table 27-1, with Attachments #1 and #2.

THYROID DOSE - REM

TABLE 27-1

CASE #	SPRAYS*			FILTERS*			CONTAINMENT LEAK RATE			SOURCE*				METEOROLOGY*		DOSE (REM)	
	NOTE	APC**	CON ED**	NOTE	APC**	CON ED**	TID 14544	APC**	TID 14544	A	B	A	B	TID 14544	CON ED	2 RES. @ 520m.	30 DAYS @ 1100 m.
1	X			X			X		X				X		1,210	30,400	
2	X			X				X	X				X		1,210	17,200	
3	X			X			X			X			X		1,210	30,400	
4	X			X			X				X		X		80	3,370	
5	X			X			X					X	X		20	3,370	
6	X			X				X		X			X		1,210	17,200	
7	X				X		X		X				X		779	300	
8	X						X		X				X		813	300	
9	X						X		X				X		769	573	
10	X						X		X		X		X		777	573	
11		X		X			X		X				X		138	68	
12		X		X			X		X		X		X		245	3,100	
13			X	X			X		X				X		20	10	
14			X	X			X		X		X		X		138	3,050	
15				X			X		X				X		125	61	
16				X			X		X		X		X		228	350	
17				X			X		X				X		19	5	
18				X			X		X		X		X		102	80	
19				X			X		X				X		1	1	
20				X			X		X			X	X		7	5	
21		X		X			X		X				X		1,210	3,500	
22			X	X			X		X		X		X		228	210	
23				X			X		X		X		X		102	65	
24				X			X		X			X	X		7	4	
25	TID 14544	X		X			X		X				X		1,210	30,300	

Breathing Rates: Cases 1-24:  $1.47 \times 10^{-4} \text{ m}^3/\text{sec}$  @ 0 - 8 hours  
 $1.75 \times 10^{-4} \text{ m}^3/\text{sec}$  @ 8 - 24 " "  
 $2.32 \times 10^{-4} \text{ m}^3/\text{sec}$  @ 24 " "  
 Case 25:  $1.47 \times 10^{-4} \text{ m}^3/\text{sec}$  @ 520 meters  
 $2.32 \times 10^{-4} \text{ m}^3/\text{sec}$  @ 1100 meters

\* See Details on attached Sheet #1.  
 \*\* IEC Division of Reactor Licensing Safety Evaluation - IP-2, Nov. 15, 1970  
 \*\*\* One spray pump and 3 fans (8000 CFM each) operating.

Attachment #1.

Summary of Thyroid Dose Calculation Parameters.

I. Iodine Removal Constants:

		AEC	Con Ed
(i) Sprays:	Inorganic	$\lambda_s = 4.5$	$\lambda_s = 32.0$
	Organic	$\lambda_s = 0$	$\lambda_s = 0$
(ii)	Inorganic	$\lambda_{cf} = 0.49$	$\lambda_{cf} = 0.4985$
	Organic	$\lambda_{cf} = 0.048$	$\lambda_{cf} = 0.3877$

II Containment Leak Rate:

- (i) TID 14844: 0.1% per day
- (ii) AEC : 0.1% per day for the first day  
0.05% per day thereafter

III Source:

- (i) TID 14844: 25% of the iodine is available for release
- (ii) GAP Activity: 3% of the equilibrium core I-131 inventory.

Case A assumes no organic iodine and Case B assumes 90% inorganic and 10% organic.

IV Meteorology:

- (i) TID 14844: inversion type weather conditions.
- (ii) Con Ed : three periods are considered:

- 1) First two hours after the accident--Inversion parameters of TID-14844 are assumed.

Category:	$C_y$	$C_z$	N	$\bar{u}$	$X_0$
Inversion-I	0.4	0.07	0.5	1 m/sec	430 m

- 2) Next 22 hours - The same inversion condition is assumed to exist, but the average wind speed is 2 m/sec.
- 3) From 1 to 30 days:

Category	Fraction	$1/\bar{u}$	$C_z$	$C_y$	n
Lapse-L1	0.137	0.575	0.48	0.6	0.2
Lapse-L2	0.061	0.191	0.43	0.53	0.3
Neutral-N	0.378	0.358	0.39	0.47	0.4
Inversion-I	0.424	0.493	0.97	0.40	0.5

Attachment #2 to Thyroid Dose Table

Case #22 in the table corresponds to a calculation of the thyroid dose using all the AEC assumptions (presented in the AEC Safety Evaluation - Indian Point Unit No. 2, November 16, 1970 and Safety Guide 4, November 2, 1970) with the exception of X/Q values. Although similar meteorology is assumed by both Con Edison and the AEC, different formulation is used in the calculations. Con Edison uses the Sutton approach and the AEC uses the Pasquill method.

Adjusting the Con Edison values to AEC meteorological assumptions, thyroid doses of 195 rem (2 hours at the site boundary) and 267 rem (30 days at the low population zone) are obtained. These correspond to 180 rem (2 hours, SB) and 270 rem (30 days, LPZ) reported by the AEC in the Indian Point Unit No. 2 Safety Evaluation.

"We would like to have a summary of some of the several monthly reports that have heretofore been submitted with reference to Indian Point No. 1, particularly as to releases of radioactive liquid and gases and compare those with the readings by the New York environmental surveillance groups and if there are any other surveillance groups...."

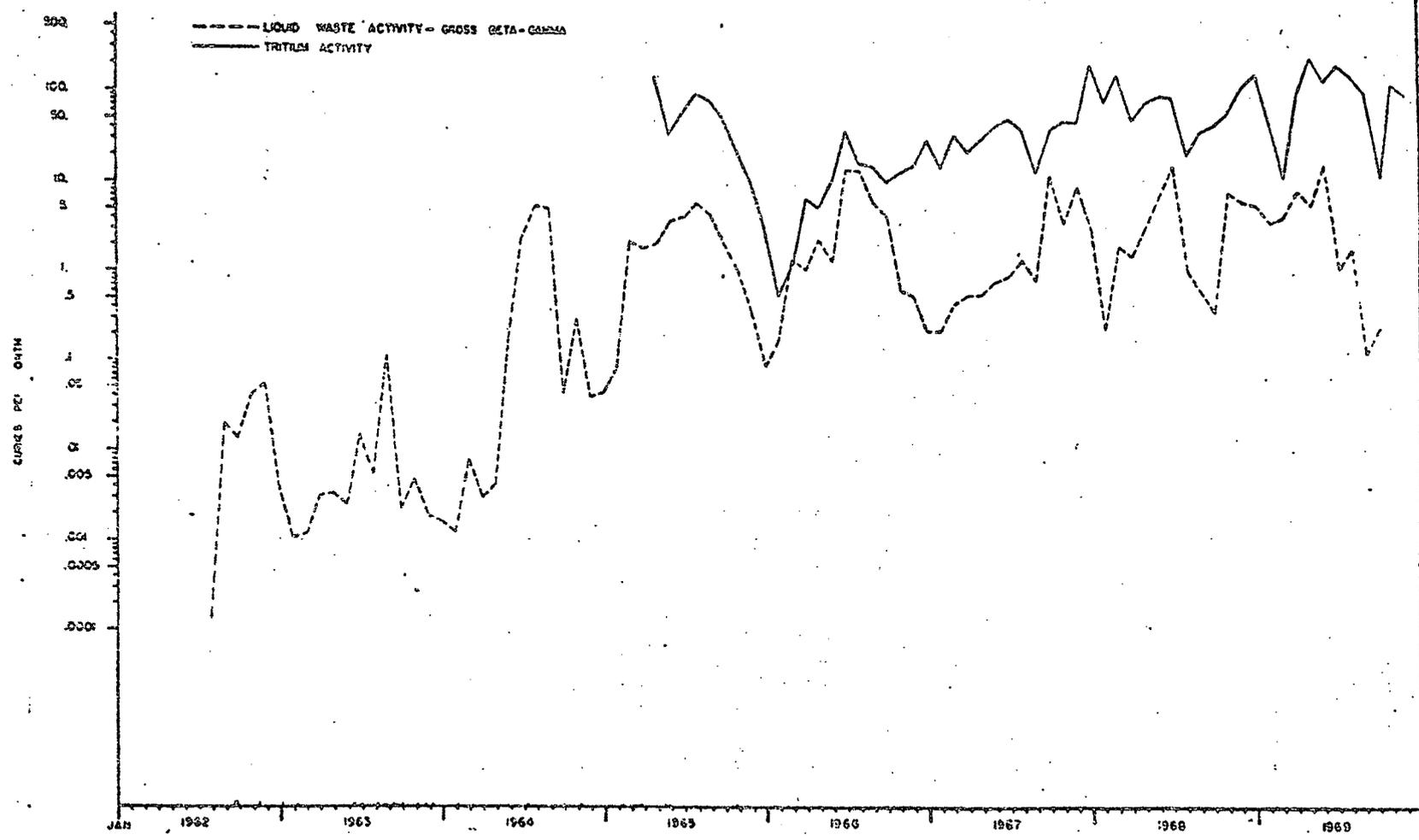
Answer

Two graphs are attached summarizing the liquid and gaseous releases from Indian Point Unit No. 1.

Also attached are Figures 1 - 17 which summarize the results of the Consolidated Edison environmental monitoring program. The dark vertical lines on these figures indicate the startup of Indian Point No. 1 in 1962 while the letters on the curves refer to rates which are given following the figures.

For the results of New York State environmental monitoring see the answer to Board question 26.

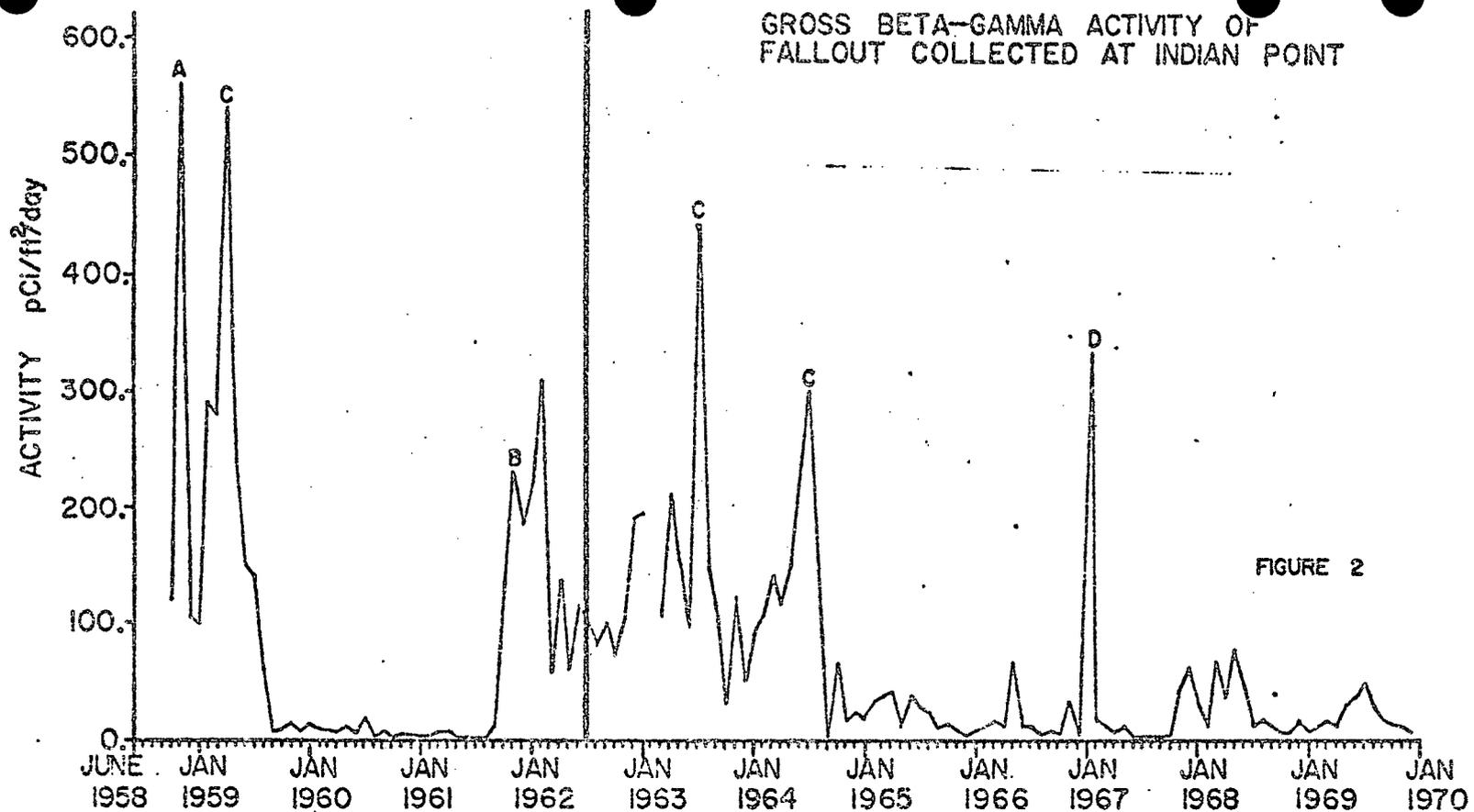
INDIAN POINT UNIT NO. 1  
HISTORY OF LIQUID WASTE AND TRITIUM DISCHARGED

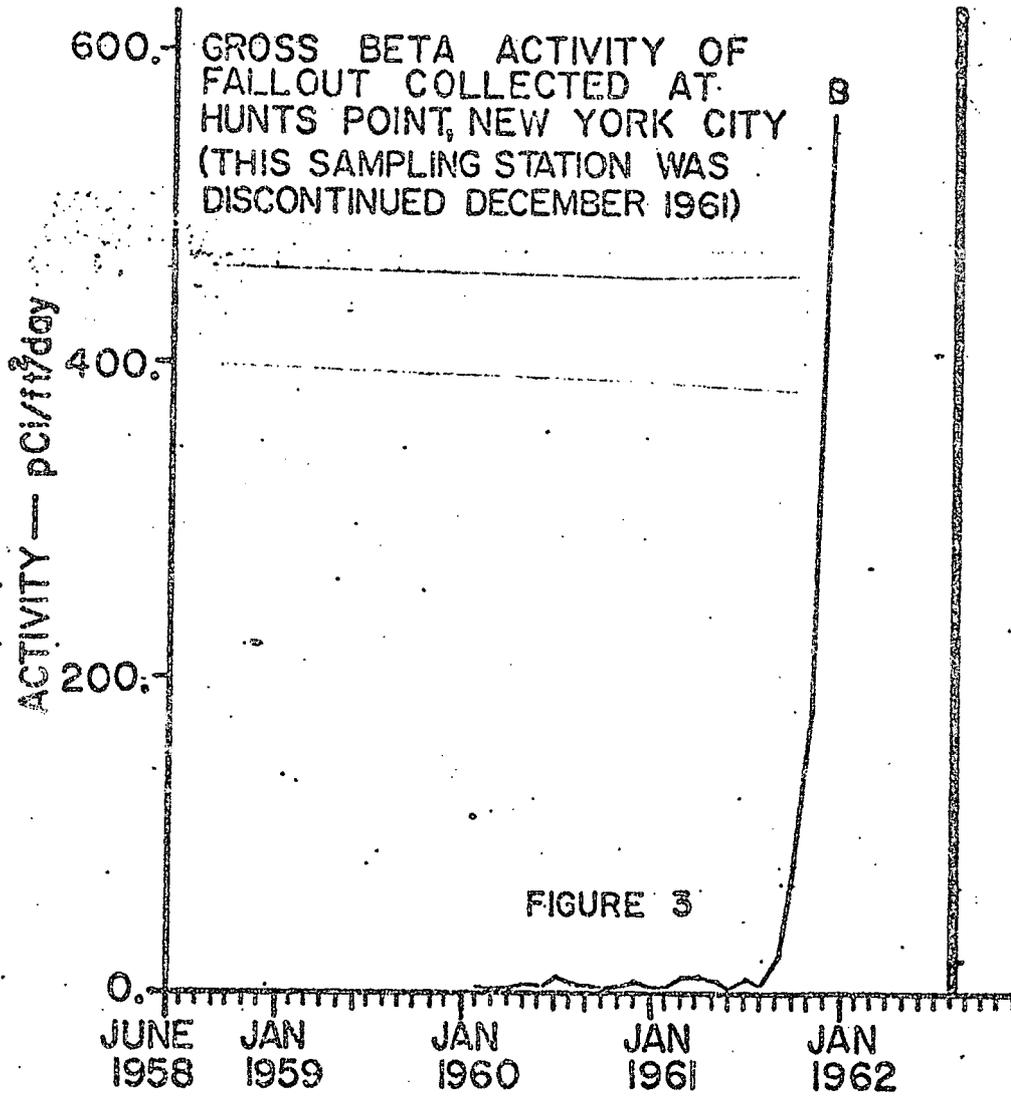


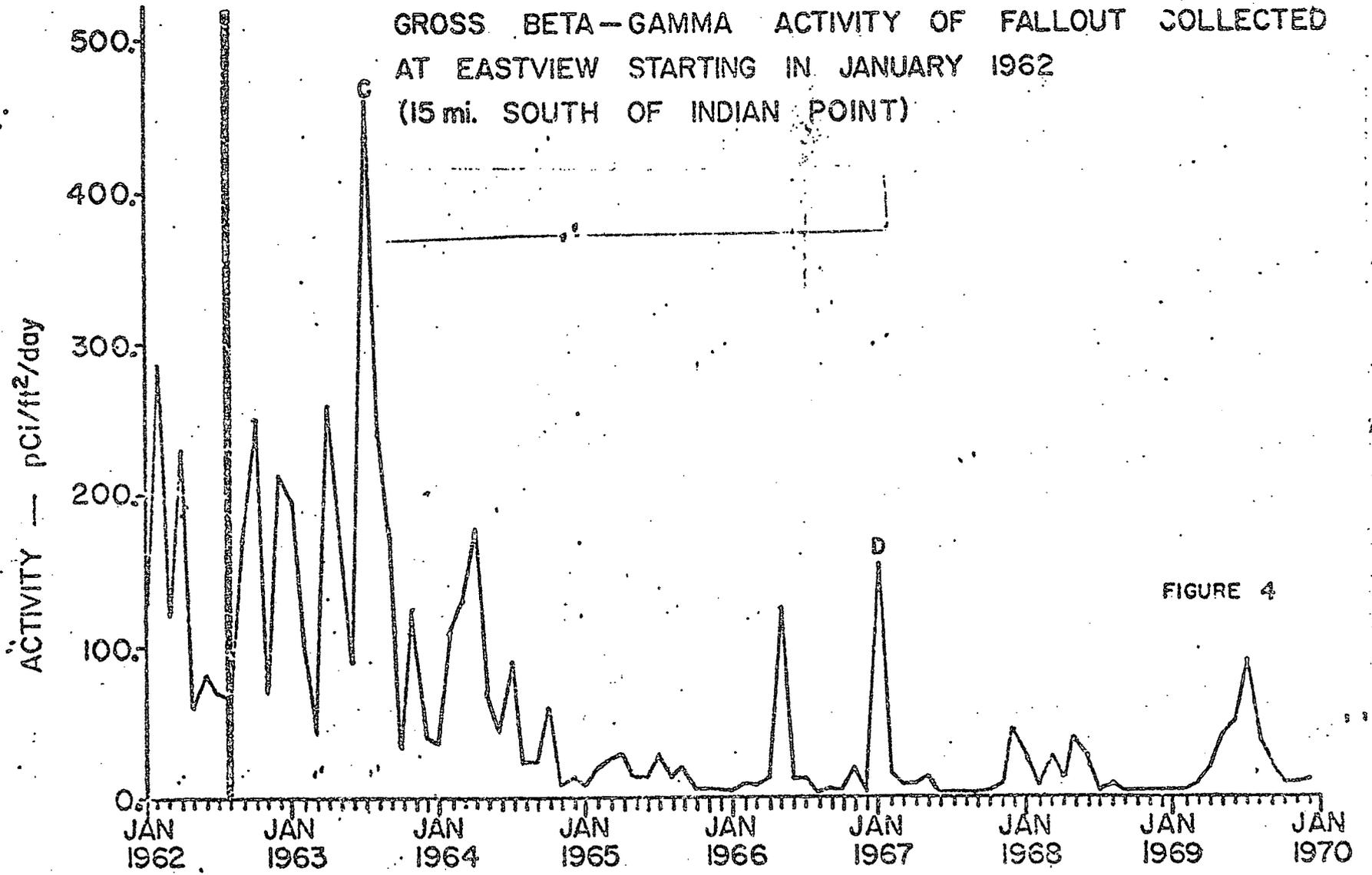


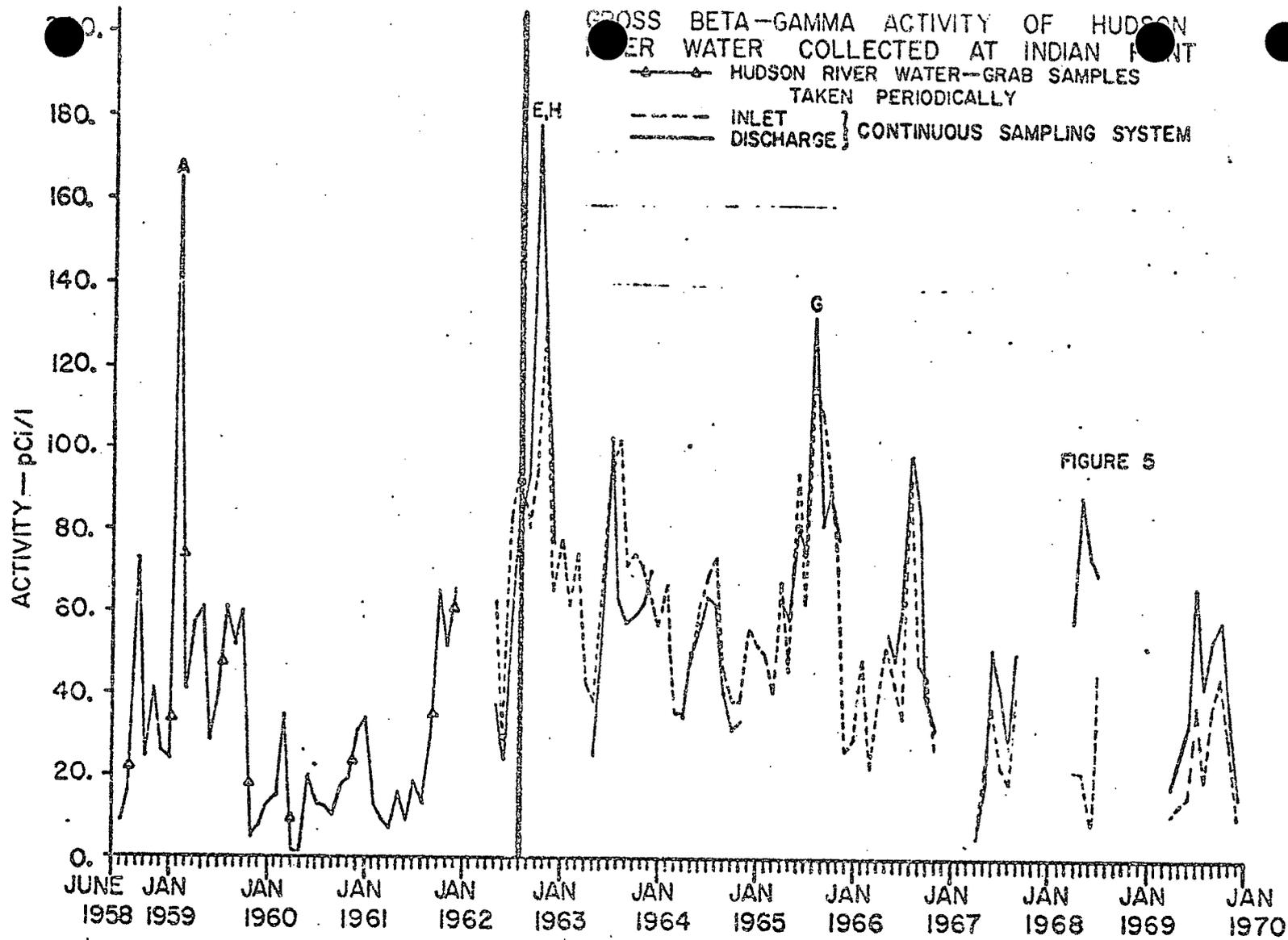


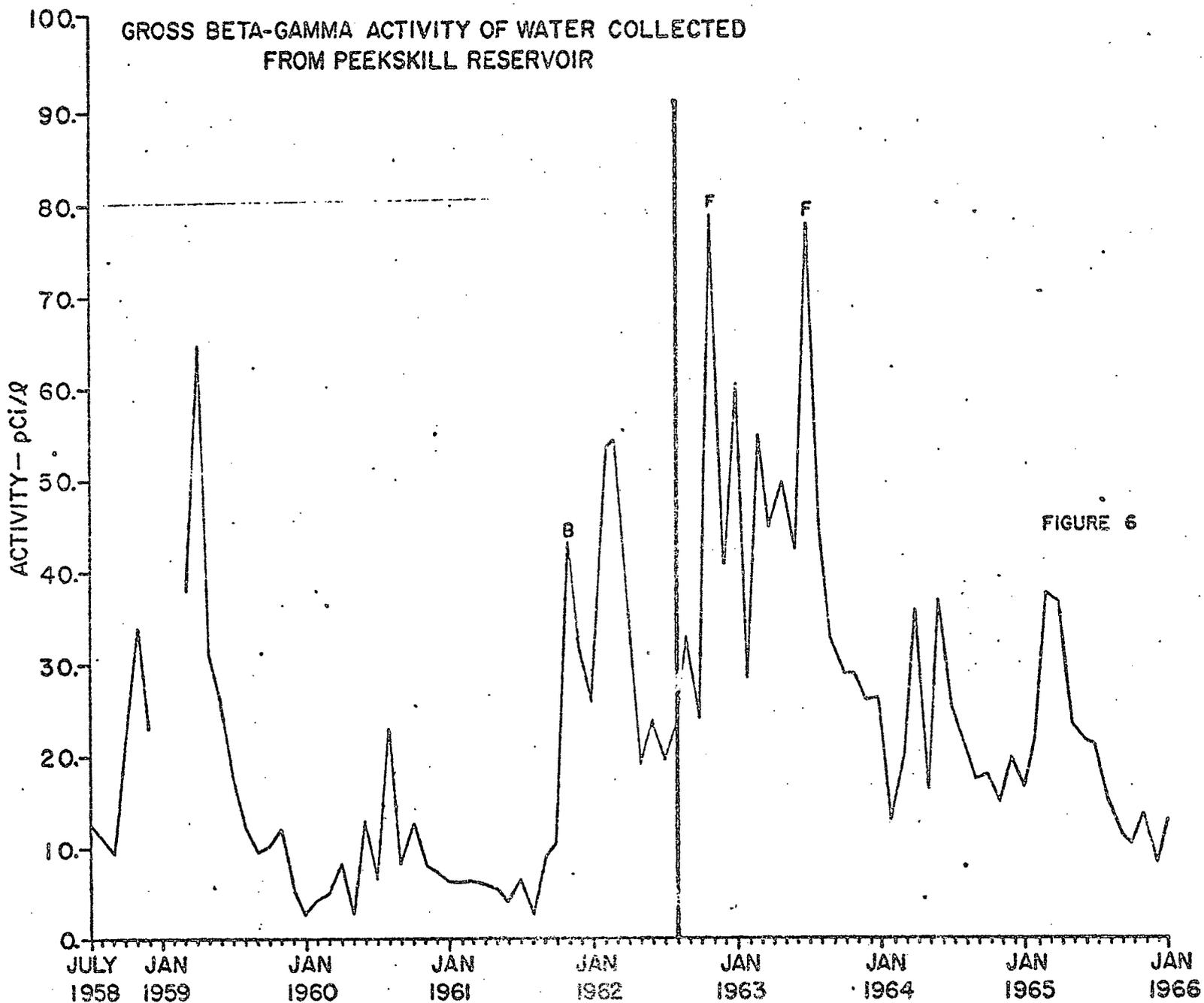
GROSS BETA-GAMMA ACTIVITY OF  
FALLOUT COLLECTED AT INDIAN POINT

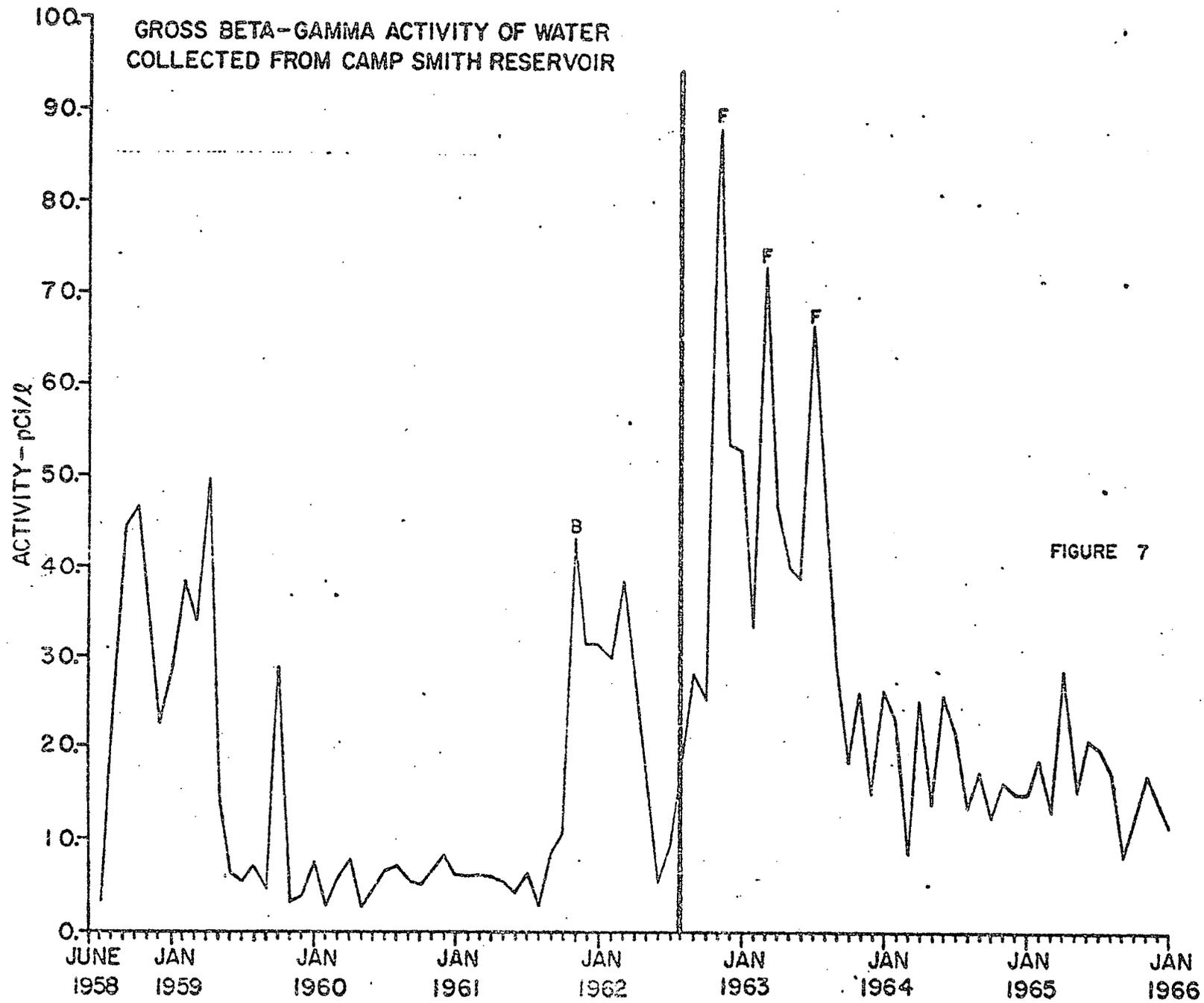


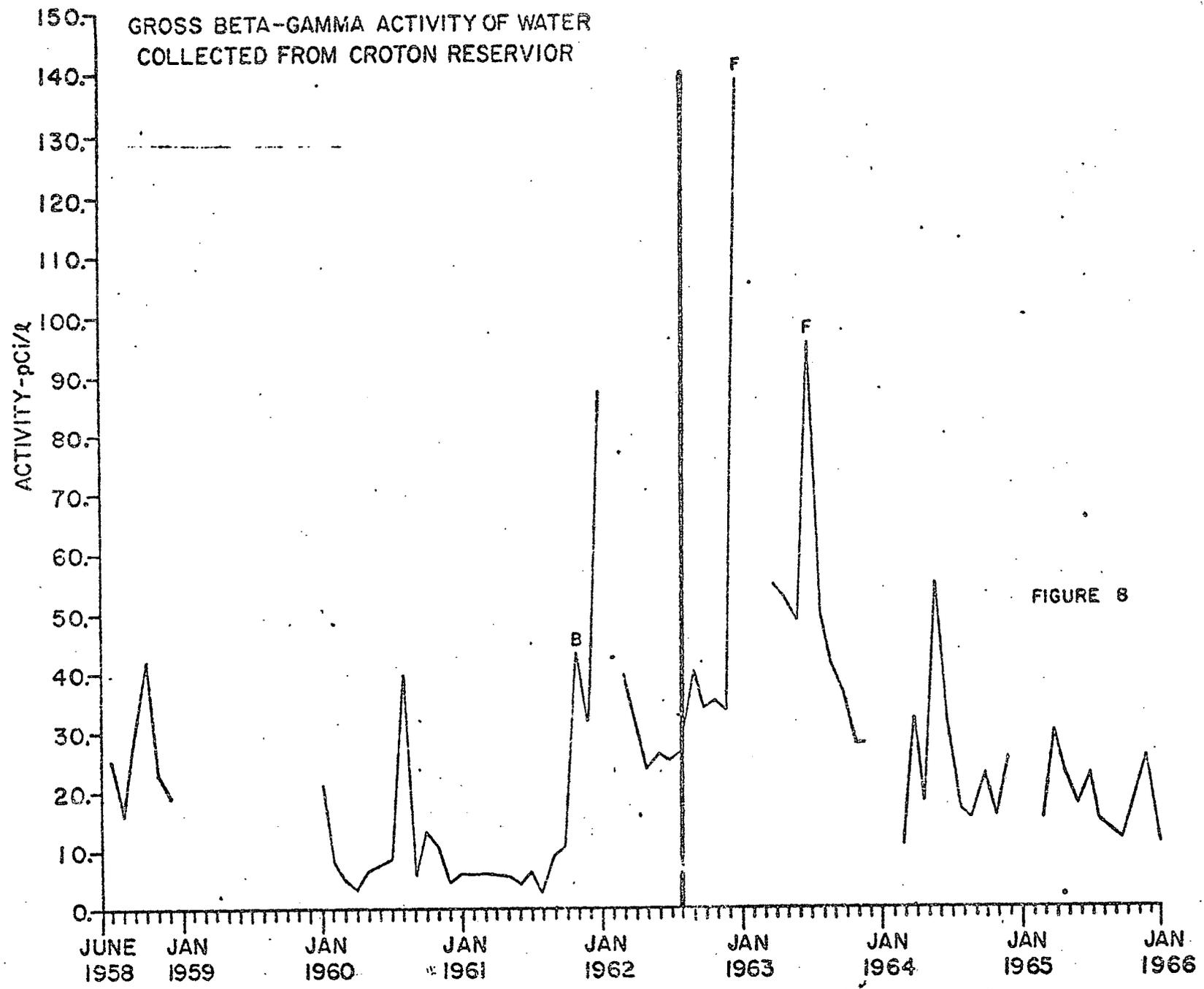


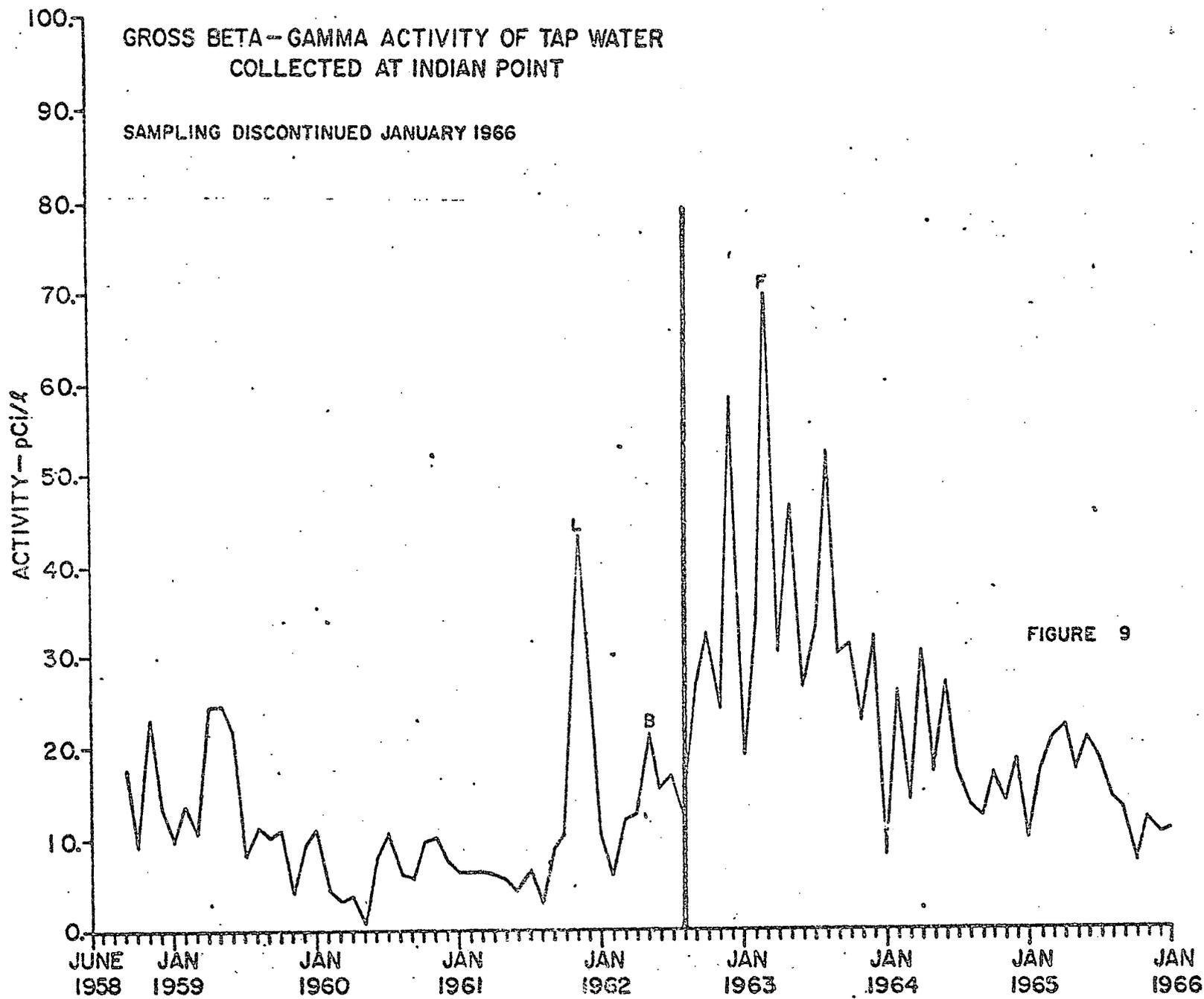












GROSS BETA-GAMMA ACTIVITY OF WELL WATER AT INDIAN POINT

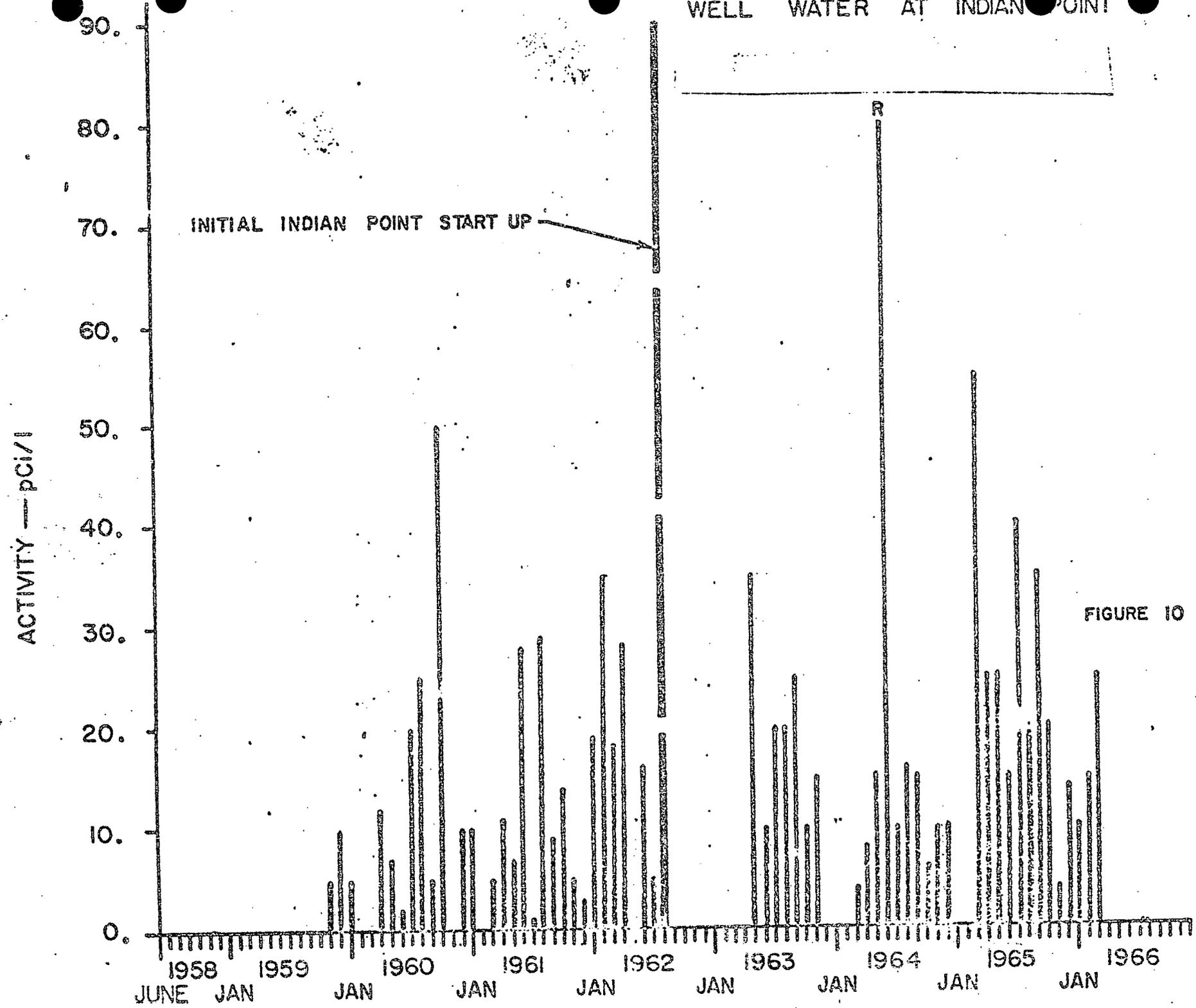


FIGURE 10

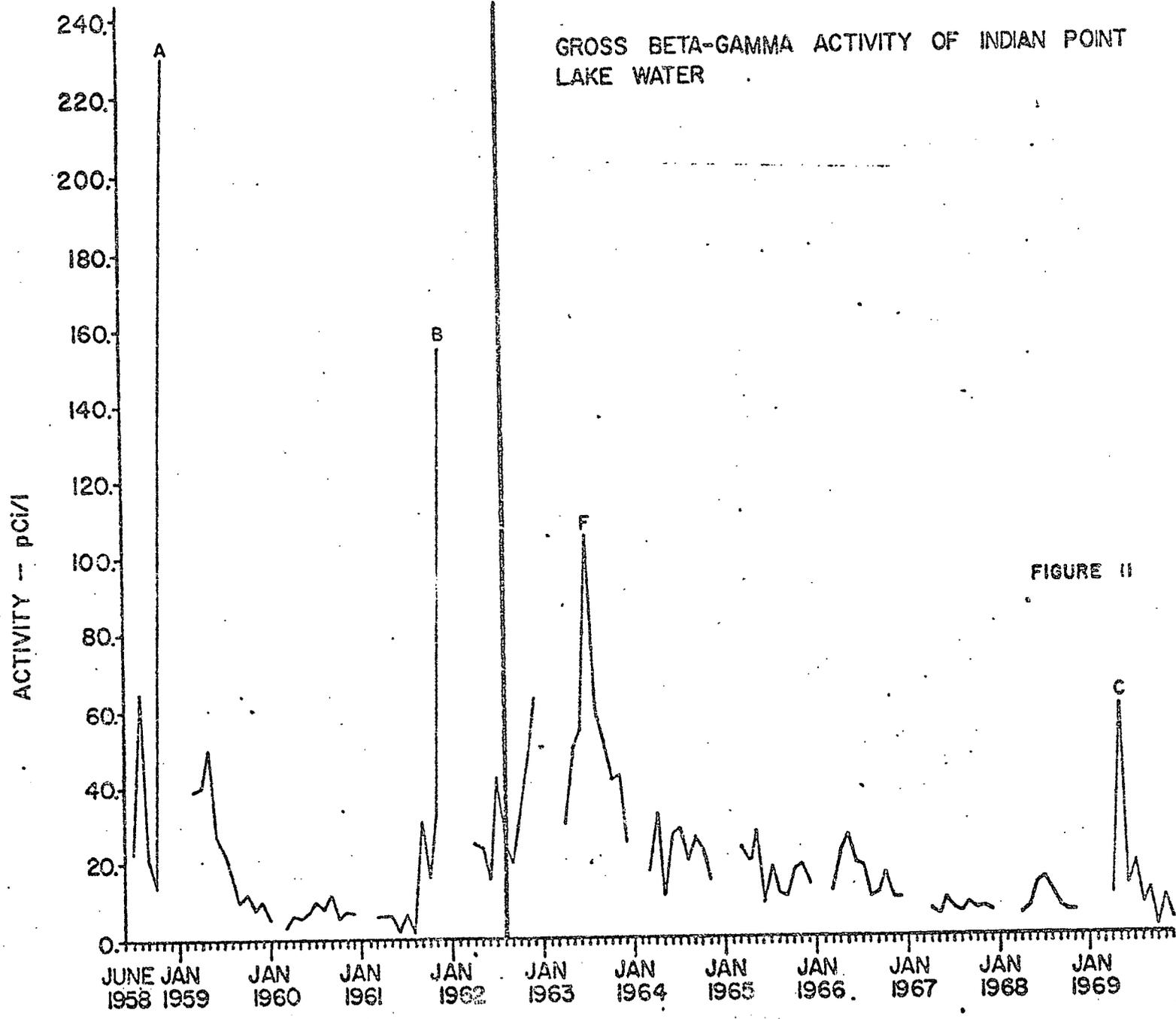
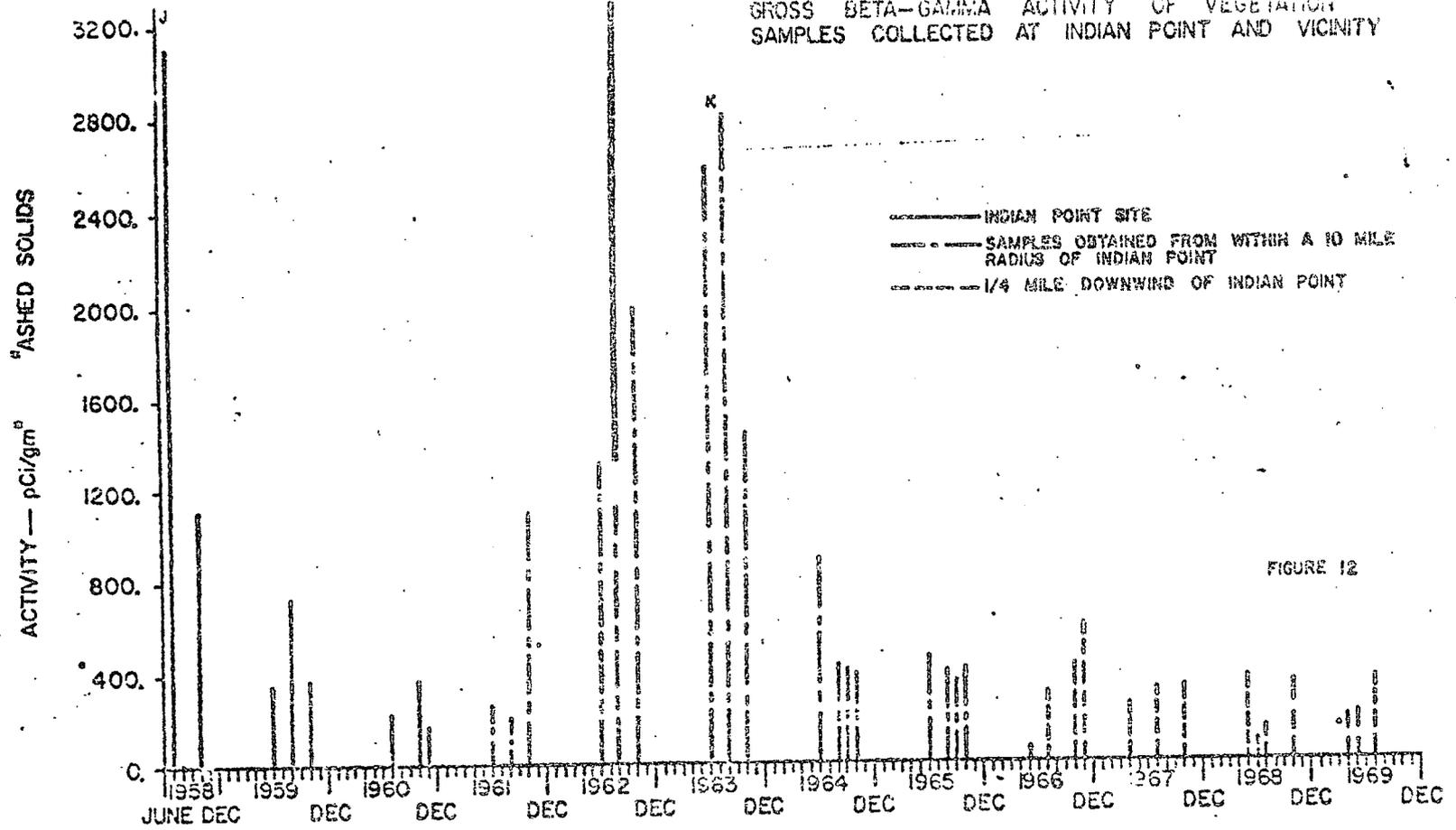
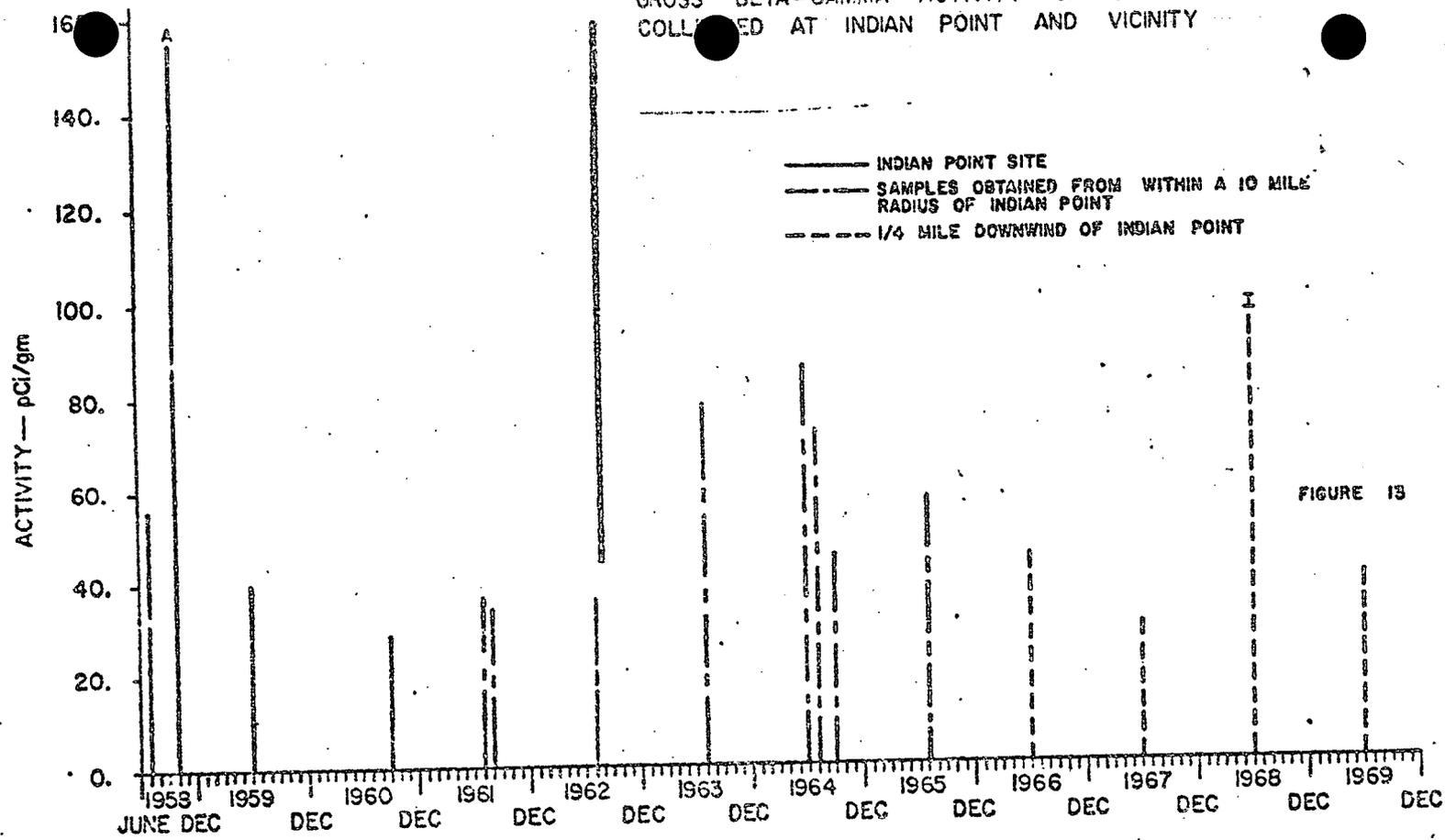


FIGURE 11

GROSS BETA-GAMMA ACTIVITY OF VEGETATION  
 SAMPLES COLLECTED AT INDIAN POINT AND VICINITY



GROSS BETA-GAMMA ACTIVITY OF SOIL SAMPLES  
COLLECTED AT INDIAN POINT AND VICINITY



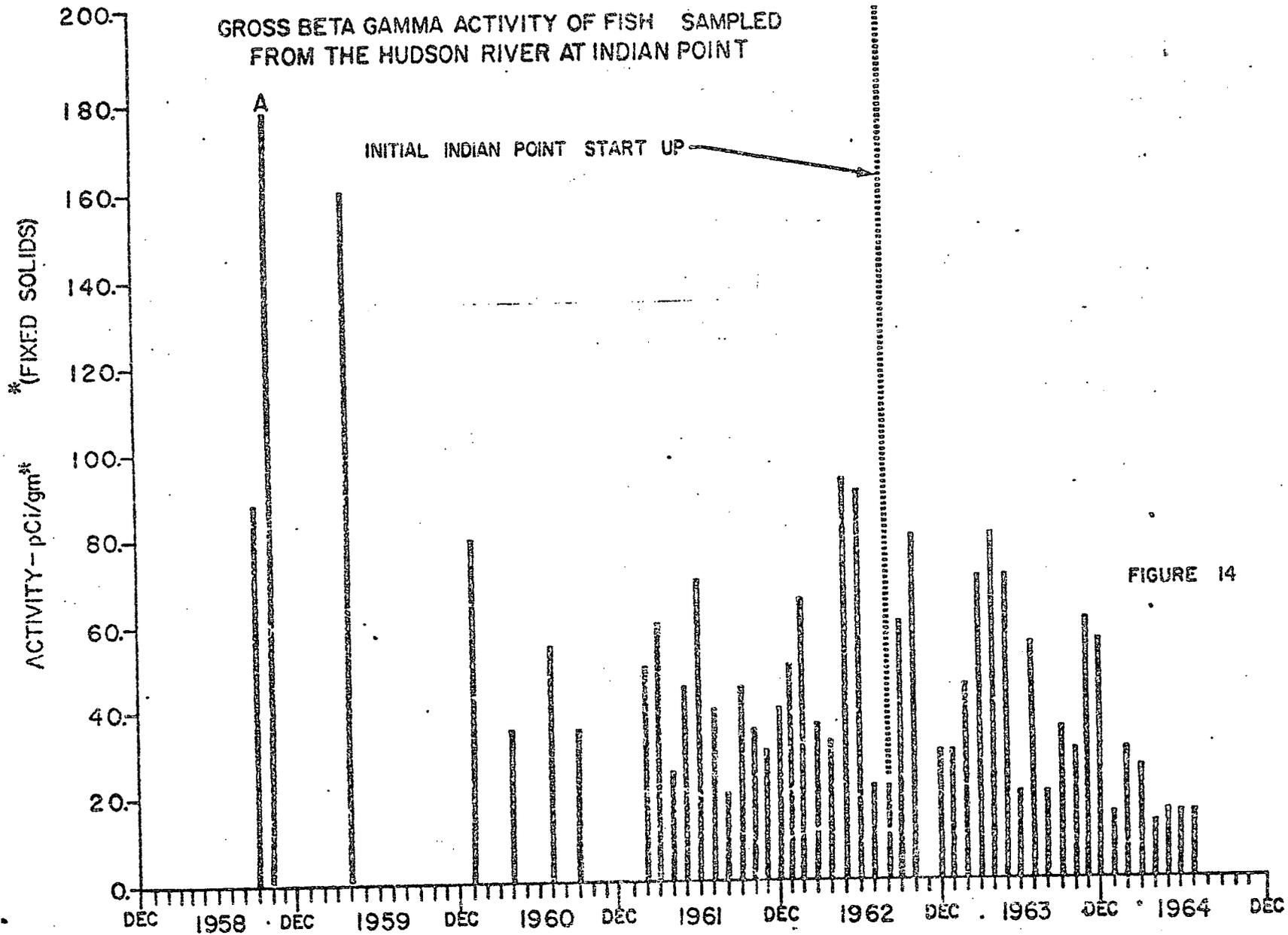
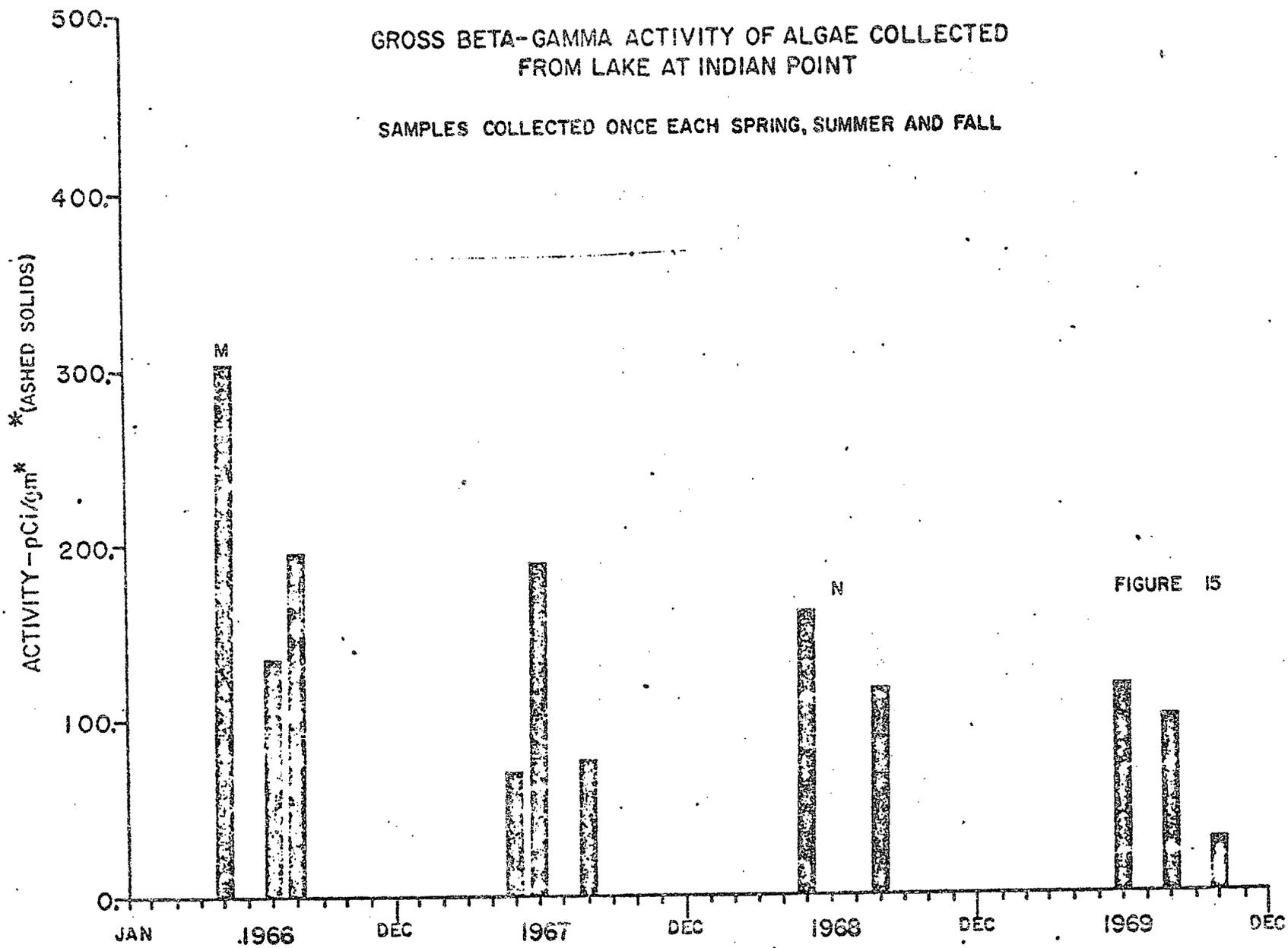


FIGURE 14

GROSS BETA-GAMMA ACTIVITY OF ALGAE COLLECTED  
FROM LAKE AT INDIAN POINT

SAMPLES COLLECTED ONCE EACH SPRING, SUMMER AND FALL



GROSS BETA-GAMMA ACTIVITY OF HUDSON RIVER AQUATIC VEGETATION COLLECTED  
AT THE SHORELINE 1 MILE DOWNSTREAM OF INDIAN POINT

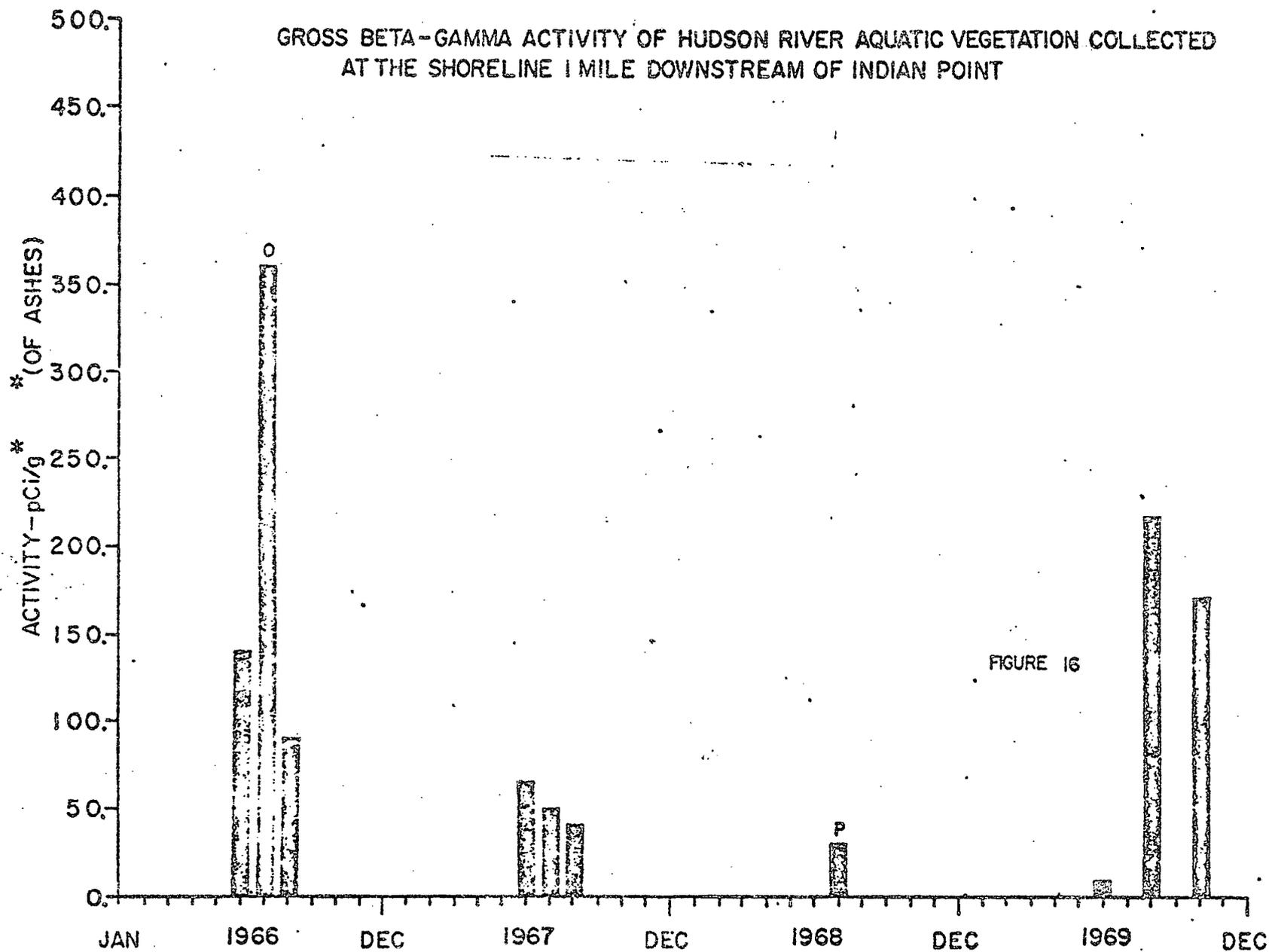


FIGURE 16

GROSS BETA-GAMMA ACTIVITY OF HUDSON RIVER SEDIMENT  
SAMPLES COLLECTED 1 MILE DOWNSTREAM OF INDIAN POINT

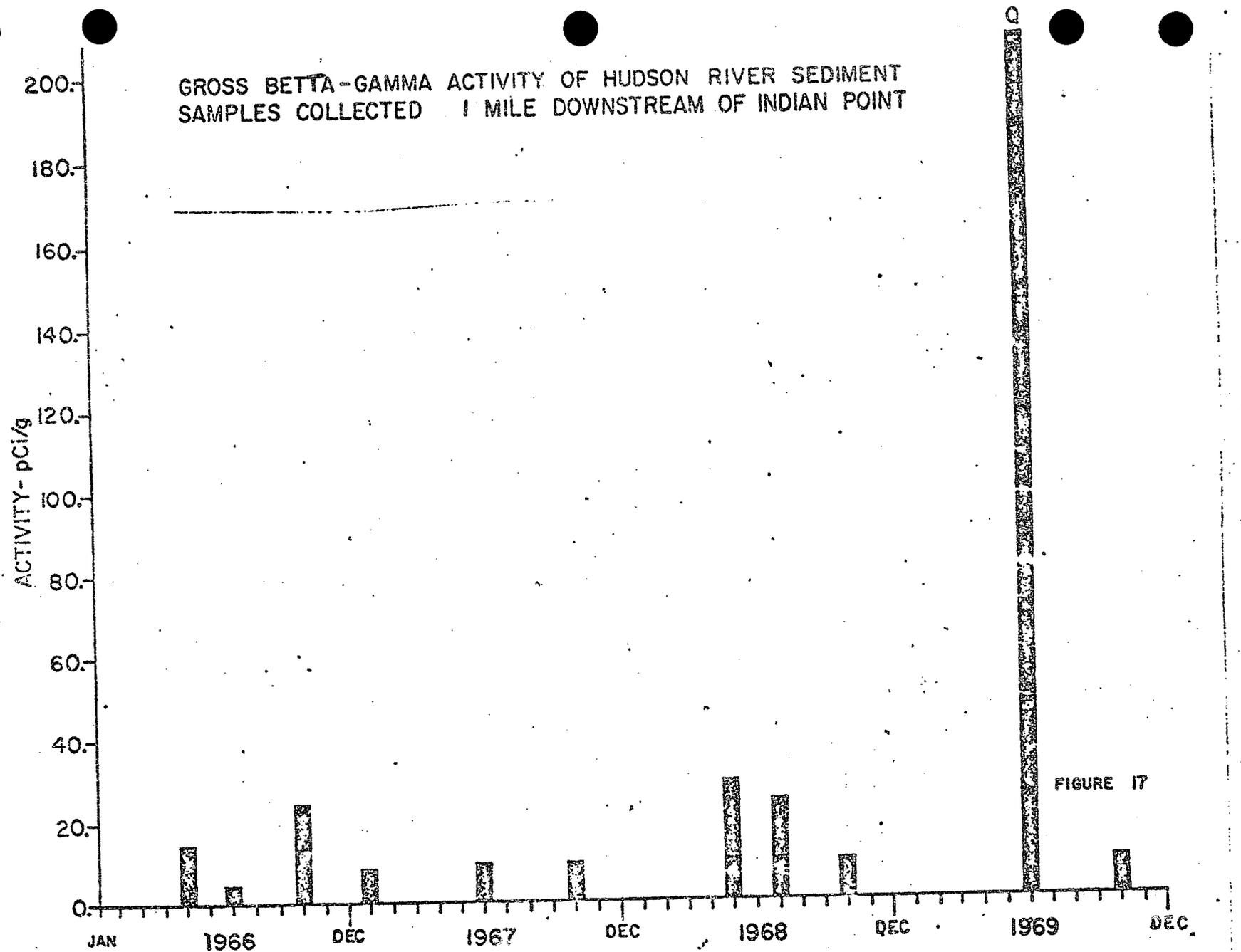


FIGURE 17

The Following Notes Pertain To Figures 1 Through 17.

- (A). Intensive atmospheric nuclear weapons testing by both the United States and Russia in October 1958. Fallout from these tests was reflected in marked increases in the gross beta activity of air, water, soil and vegetation samples.
- (B). Fallout resulting from the resumption of atmospheric weapons testing reversed a declining trend in the amount of background radioactivity. This is readily apparent from the results of measurements on media collected after September 1961 and is in agreement with measurements made by other agencies in this geographic location.
- (C). Increase in activity (fallout) attributed to the transfer of aged radionuclides (due to high yield atmospheric weapons testing) from the stratosphere to the troposphere.
- (D). Spectral analysis of the fallout samples showed predominantly fresh fission products. This increase is attributed to the Chinese atmospheric nuclear weapons testing in October and December 1966 and the increase in rainfall just prior to the January 1967 collection period.
- (E). The salinity of the Hudson River increases progressively from the spring to fall of each year. This salt front pushes its way upriver, thus salinity content increases seasonally.
- (F). An examination of measurements taken in the period February 1, 1963 through July 31, 1963 indicates that atmospheric fallout is still the dominating influence in most samples. In addition the samples from non-flowing surface water sources are still increasing in radioactivity from the accumulation of the longer lived fallout radionuclides.
- (G). Values of Potassium 40 found in the Hudson River water samples increased in the draught years 1964-1966 when low precipitation conditions increased the sea water intrusion. Thus giving a higher activity.

- (H). In 1962, and early 1963 air particulate, fallout and water samples showed higher average values than those obtained in 1961.
- (I). This slightly higher activity reflects the increase due to the Chinese atmospheric nuclear weapons testing of December 1967.
- (J). Effects of atmospheric nuclear weapons testing.
- (K). Intermediate lived fresh fission products characteristic of weapons testing fallout such as Niobium-95, Ruthinium-106 and 103, Zirconium-95 and Cerium-141 were found in the 1963 vegetation samples. In addition, meteorological conditions for the latter half of 1963 was characterized by an unusual lack of precipitation.
- (L). Samples of drinking water in 1961 were obtained from locations within a ten-mile radius of Indian Point. The following is a breakdown of that years drinking water data:

<u>NO. OF SAMPLES</u>	<u>GROSS BETA ACTIVITY pCi/l</u>		
	<u>Minimum</u>	<u>Maximum</u>	<u>Average</u>
209	less than 1	286	10

- (M). The May 1966 samples of algae collected from the Indian Point lake was only analyzed for Iodine-131 and none was detected. A complete spectrum analysis to detect the presence of other isotopes was not performed until the July samples were taken. The July samples showed predominately fresh fission products characteristic of weapons testing. In addition, the May fallout samples taken at Indian Point and Eastview showed an increase of gross beta gamma levels of approximately eight times the average.
- (N). Only two samples reported in 1958.

- (O). Algae is known to be a concentrator of radioactive isotopes, such as Iodine, Cobalt and Manganese. The samples of green slime scraped from Hudson River shore rocks collected at three sampling points, up to 2 miles downstream of the discharge canal, indicate the presence of Co58, Co60 and Mn54 in slightly higher concentrations than may be expected from fallout or other sources.
- (P). Dredging operations in connection with the construction of Units 2 and 3 have affected algae growth to the extent that only one month (July 1968) sample was collected and analyzed.
- (Q). Samples of bottom sediment were collected in the discharge canal and at four locations near the shoreline at various distances downstream of the plant. These were measured for gross beta radioactivity and a qualitative analysis made to determine radionuclide content. The gross beta radioactivity of these samples for 1968 is higher than the levels reported in the previous period and several are beyond the range of levels found in recent years which ranged from 10 to 120 picocuries per gram. Manganese-54 and Cobalt-60 can be attributed to plant releases while Potassium-40 is due to the natural salinity of the water and Cs 137 partly due to nuclear weapons testing and partly attributable to plant releases.
- (R). Of the ten well water samples collected once each month, from Indian Point in 1964, the following data was tabulated:

<u>Collection Month</u>	<u>GROSS BETA - GAMMA ACTIVITY pCi/l</u>		
	<u>Suspended Solids</u>	<u>Dissolved Solids</u>	<u>Total Activity</u>
March	2 + 3	2 + 4	4 + 5
April	3 + 3	5 + 4	8 + 5
May	10 + 4	5 + 4	15 + 6
June	50 + 3	30 + 4	80 + 5
July	5 + 3	5 + 4	10 + 5
August	10	6	16
September	5	10	15
October	3	3	6
November	5	5	5
December	5	5	10

Precipitation data (1) at four locations within a fifteen mile radius of Indian Point indicates that the summer months of 1964 were ones of severe draught conditions.

(S). This one isolated area, approximately 2 miles South of the Bear Mountain Bridge along Rout 9W is more than 10 times higher than other nearby sampling points. This level has remained consistantly high since readings were first taken and is believed attributable to a vein of uranium ore.

(1) Data obtained from U.S. Department of Commerce, Weather Bureau Climatological data for New York Annual Summary 1964, Volume 76, No. 13.

29. (J) (Tr. 500)

"Now, the applicant environmental impact statement in Appendix D stated on Page 2, thereof, if the average release rate from the plant vent is greater than 10 percent of the annual allowable release rate as specified in Paragraph 3.9-(B)1 during the month just ended, an environmental survey shall be conducted in accordance with 3 for the subsequent months.

"I couldn't find Paragraph 3.9-C1 and if that could be submitted, I would be happy to have it with the figures that are available."

ANSWER:

The Paragraph 3.9-C1 referred to is in the Applicant's proposed Technical Specifications, Page 3.9-2, Paragraph 3.9.C, Gaseous Effluents, Item 1.

30. (B) (Tr. 500)

"In the design of the plant you mention that the ECCS system was, according to reports, made more reliable and this permitted the removal of the crucible below the reactor and other considerations did too, apparently.

I would like to reemphasize the need for discussion of the research and development results that have led to the conclusion of the very high reliability that is attributed to the ECCS system."

ANSWER

For details of R&D related to emergency core cooling, see response to Board Question No. 10. Further information relative to this question will be contained in the forthcoming response to Board question No. 16.

31. (B) (Tr. 500)

"In the report there is indicated that certain changes or conditions will be required such as purging the containment or removal of the hydrogen, adding filters to the ventilation system.

I would like to have an indication as to why these changes or additions are not required before the plant goes into operation, why it is possible to let some changes or additions come along a year or two or three years after the plant begins to operate.

What considerations led to the conclusion that these could be delayed?"

Answer

AEC staff response

"As I read the reports the plant was not originally designed on the basis of taking into consideration the design basis formally. Calculations have been made to show what some of the resistance of some of the structures would be. I would like to have some discussion of what effects could be expected and, if you wish, what the probability would be of the design basis tornado interacting with the control room, the building in which the control room is located and also the building in which the decelerators are located and the effect that one could expect on the source of emergency power."

Answer:

Indian Point Unit No. 2 does not have a design basis tornado criterion. The capability of Indian Point Unit No. 2 to withstand high winds is stated in the answer to Question 1.11 of the FSAR.

The nearest weather stations to Peekskill having wind recording instruments capable of recording wind gusts of 100 mph or greater, and with records for twenty years or more, are the following:

Newburgh, N.Y. / Steward Air Force Base  
Bedford Mass. / L. G. Hanscom Field  
Atlantic City, N.J. / Naval Air Station, and Weather Bureau  
Rome, N.Y. / Griffiss Air Force Base  
Patuxent River, Md. / Naval Air Station

The National Weather Records Center, Asheville, N.C. searched the records of the above stations for observations of wind speeds greater than or equal to 100 mph. Only two cases of 110 mph and 111 mph maximum gusts, were found exceeding 100 mph. Both these cases occurred during the passage of hurricanes.

Question No. 33 (B) (Tr. 501)

"There is a statement in the staff Safety Evaluation that on the basis of the very low probability for wind speeds greater than 100 miles an hour at the Indian Point site and the resistance of these structures, that the unit is adequately protected against by winds.

I may have missed in the records any history of wind speeds greater than 100 miles an hour in this general area. If I have, I would like for someone to call to my attention the place where this reference is located. If not, is there information available on the frequency, the number of times when winds in this general area have exceeded 100 miles an hour. "

Answer

See answer to Board Question No. 32.

"On page 36 of the staff Safety Evaluation it is indicated that the Indian Point 2 reactor vessel cavity is designed to protect the containment against missiles that might be produced by postulated failure of the reactor vessel and it goes on to discuss some of this protection. The question here is concerned with whether the emergency core cooling system and the other provisions that have been made take into account such failure and, if not, why not?

Answer

The design bases of the ECCS does not take into account a postulated rupture of the reactor vessel because rupture of the reactor vessel is not considered credible. The reactor vessel is conservatively designed and carefully constructed with strict attention to quality control and quality assurance. Reactor operating limits and a responsible in-service inspection program are established by the Technical Specifications, which assure safe operation. Together, these eliminate the probability of reactor vessel rupture. The cavity design features referred to were incorporated on the recommendation of the ACRS at the time of its Construction Permit review.

35. (B) (Tr. 502)

"In several places it is indicated that the applicant has provided results of analyses which indicate that the consequences of failure to scram during transients are tolerable for the existing Indian Point unit to desire at a power level of 2858 megawatt thermal. It says additional studies are required for this general question.

I would like to know what additional study is being made, where there are results of such study and what the schedule is for completing those studies?"

ANSWER

Studies have been performed in addition to those determining the consequences of failure to trip. These additional studies involved a detailed failure analysis, using as a representative Westinghouse system the Indian Point Unit 2 reactor protection system, considering both random component failures and systematic or common mode failures. The purpose was to assess the likelihood of failure to trip during anticipated transients to determine whether it is acceptably small.

A probabilistic analysis of trip failure was performed considering random component failure as well as a detailed qualitative study of common mode failures which could prevent trip. Measures taken in design, construction, operation and maintenance to minimize common mode failures were also evaluated. Results indicate a very remote probability of failure to trip ( $2 \times 10^{-7}$ /demand) due to random component failure. The detailed evaluation of potential common mode failure also showed that adequate preventative measures have been undertaken such that the likelihood of failure to trip is acceptably small. The details of this study will be presented in a Westinghouse report to be submitted to the AEC later this month.

Question No. 36 (J) (Tr. 502)

"I have an Appendix C to the Safety Evaluation by the Staff. It bears the number 900 but it looks to be a portion of a letter from the Air Resources Environmental Laboratory. It seems like it should be followed by another letter but I do not have it. If that could be supplied or I assume it is an error in the assembly, that part of that page is missing. But the page that I do have, however, raises some matters and your attention is directed to the entire item.

But the last sentence of the first paragraph says in reference to the original documentation of the Indian Point site about winds within certain sectors and so forth and says "Although this point is at a distance 580 meters from Unit 2, it is not in the most prevalent wind direction by a considerable amount."

Answer

The statement from the Air Resources Environmental Laboratory applies in general to applicant's method of calculating the average annual dilution factor ( $\chi/Q$ ) which will be applied to determine the release rate for gaseous effluents from the site.

The suggestion is that  $\chi/Q$  be calculated in the sector with the most prevalent wind direction. The distance to the site boundary in the sector with the most prevalent wind is greater than 580 meters (823 meters). Applicant has calculated  $\chi/Q$  in this and several other sectors, and has found that the most restrictive limit

( $\chi/Q$ ) is not in the sector with the most prevalent wind direction. The  $\chi/Q$  value as presented in Applicant's proposed Technical Specification was a result of calculation with the worst combination of sector meteorology and distance to the site boundary and therefore is more conservative than that which was proposed by the AREL.

"Air Resources Environmental Laboratory state in their third paragraph: It is our view that the use of the building wake effect in the long-term average diffusion equation, as was done by the applicant, is inappropriate.

"Was there a further computation made by eliminating the building wake effect and, if so, what results derived from that computation?"

Answer

Yes, a further computation was made eliminating the building wake effect. Applicant computed a value of  $X/Q$ , the average annual dilution factor for Indian Point Unit No. 2 of  $2.05 \times 10^{-5}$  sec/m<sup>3</sup> without wake and suggested this for the proposed Technical Specifications. After discussions with the AEC staff, an even more conservative value for  $X/Q$  of  $2.5 \times 10^{-5}$  sec/m<sup>3</sup> was agreed upon for the revised proposed Technical Specifications, Section 3.9.C.1.

38. (J) (Tr. 503)

"The last preceding sentence of the second paragraph says "The only explanation we have for the ESSA Value"-- and I take it that is the Environmental Science Services Administration--" being twice as high is the use of the building wake effect in the Applicant's assumptions.

"So I wonder if that matter could be either recalculated or reconsidered and comments of both the staff and the Applicant given in that regard?" .

ANSWER

Although Applicant believes that the use of the building wake effect assumption is reasonable, the value of  $X/Q$  in the revised proposed Technical Specifications was calculated without this building wake effect. (See response to ASLB Question 37).

39. (J) (Tr. 504)

"We would like to have also a comparison between the R&D indicated to be necessary at the construction permit stage at Indian Point No. 2 and that which is indicated or advisable at the operating stage of Indian Point No. 2.

Why have there been changes and what data has been developed to indicate that others are indeed advisable? We call your particular attention to the findings submitted by both the staff and the applicant in that regard as well as the Board's decision which was issued at the time of the construction permit for Indian Point No. 2."

ANSWER

Only one R&D program has been added to the list of items listed as necessary for plant operation since the construction permit stage of Indian Point #2. That program is the Containment Spray Program. Based upon work done at ORNL and BNWL, the iodine removal aspects of the spray and spray additive have been studied experimentally and analytically.

In addition, the Containment Air Recirculation Filter studies, required at the construction permit stage, were reoriented to develop a system capable of removal of organic iodides instead of the original design to remove inorganic iodides. This change also required new investigations.

R&D required for the operation of Indian Point #2 has been completed. (See summary of application, section VII and the forthcoming answer to Board Question No. 16).

BEFORE THE UNITED STATES  
ATOMIC ENERGY COMMISSION

In the Matter of )  
Consolidated Edison Company )  
of New York, Inc. )  
(Indian Point Station, Unit No. 2) )

Docket No. 50-247

Answers of Applicant to Questions Raised  
by Atomic Safety and Licensing Board  
on January 19, 1971

Part II

March 22, 1971

Question No. 16 (J)\* (Tr. 490)

"Dr. Geyer referred in one part to the burnable poison and suggested that experimental test data might be of interest to confirm those conclusions with reference to burnable poison. I wonder also as a general matter if more of the experimental test data can be shown for several of the safety engineered components that are accepted in this proposal for this reactor.

For instance, the emergency core cooling system, what are the data that confirm the conclusions in that regard? I know in previous cases this subject has come up, but it is referred to continuously as research matter and there may be data which is more updated than we have last considered and might give us a summary of the R&D in this regard."

Answer:

Several investigative programs associated with the engineered safeguards used in Pressurized Water Reactors have been sponsored by the industry and AEC. This work includes the following:

1. Full Length emergency Cooling Heat Transfer (FLECHT) Test.
2. Westinghouse PWR Core Behavior following a Loss of Coolant Accident (See Appendix 14B of the FSAR and the responses to questions 14.12 through 14.15 of the FSAR).
3. Fuel Rod Burst Program.
4. Blowdown Forces Program.

\*Question by Mr. Jensch

Q.16 (J) (Tr.490)

5. Flashing Heat Transfer Program.
6. Environmental Testing of Engineered Safeguards Equipment (See question 7.8 of the FSAR).
7. Hydrogen Recombiner development and tests.
8. Fan Cooler Tests.
9. Charcoal Filter Testing Program.
10. Containment Spray Program.

Summaries of these programs follow.

1. Full Length Emergency Cooling Heat Transfer (FLECHT) Test Program

The Emergency Core Cooling System is provided to rapidly reflood the reactor vessel subsequent to a loss-of-coolant accident and thereby ensure that any damage to the core does not lead to unacceptable consequences. The Task Force <sup>1/</sup> on the technology of emergency core cooling concluded that further experimental verification and general evaluation of core cooling techniques should be conducted to provide additional assurance that they represent satisfactory approaches to emergency core cooling.

In response to this conclusion, the FLECHT Program was developed and is being carried out by Westinghouse under contract to Idaho Nuclear Corporation. Its objective is to obtain experimental reflooding heat transfer data under simulated (post) loss-of-coolant accident conditions for use in the evaluation of the thermal behavior of the fuel (and, therefore, system effectiveness) during this phase of the accident. The scope of the investigation includes evaluation of the effects of power density, initial clad temperature, flooding rate, inlet subcooling, system pressure, flow blockage, and soluble poison on the heat transfer data to be obtained.

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<sup>1/</sup> U. S. Atomic Energy Commission, "Emergency Core Cooling, Report of Advisory Task Force on Power Reactor Emergency Cooling," Oak Ridge, Tennessee, U.S.A.E.C., 1967.

The FLECHT tests are carried out in a simulated (once-through) emergency core cooling system which includes a flow housing for the instrumented test bundle, coolant accumulator-injection system, steam pressure regulation system, power supply, and associated auxiliaries. The electrically heated test bundle geometry corresponds to that typical of pressurized water reactor fuel assemblies, and, in heated length, heater rod pitch and diameter, and control rod thimble and instrumentation tube diameter, is identical to that of the Westinghouse fuel assembly.

Test results have verified the basic assumptions used in current PWR loss-of-coolant analyses, and demonstrated the effectiveness of bottom flooding and the importance of entrainment as heat transfer mechanisms. They indicate that flow blockage (at the midplane of the bundle) significantly increases heat transfer coefficients immediately behind the obstruction and do not affect heat transfer at other elevations or in outer unblocked channels. They also indicate that the presence of soluble poison tends to increase slightly the observed heat transfer coefficients. A final program report is being drafted.

2. Westinghouse PWR Core Behavior Following a Loss-of-Coolant Accident

Westinghouse PWRs are designed to withstand the thermal mechanical effects caused by loss-of-coolant accidents including that involving rupture of any reactor coolant pipe of size up to and including the hypothetical "double-ended" rupture of its largest reactor coolant system pipe. The core and internals with the Emergency Core Cooling System (ECCS) are designed so that the reactor can be shut down safely and the essential heat transfer geometry of the core preserved following the accident.

Analysis of the loss-of-coolant accident involves consideration of the core thermal transient and the integrity of the core and internals. This analysis involves evaluation of blowdown hydraulics, reactor kinetics, core cooling, and the forces acting on the core and internals. For this purpose, the SATAN V in which blowdown hydraulics, core and steam generator heat transfer and reactor kinetics are considered in a multi-node analysis of the accident in a PWR system and BLOWDN-2 Codes were developed. These codes have been verified by comparison with the results of experiments carried out at the LOFT and CSE facilities. The heat transfer correlations in the LOCTRA-R2 Code used for core cooling analysis have also been verified experimentally.

In the Indian Point Unit 2 Final Safety Analysis Report a design evaluation of the core and internals during a loss-of-coolant accident was presented. This evaluation was based on the use of conservative analytical techniques (including the FLASH-R Code) developed prior to completion of SATAN V. It showed that for breaks up to and including the double-ended severance of a reactor coolant pipe the Emergency Core Cooling System, with minimum effectiveness, will prevent clad melting and assure that the core will remain in place and substantially intact with its essential heat transfer geometry preserved. Further, it showed that the final core cooling systems design meets the core cooling criteria with substantial margin for all cases. The analysis of the integrity of the reactor internals established that stresses and deflections were below the allowables set to insure operation of the emergency core cooling system.

Further core thermal analysis for Indian Point Unit 2 was carried out with credit taken for the improved calculational methods that were developed and for more realistic but still conservative assumptions. This analysis showed that, for the full range of break sizes, the maximum clad temperature is significantly below the better than acceptable levels reported in the

FSAR (1440 degrees F. as compared with approximately 2200 degrees F.), and that, therefore, there is additional margin inherent in the design of the Indian Point Unit 2 Emergency Core Cooling System.

Subsequently, (as reported in Appendix 14B of the FSAR, Supplement 12), a detailed parametric study (using the Satan V Code) of the important phenomena affecting the blowdown process including the effects of heat transfer from core to coolant, reactor coolant pump characteristics, steam generator heat transfer characteristics, loop resistance and break location, and accumulator performance was carried out. It was concluded that with a conservative combination of assumptions and particularly conservative treatment of heat transfer during the early stages of blowdown, the peak clad temperatures are limited to approximately 2500 degrees F. A design basis analysis was then performed for the application rating using these conservative assumptions. This analysis showed that the maximum clad temperature calculated (2015 degrees F.) at 102% of the application rating is well below the Westinghouse 2700 degree F. maximum temperature criterion, and the local hot spot metal-water reaction (0.6%) is well below the 16.0% metal-water reaction criterion. These results indicate the existence of considerable margin for flow blockage effects and calculational uncertainties.

In the responses to Questions 14.12 - 14.15 of the FSAR (Supplement 13), it was noted that the maximum clad temperature calculated, using a multi-node analytical model (SATAN V), was 2427 degrees F. for a double-ended hot-leg pipe rupture at a core power of 3216 MWt, and the heat transfer correlations employed were shown to compare favorably to the most recent experimental data. In discussing limiting loss-of-coolant break sizes for which assured core cooling is predicted, it was noted that the analyses carried out are sufficient to assure adequate core cooling for all break sizes up to and including the double-ended rupture of reactor coolant piping, and that the analysis for the break of the largest connecting pipe to the Reactor Coolant System is not subject to the uncertainties associated with flow reversal and low pressure drop which occur in the large cold-leg break transient. Further, it was noted that, based on information reported in Supplement 12, core cooling can be assured for all break locations up to and including the double-ended breaks for powers up to the maximum calculated power of the reactor. The belief was expressed that there are no volumes of the core having instability problems. Supporting information developed in the Single Rod and Multi-Rod Burst Test Programs and the FLECHT Program

was cited as confirmation of the conservatism of the Westinghouse loss-of-coolant analysis. Finally, based on all of the above, it was concluded that the functional performance of the ECCS satisfies acceptance criteria with substantial margin, and it was noted that less adverse consequences than those predicted are expected.

3. Fuel Rod Burst Program

In the analysis of the loss-of-coolant accident, the effects of rod deformation and shattering, and eutectic formation are of concern. Rod deformation - swelling or bursting associated with internal pressure and reduction in clad strength - might lead to excessive flow channel blockage and impairment of core cooling effectiveness. Shattering, the potential effect of thermal shock during reflooding on an embrittled fuel rod, might lead to difficulties in maintaining fuel rod geometry intact. Eutectic formation between the Zircaloy clad and Inconel grids might affect fuel rod strength and Emergency Core Cooling System effectiveness.

The Fuel Rod Burst Program was formulated with the objectives of obtaining experimental data that can be used in defining these effects and the extent of geometric distortion that can be expected, and of evaluating the consequences of this distortion on coolant flow redistribution and the clad temperature transient in a PWR fuel bundle during the reflooding phase of the accident. The Program included Single Rod Tests in which the effects of the phenomena of concern were evaluated on both unirradiated and irradiated cladding, Multi-Rod Burst Tests in

which the effects of fuel rod interaction were evaluated, and an analytical effort in which the consequences of distortion were evaluated.

The Single Rod Tests lead to the conclusion that deformations of up to 50% on individual rods could be expected and that rod-to-rod interaction would result and would have to be evaluated quantitatively in Multi-Rod Burst Tests. They showed that quenching during reflooding does not lead to fuel rod shattering or loss of integrity over the range of conditions conservatively estimated in a loss-of-coolant analysis. They indicated that eutectic formation could be ruled out as a mechanism that would contribute to flow channel blockage.

The results of the Multi-Rod Burst Tests indicate that fuel rods burst in randomly distributed locations. Because of this, the occurrence of extensive flow blockage in the core during a loss-of-coolant accident is precluded. The maximum average assembly-wise flow area blockage does not exceed 50%. The analytical effort showed that this distortion results in a 25% reduction in assembly mass flow rate and an increase of but 70 degrees F in the peak clad temperature when compared to the no blockage case.

The experimental and analytical results of the Fuel Rod Burst Program provide added confirmation that the ECCS will satisfy acceptance criteria with substantial margin.

4. Blowdown Forces Program

Implicit in the requirement that the plant be capable of being shut down safely and the essential heat transfer geometry of the core be preserved subsequent to a loss-of-coolant accident is the further requirement that deformation of the reactor internals be kept sufficiently small to permit effective core cooling. Subsequent to the hypothetical "double-ended" break in the Reactor Coolant System, pressure waves would be produced that would cause vertical and horizontal excitation of core structures. The occurrence of an earthquake would cause similar excitation.

The objective of the Blowdown Forces Program was to demonstrate that the reactor internals will be able to withstand the assumed accident conditions without becoming so distorted that reactor shutdown and effective core cooling are prevented. The responses of the reactor internals of Indian Point Unit 2 to the excitation resulting from both the hypothetical "double-ended" break and to superimposed seismic excitation were therefore investigated in order to obtain the maximum stresses and deflections of interest.

Basic to this analysis is the use of the BLODWN-2 Code to evaluate in detail the pressure and velocity transients throughout the Reactor Coolant System during the subcooled, transition, and saturated blowdown regimes of the accidents. These transients are then used in the FORCE Code to evaluate in detail the loadings on the internals. BLODWN-2 results were shown to compare well with experimental data obtained at IITRI, LOFT, and CSE for a variety of system geometries and test conditions. As a consequence, though further work to extend its capabilities is indicated, its use for prediction of hydraulic transients in the Reactor Coolant System during the subcooled, transition, and saturated blowdown phases of the accident is considered justified.

The detailed analysis of the response of the Indian Point Unit 2 internals to blowdown and superimposed seismic excitation indicates that the maximum deflections and stresses in critical structures are below allowable limits. It shows that the upper barrel does not buckle during a hot-leg break, and that it has an allowable stress distribution during a cold-leg break. Further, it shows that none of the guide tubes will deform beyond the "no loss of function" limits established experimentally for control rod insertion. As a consequence,

it concludes that the reactor internals will be able to withstand the assumed accident conditions in accordance with design requirements.

## 5. Flashing Heat Transfer Program

In the analysis of the core thermal transient, conservative heat transfer coefficients are used to evaluate the effectiveness of the Emergency Core Cooling System. This conservatism arises because no credit is taken for transition boiling which is known to occur during the depressurization phase of the loss-of-coolant accident, for the effect of pressure on radiation heat transfer during the period when the core is uncovered, or for the effect of entrainment on heat transfer when the core is reflooded.

The objective of the Flashing Heat Transfer Program was to obtain experimental heat transfer data appropriate for the analysis of the core thermal transient, and to demonstrate that the heat transfer coefficients presently employed are indeed conservative. Transient heat transfer coefficients under blowdown conditions were measured and compared with those predicted by a correlation for heat transfer after DNB derived from steady state film boiling and transition boiling data. Local heat transfer coefficients were measured for total simultaneous convective and radiation heat transfer from uniformly and non-uniformly heated tube surfaces at elevated temperatures to low pressure saturated and superheated steam in fully developed laminar and turbulent forced convection.

Investigation of heat transfer during the reflooding phase of the accident was initiated and extended extensively in the FLECHT program.

As a result of this work, it is concluded that blowdown heat transfer coefficients are indeed predicted conservatively by the correlation presently employed. Further, it was concluded that the radiant heat transfer contribution to the total heat transfer coefficient is adequately predicted by Hottel's technique. In summary, it was concluded that present thermal analysis techniques lead to conservative predictions of the peak clad temperature.

6. Environmental Testing of Engineered Safeguards Equipment

Subsequent to a loss-of-coolant accident or a steam line break, specified equipment and components, including pressure, flow, and level transmitters; valve operators; fan cooler and internal recirculation pump motors; the hydrogen combustion system; and power control and instrument cable for safeguards equipment are required to be operable. The objective of the environmental testing program was to demonstrate that these components would perform their required functions in the post loss-of-coolant accident environment.

Tests carried out by Westinghouse and the supplier demonstrated that pressure and flow transmitters will provide the required signals in the specified steam environment. Environmental testing of level transmitters was not required because satisfactory performance has been demonstrated in actual environments more severe than post LOCA design conditions.

The environmental tests carried out on valve operators included preliminary dry heat tests on limit and torque switches and on actuators; preliminary live steam tests; heat aging of motors; life cycle tests under loaded conditions; and environmental tests. In addition, the effects of irradiation on the valve

motor were evaluated. The tests showed that the valve operators would perform satisfactorily in the post LOCA environment and lead to the conclusion that Class H operators should be supplied for applications where operation in excess of 12 hours is required.

The tests of the fan cooler and internal recirculation pump motors included environmental tests in the presence of steam and alkaline boric acid, and irradiation testing of motor insulation and lubricant. The tests showed that the motors would perform satisfactorily in the steam-alkaline boric acid environment and that motor insulation and lubricant undergo no significant changes in properties and would perform satisfactorily following exposure to radiation levels calculated for the accident.

Full scale proof tests were carried out to demonstrate the operability of the hydrogen combustion system. These included irradiation and subsequent environmental testing of the exciter-igniter unit. Test results indicated that this unit would perform its required function following the loss-of-coolant accident. The tests also included irradiation, thermal aging, and environmental testing of a 2 HP motor constructed as a recombiner motor. Test results indicated that the recombiner motor would perform its required function following the accident.

Finally, cabling of the type installed in Indian Point Unit 2 was tested by Westinghouse and the supplier under conditions simulating the accident including steam and chemistry, thermal aging, and radiation. These tests showed that cabling and splices would maintain their required integrity under post accident conditions.

In summary, the environmental test program demonstrated that the specified equipment and components which must be operable during and subsequent to a loss-of-coolant accident or steam line break will indeed perform their required functions in the resulting environment.

7. Hydrogen Recombiner Development and Tests

Following a major loss-of-coolant accident, it is postulated that hydrogen would be generated inside containment by radiolysis, zirconium-water reaction, and the reaction of aluminum with alkaline spray solution. The containment must be sealed for an extended period to prevent the release of radioactive contaminants to the environment. During this period, conservative estimates, based on observed generation rates in tests simulating accident conditions, indicate that hydrogen concentrations could reach and exceed flammable limits.

Accordingly, a system capable of controlling the concentration of hydrogen inside reactor containment at acceptable level was designed. The system consists of a flame combustor in which containment atmosphere, the primary oxidant, and supplemental hydrogen, the fuel are combined. It is designed to control buildup of hydrogen to less than 2 v/o, one half the lower flammable limit. The containment ventilation system provides assurance that local stratification will not occur. The system is designed with adequate capacity, redundancy, isolation provision, instrumentation, capability for periodic testing and conformity with appropriate codes. Logistic studies have shown that hydrogen fuel can be supplied to the site in time and in the quantities required for system operation.

One flame recombiner built for installation at the Rochester Gas and Electric Corporation, Ginna Plant, was tested at Virginia Polytechnic Institute Industry center. The recombiner consisted of a combustor, motor, and blower on an integral base. The objective of the test was to demonstrate the soundness of design and construction, prove the stability of the recombiner over a wide range, and define the range of operating conditions within which the recombiner efficiently consumed hydrogen.

The tests showed that the recombiner would perform all normal functions faultlessly and with ease, and that it was stable over a wide range of operating conditions within which the system might operate. Finally, they lead to the recommendation of operating limits that are independent of hydrogen concentration in the containment atmosphere up to the lower flammable limit. The tests therefore confirmed the soundness of the design and construction of the hydrogen recombiner.

8. Fan Cooler Tests

The Reactor Containment Fan Cooler (RCFC) is an engineered safety feature provided to reduce pressure and temperature within the reactor containment following a loss-of-coolant accident. It must, therefore, be capable of operating under post accident environmental conditions.

The fan drive motor (classified by NEMA as a totally enclosed pipe vented machine) and its associated bearings, seals, and environmental control unit are essential to the operation of the fan cooler. Tests were, therefore, carried out to confirm that these components would perform satisfactorily in the post accident environment.

Tests on the fan drive motor demonstrated the ability of the environmental control unit to maintain temperatures and humidities in the motor cavity at conservative levels within the range of conditions for which extensive field experience is available. Further tests in which the winding insulation was deliberately exposed to steam confirmed the ability of the insulation to tolerate a more adverse environment than that which would be experienced during the worst postulated accident.

Tests were performed to demonstrate that the motor insulation system will perform satisfactorily following exposure

to radiation levels calculated for the design basis accident.

The tests included high potential and breakdown voltage measurements subsequent to irradiation, thermal aging, and vibration of form wound motor coils. The test results clearly indicate that the motor insulation system will perform its intended function satisfactorily.

Tests were carried out to evaluate the performance of the fan and fan motor bearings and lubricants during periods simulating the initial pressure transient, environmental conditions in containment during the first 24 hours after the accident, and under long term post accident conditions. These tests demonstrated that there was no discernable difference between the behavior of irradiated and unirradiated grease, or abnormal wear of bearings attributable to the tests.

The environmental control unit provided with the fan drive motor includes a relief valve provided to prevent external overpressure during loss-of-coolant accident pressure transient. Tests were carried out to evaluate the transient behavior of two types of valves and to measure their ability to protect the ductwork connecting the motor with its heat exchanger. Test results indicated that the valves performed their required functions satisfactorily.

In summary, the fan cooler test program demonstrated that components essential for operation would perform satisfactorily in the post accident environment.

## 9. Charcoal Filter Program

### Introduction

Radioactive iodines in both inorganic (elemental) and organic (principally methyl iodide) forms, could be available for leakage from the containment in the unlikely event of fuel damage associated with a large primary system rupture. Since radioactive iodine is a relatively major radiological hazard, it is advantageous to be able to remove a large fraction of the iodines from the post accident containment atmosphere before they could leak out, or be released from the plant. Charcoal filters may be used for this decontamination, and are designed as engineered safety systems and installed in plants such as Indian Point Unit No. 2 where conservative dose calculations indicate their use is required.

Prior to the work done under this program, it had been established that iodine, as radioactive methyl iodide, could be trapped efficiently from a simulated post accident containment atmosphere of high humidity. However, there was some uncertainty that the high efficiency of the filters was maintained at and near the conditions of 100% relative humidity which may exist in the containment following a loss of coolant accident, and the purpose of the program was to investigate this aspect of charcoal filter performance.

Program

An experimental program was conducted at the Oak Ridge National Laboratory (ORNL) to determine the efficiency of radioactive methyl iodide trapping from flowing steam-air by impregnated charcoal filters. Eighteen test runs were made. Six of these were at 90-100% relative humidity, with the pressure, temperature, flow velocity, flow direction, methyl iodide concentration, filter thickness and charcoal type identical to or closely simulating those predicted or used for Indian Point Unit No. 2 at the post accident peak. Other tests investigated recovery from flooding, change in flow direction, and increase in methyl iodide concentration.

The results show that for the conditions expected, and the filter configuration used, in Indian Point Unit No. 2 the following performance may be anticipated:

Relative humidity*	Removal efficiency per pass
(%)	(%)
94.0	98.6
99.6	88.9
100.2	87.3
101.5	30.7

\*Calculated average

Even when the charcoal was flooded for up to 2.5 hrs., then purged with saturated air, the removal efficiency was 9.8% which is acceptable for this application. However, flooding of the charcoal for even a short period is highly unlikely as the

Westinghouse filter is designed to be self-draining.

From these results, it is concluded that the Westinghouse charcoal filter design used in Indian Point Unit No. 2 has an initial removal efficiency of at least 70% per pass for all post accident containment atmosphere environmental conditions up to and including 100% relative humidity.

## 10. Containment Spray Program

### Introduction

The purpose of this program was the development of technical information to substantiate the effectiveness of a chemically reactive spray for removal of fission product iodine from the containment atmosphere following a loss of coolant accident.

The containment spray system as described in the Preliminary Safety Analysis Report was designed to be activated automatically following such an accident to condense steam, thus reducing the containment internal pressure, and simultaneously to cause absorption of elemental iodine vapor. In the design basis accident condition, in which the function of the pressurized containment seals is not taken into account, it is a design objective that the sprays could reduce by a factor of about 10 the leakage of elemental iodine which otherwise occur in the first two hours following the accident. In order to show that this could be achieved with the spray system operating at minimum capacity, an analysis was presented in the PSAR based on the "single drop" model derived from Griffith's work. Simplifying assumptions were made in this model which were subject to verification before a final assessment could be made of the margins of safety inherent in the system design. Moreover, it was desired to test the validity of the model against measured data obtained in the most realistic practicable simulations of actual containment conditions.

### Development of Non-Idealized Model

To carry the investigation forward, a detailed model was derived containing the representations of liquid phase mass transfer resistance, drop trajectories, condensation and coalescence effects, and multi-group simulations of the complete droplet size spectrum. Analyses of the sensitivity of spray performance to these effects showed them to be of minor importance in a system similar to Indian Point Unit No. 3, confirming the validity of the questioned assumptions.

### Experimental Verification

The detailed model was applied to a number of tests performed in model containment vessels at the Nuclear Safety Pilot Plant (NSPP) at Oak Ridge National Laboratory and the Containment Systems Experiment (CSE) at Battelle Northwest Laboratory.

In those NSPP tests which employed the nozzle type used in the Indian Point containments, for which the model was derived, measured iodine removal rate was consistently higher than that predicted by the model. These tests included runs at room temperature as well as accident conditions, with and without chemical additives.

Similarly, the data from the two applicable CSE tests, using a similar type of nozzle, when compared with prediction by the detailed model, showed the model to be conservative in this system also. In summary, both NSPP and CSE tests showed that

actual iodine absorption rates in model containments up to 1/3 the height of the Indian Point system are underpredicted by the model.

#### Assurance of Plant Conformance to Design

As an added assurance of model validity, a statistical sampling of nozzles to be used in Unit No. 2 was tested to demonstrate uniformity and conformance to the distribution model. Tests showed manufacturing deviations to have no discernable effect which could reduce system performance.

#### Conclusions

The Containment Spray Program resulted in improved modeling capability whereby the idealistic assumptions of the preliminary analysis were investigated. Results showed the apparent performance margins in the spray system were not significantly diminished by any one, or the combination of these suspected deviations.

1 MR. TROSTEN: I now refer to a document entitled  
2 "New York State Emergency Plan for Radiation Accidents  
3 Involving Nuclear Facilities," dated February of 1971, a copy  
4 of which was furnished to the Board and the parties on March  
5 19, 1971, and I ask that this document be marked for  
6 identification as Applicant's Exhibit 2.

7 CHAIRMAN JENSCH: What witnesses are you going to  
8 utilize to support this document?

9 MR. TROSTEN: This will be sponsored in evidence  
10 by Mr. Joseph Prestele and Mr. John Crob.

11 CHAIRMAN JENSCH: This is a State of New York  
12 document, isn't it?

13 MR. TROSTEN: This document is one, as will be stated  
14 in a moment by the witnesses, which has been received by  
15 the Applicant from the State of New York. It represents a  
16 plan developed by the State of New York, and included in this  
17 plan are various matters which have been discussed by the State  
18 of New York with the Applicant, and which reflects understand-  
19 ings reached by the Applicant with the State of New York  
20 concerning emergency planning specifically with respect to  
21 the Indian Point #2 facility.

22 Mr. Crob and Mr. Prestele are fully familiar with the  
23 contents of this plan and the discussions leading to its  
24 development and are prepared to testify with respect to aspects  
25 of it.

1 CHAIRMAN JENSCH: I understand that, but it is  
2 prepared by another group with assumes responsibility for its  
3 accuracy. While these gentlemen may have talked it over with  
4 the State people, I wonder if that is the necessary documenta-  
5 tion to justify a document prepared by another person?

6 MR. TROSTEN: May I suggest this? It is my view that  
7 the two witnesses to which I have referred are competent to  
8 respon and sponser in evidence this plan for the limited  
9 purpose to which I have just described -- namely, to show  
10 the results of the agreements reached by the Applicant with  
11 the State of New York concerning the Indian Point #2 facility,  
12 and to show the actions that will be taken by the Applicant  
13 in cooperation with the State of New York pursuant to this  
14 plan in the event that the plan should ever be called in to  
15 use.

16 CHAIRMAN JENSCH: In other words, your testimony  
17 would be principally of the intended compliance of actions  
18 taken pursuant to this program?

19 MR. TROSTEN: That is correct.

20 CHAIRMAN JENSCH: Any objection to the offer by  
21 Applicant? Staff?

22 MR. KARMAN: No objection.

23 MR. ROISMAN: Mr. Chairman, although I know I am  
24 reserving all of my rights to object, although I think this  
25 can be important later on, as long as there is right to reserve

1 I don't object, and I don't want the witnesses to get up and  
2 present what I eventually say will be hearsay if they do it.  
3 But from the standpoint of the Citizens Committee now we would  
4 want some assurance that this is in fact the New York State  
5 plan because one of the issues as you know is that we are con-  
6 cerned with what steps will be taken in the event of an  
7 accident, and we are concerned with the merits of that plan.

8           If we got a New York State official the official  
9 would say the plan is in transition or we are considering it  
10 or won't necessarily follow it exactly -- that would be rele-  
11 vant to decide whether or not proper emergency provisions  
12 should be taken. We don't have any objection to the Applicant  
13 putting it in evidence now and letting us deal with the subject  
14 at a subsequent time, but I would like to state for the record  
15 we would particularly argue there is no foundation for the  
16 purpose which we would consider it to be relevant in this  
17 hearing.

18           It its only purpose for being introduced is to show  
19 that the Staff and the State of New York have talked about  
20 something I would say that doesn't have any relevance in this  
21 hearing unless it is something that binds both the State of  
22 New York and the Applicant to do things under an emergency.

23           CHAIRMAN JENSCH: I think there is a serious question  
24 as to foundation, but I think foundation can be supplied at a  
25 time when the particular merits will be important, and the

1 opportunity for supplying documentation evidence could be made  
2 available at a later time.

3 MR. SCINTO: Mr. Chairman.

4 CHAIRMAN JENSCH: Yes.

5 MR. SCINTO: The plan that I have in my hand which I  
6 believe is the one Mr. Trosten just referred to was approved  
7 by the New York State Atomic Energy Council on March 15, 1971,  
8 who has adopted it with the State's radiation emergency plan  
9 by the State Department of Health on March 16, I believe the  
10 date is.

11 We recognized from the outset of this proceeding that  
12 the Board recognized the question about the emergency action  
13 to be taken by the State in connection with this facility and  
14 we are indeed planning at an appropriate time in this proceed-  
15 ing to have State officials available in connection with this  
16 to respond to any questions that the Board may have or the  
17 parties with respect to the State's emergency plan.

18 CHAIRMAN JENSCH: I think the question, however, is  
19 foundation, not its merits, not its performance. Your statement  
20 is helpful but I think we are looking for the responses of  
21 officials that say this is the official document of the State  
22 of New York and it has been adopted after consideration of such  
23 and such a factor.

24 I think that kind of evidence can come in at a later  
25 time. This is understood.

1 MR. TROSTEN: It is my understanding, Mr. Chairman,  
2 we would have no objection and would be pleased to have a  
3 witness from the State of New York to present not only this  
4 foundation testimony but other testimony concerning the State  
5 emergency plan.

6 CHAIRMAN JENSCH: With that understanding and with the  
7 reservation of rights as to later objections to relevancy,  
8 the request is granted and the document may be marked for  
9 identification and, having been identified, may be received in  
10 view of the considerations of the several statements here as  
11 Applicant's Exhibit No. 2.

12 (The document referred to was  
13 marked Applicant's Exhibit 2  
14 for identification, and was  
15 received in evidence.)

16 CHAIRMAN JENSCH: If you will furnish sufficient  
17 copies to the reporter for transmittal as part of the  
18 official record?

19 MR. TROSTEN: Yes, we will do that.

20 I now show Applicant's Exhibit No. 2 for identifica-  
21 tion to Mr. John Crob and Joseph Prestele, and ask you if you  
22 are familiar with the contents?

23 (Chorus of "Yes.")

24 MR. TROSTEN: Was it received by the Con Ed  
25 Company from the State of New York?

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(Chorus of "Yes.")

MR. TROSTEN: Was the Company informed at the time it was received that its contents had been adopted by the Atomic Energy Council of the State of New York?

(Chorus of "Yes.")

MR. TROSTEN: Did you participate in the discussions between the Con Edison Company of Applicant's Exhibit 2 for identification?

(Chorus of "Yes.")

MR. TROSTEN: Are you responsible on behalf of Con Edison Corporation for its participation in the emergency plan I described?

(Chorus of "Yes.")

MR. TROSTEN: Mr. Chairman, I offer Applicant's Exhibit 2 in evidence in further response to Atomic Safety and Licensing Board's questions addressed to Applicants at the January 19, 1971 hearing.

CHAIRMAN JENSCH: Your offer is accepted; the document has been made part of the official record in this proceeding. As I understand this was adopted the other day?

MR. SCINTO: In this form, Mr. Chairman.

CHAIRMAN JENSCH: Very well.

Is there any other form that might be important for us to know about?

MR. SCINTO: Mr. Chairman, my qualifying statement

1 would indicate that generally we have had emergency plans  
2 applicable in the State of New York for all the facilities  
3 that have existed. It has not been in this form, not in the  
4 same form. They have been in different forms as documents.  
5 They have been pulled together into this format because this is  
6 one of the first cases which has arisen after the Commission's  
7 Regulatory Amendments included provisions for emergency in which  
8 the Commission more clearly spelled out its thoughts with  
9 respect to the documentation.

10 CHAIRMAN JENSCH: Then the answer to the question  
11 is yes, you have adopted this on March 15, 1971, is that  
12 correct?

13 MR. SCINTO: In this form, yes, sir.

14 CHAIRMAN HENSCH: Do you have additional testimony?

15 MR. TROSTEN: Mr. Chairman, we have no additional  
16 evidence to offer at this time.

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MR. KARMAN: Mr. Chairman, at our hearing in December we submitted professional qualifications for Messrs. Muller, Kniel, Moseley, and Madsen.

I would like at this time to incorporate into the record the professional qualifications of Mr. Michael McCoy in addition to the other gentlemen whose names I just mentioned.

CHAIRMAN JENSCH: Did you have a statement of his qualifications here?

MR. KARMAN: Yes, Mr. Chairman.

CHAIRMAN JENSCH: Sufficient for distribution to the parties?

MR. KARMAN: Sufficient for distribution to everybody.

CHAIRMAN JENSCH: Very well. We will take distribution on that and when the parties have considered this, the question pending to them is: Is there any objection by the parties to physically incorporate into the transcript of this statement?

MR. TROSTEN: No objection.

MR. ROISMAN: No objection.

MR. MAC BETH: No objection.

MR. SCINTO: No objection.

(The professional qualifications of Michael A. McCoy follows:)



1 MR. KARMAN: If I may, I would like to ask Mr.  
2 McCoy several questions which would allow us to incorporate  
3 this into the record.

4 CHAIRMAN JENSCH: Has he been sworn?

5 MR. KARMAN: Not to the best of my knowledge.

6 XXXXXX Whereupon,

7 MICHAEL A. MC COY

8 was called as a witness on behalf of the Regulatory Staff and,  
9 having been first duly sworn, was examined and testified  
10 as follows:

11 DIRECT EXAMINATION

12 MR. KARMAN: Mr. McCoy, I ask you to state your  
13 name, your employer and the position you hold with your  
14 employer.

15 MR. MC COY: My name is Michael McCoy. I am a  
16 Nuclear Engineer with the U. S. Atomic Energy Commission,  
17 Washington, D. C. 20545.

18 MR. KARMAN: Did you prepare a statement of your  
19 professional qualifications?

20 MR. MC COY: Yes, sir.

21 MR. KARMAN: Do you have any corrections or  
22 notations to this statement?

23 MR. MC COY: No.

24 MR. KARMAN: Are the statements of your professional  
25 qualifications true to the best of your knowledge?

1 MR. MC COY: Yes.

2 MR. KARMAN: Do you adopt these as part of your  
3 testimony in this proceeding?

4 MR. MC COY: Yes, I do.

5 MR. KARMAN: At this time I offer into evidence  
6 the statement of professional qualifications of Mr. Michael  
7 McCoy and request it be incorporated into the transcript as if  
8 read

9 CHAIRMAN JENSCH: Any objections?

10 Hearing none, the request is granted and the  
11 Reporter is directed to incorporate within the transcript a  
12 statement of professional qualifications of the Witness  
13 McCoy.

14 MR. KARMAN: Mr. Chairman, at the time of the  
15 hearing in December of 1970 the Staff introduced as its  
16 Exhibit No. 1, a proposed operating license and attached to  
17 that proposed operating license is an Appendix A known as  
18 the "Technical Specifications for the Official License."

19 I would now like to distribute and request that  
20 this be incorporated as Appendix A to our proposed operating  
21 license the latest specification that is entitled "Appendix A,  
22 To Proposed Facility Operating License, Technical Specifications  
23 and Bases, Docket No. 50-247."

24 This we would prefer to call Supplement No. 1 to  
25 Staff counsel Exhibit No. 1.

1 CHAIRMAN JENSCH: My recollection is that the proposed  
2 operating license --

3 Yes, this will be Staff Exhibit No. 1. The  
4 documents to which Staff counsel has just referred may be  
5 identified as Supplemental No. 1 to Staff Exhibit No. 1.

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6 (The document referred to was marked  
7 Staff Exhibit Supplemental No. 1,  
8 for identification.)

9 MR. KARMAN: Thank you.

10 CHAIRMAN JENSCH: Havening that identified, is it  
11 your intention to offer Staff Exhibit Supplemental No. 1?

12 MR. KARMAN: Yes, I thought I did.

13 CHAIRMAN JENSCH: Any objection by anybody?

14 MR. ROISMAN: Mr. Chairman, on behalf of the  
15 Citizens Committee, we would reserve our rights as usual  
16 but I would be curious if it is possible to know how these  
17 technical specifications differ from the ones we used to  
18 prepare round two questions which we thought were technical  
19 specifications to this plan?

20 If there are a few minor typos and things like that  
21 it is understandable, if not we have to know whether we ended  
22 up on receiving different specifications. Is there something  
23 that identifies the changes?

24 MR. MULLER: The technical specifications you have  
25 there are substantially the same as the previous set. There

1 are, as you characterized, a few typos and some other  
2 relatively minor modifications. We don't have an index of  
3 the changes at this time but the question or the previous  
4 specs on which you base your question -- I am sure your  
5 questions are still applicable.

6 MR. ROISMAN: Well, Mr. Chairman, the basis for my  
7 question was whether there is something new in this tech  
8 spec which would have raised other applicable questions.  
9 I don't know how we can resolve this but it would be very helpful  
10 for us to know without having to go over it page by page  
11 ourselves, where those subtle changes are.

12 I am not talking about typographical errors, unless  
13 they happen to be changes in figures or percentages, which  
14 of course would be important, but as to these minor ones, we  
15 feel it would be up to us to decide that.

16 The problem is that we have decided we would not  
17 ask any more questions; now we would have round three questions.  
18 I don't want to go through a whole process; I wonder if there  
19 is some easy way to know whether there is something that we  
20 missed that we would have looked at in these technical  
21 specifications.

22 CHAIRMAN JENSCH: I think it is a question that  
23 raises reasonable inquiry. I don't know whether you have a  
24 couple of secretaries in the Atomic Energy Commission who  
25 could page by page read these and identify themselves and give

1 a statement to all parties here as to what the changes are.  
2 I think these things happen and they have to be clarified.

3 MR. TROSTEN: We would be glad to provide the  
4 Intervenor with a list of the changes.

5 MR. ROISMAN: For purposes of our discussion,  
6 is it something that can be done fairly quickly?

7 MR. TROSTEN: Yes, very quickly.

8 MR. ROISMAN: Thank you, Mr. Chairman, that is  
9 fine.

10 CHAIRMAN JENSCH: All right, with that understanding  
11 and that supplying of these changes made, let us go to the  
12 Hudson River Fishermen's Association.

13 Any objections?

14 MR. MAC BETH: No objection.

15 CHAIRMAN JENSCH: Atomic Energy Council of the  
16 State of New York?

17 MR. SCINTO: No objection.

18 CHAIRMAN JENSCH: All right, it is received in  
19 evidence.

XXXXX 20 (The document referred to, heretofore marked  
21 Staff Exhibit Supplemental No. 1, for  
22 identification, was received in evidence.)

23 CHAIRMAN JENSCH: Will you proceed, Staff counsel?

24 MR. KARMAN: I have nothing further at this time,  
25 Mr. Chairman.

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CHAIRMAN JENSCH: Is there anything else that can be considered at this time?

It is the thought of the Board that we will take a few minutes recess to give the Reporter a break and then perhaps the Board has some few items it would like to consider with the parties.

We will recess at this time to resume at 3:40.

(Recess.)

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1 CHAIRMAN JENSCH: Please come to order.

2 The Board would like to address some matters to  
3 the parties. Dr. Briggs, will you proceed. Will you all have  
4 a seat, please, and I think it will assist in hearing if we  
5 terminate the conversations.

6 DR. BRIGGS: The Board has received some replies  
7 to questions we have had a chance to look at and study. I  
8 would like to make a few comments on some of the replies to  
9 possibly provide the Applicant and the Staff with some thoughts  
10 that would lead them to provide additional information at the  
11 time the hearing begins.

12 With reference to Question 1 in the answers by  
13 the Applicant, the question had to do with the effect of  
14 operation of Indian Point Unit No. 1 on the radiation in the  
15 environment around the plant.

16 The answer provided is helpful; however, I am not  
17 sure it quite answered the question. For instance, the Applicant  
18 had a program of environmental monitoring in effect before  
19 Indian Point 1 went into action. Presumably some information  
20 was gained from that and some background level was established  
21 on the basis of that monitoring.

22 The reply to the question didn't indicate what  
23 the background level was prior to the operation of Indian  
24 Point Unit No. 1. They didn't indicate what the constituents  
25 were in the background.

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In other words, what radioactive isotope made up the background and I sort of expected the answer to contain some information on that. Then it discussed the effect of the operation with the plant in 1969.

Again not indicating what radioactive isotopes made up the background, the calculation seemed to indicate that one couldn't measure the difference but there was some question about what the monitoring is for.

Presumably the monitoring is done to show either there is no difference between the measurements prior to the operation of the plant and the measurements during the operation of the plant or to show there is some difference or to show that the numbers are so vast that you can't distinguish a difference.

So, as I say, it might be worthwhile to provide some additional information on what these measurements have been and what they establish. That information is available in the periodic reports that have been published and is available in reports that have been published by the State of New York and others and the hope here was that a summary would be prepared that would give a good summary of the results to the Board and the general public, something they could understand.

I think this is not treated at all in the FSAR. There are one or two pages where there are some general

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1 statements made about the effects of operation on the  
2 background but no qualitative information that I could find.  
3 I continue to have some problems with the inspection proposed  
4 for the reactor, after it has begun to operate as I understand  
5 this is the first of the higher powered series of the  
6 Westinghouse reactors.

7 I suppose the pressure vessel for the reactor is  
8 one of the largest that has been made. When I say largest,  
9 I take into account diameter of wall thickness, one of the  
10 first large vessels that have been made. To some extent I  
11 would think that the fabrication of this vessel must have had  
12 some problems and there must have been some development that  
13 was required and the fabrication of the vessel itself must  
14 have been in a sense a development operation.

15 Since I have wondered from time to time whether  
16 this could have constituted a part of the research and develop-  
17 ment that has been done with the plant, that is, its operation  
18 and the safe operation of the vessel and the experience with  
19 the vessel which would contribute to the technology of  
20 pressurized water reactors and larger sizes.

21 In the development program, one would ordinarily  
22 think that more than ordinary precautions would be taken in  
23 the operation of the plant and with the inspection of the  
24 components of the plant and that maybe very special methods  
25 would be used in the inspections to provide assurance that

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1 this plant is a safe one and that plants following it could be  
2 expected to be safe, even more safe. However, the inspection  
3 program that was proposed for the reactor vessel in particular  
4 apparently was based on Section 11 of the ASME boiler codes  
5 which says it is possible to inspect the reactor vessel at  
6 the end of ten years of operation.

7 It appears to me this decision to inspect at the  
8 end of ten years of operation by the Boiler Code Committee  
9 wasn't based upon necessarily the safety requirements. It  
10 seemed to be based at least as much on convenience for the  
11 operator. It is indicated that methods aren't developed for  
12 doing these operations as yet and we make the inspection at  
13 the end of ten years and if methods haven't been developed,  
14 maybe the rules can be changed in that period of time.

15 I believe in the reply the Applicant said methods  
16 have been developed for doing some inspections. I think it  
17 is important that more information be provided on what will  
18 be done to assure there will be inspections at the end of a  
19 reasonable period on this reactor and to examine whether ten  
20 years is a reasonable period for the first inspection on the  
21 reactor vessel itself.

22 Now, with regard to the reactor vessel and related  
23 somewhat to inspection, in reading the information that came  
24 from the construction permit stage, one, I think, is impressed  
25 that at that time, at least, there is some concern about

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1 the possibility of a rupture of the reactor vessel.

2 The Applicant provided special concrete structure,  
3 I will call it, shielding around the reactor vessel to prevent  
4 missiles. The Staff safety analysis indicated and the ACRS  
5 letter indicated that certain provisions were being made in  
6 the design of the plant to take care of meltdown fuel and this  
7 could be expected in the event of a rupture in the reactor  
8 vessel.

9 In ACRS documents prior to that time a concern was  
10 expressed. Yet, as the plant comes up for an operating license,  
11 it is indicated that there is now no concern about the rupture  
12 of a reactor vessel, that this is not a design basis accident  
13 that needs to be considered and, in fact, there is no provision  
14 for handling the meltdown of the core should such an accident  
15 happen.

16 I think it is important to justify this change  
17 in outlook that has occurred between 1965 and 1966 when a  
18 construction permit was issued and the present stand.

19 In connection with the emergency core cooling  
20 system, as I read the Staff safety analysis and the ACRS  
21 letter for 1966, the emergency core cooling system as  
22 proposed at that time was inadequate. The flow from the  
23 system was going to have to be increased and increased to  
24 the extent that a meltdown of the core could not occur.

25 This at least is my reading of the reports at that

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1 time.

2 In addition to that the Applicant was going to  
3 provide and the papers seemed to indicate that it would be  
4 nice to provide for containment, at least, in the event this  
5 emergency core cooling system or one that was supposed to  
6 fail actually did fail and this was the reason for putting  
7 the crucible below the reactor vessel.

8 This was no longer considered necessary. In other  
9 words, no backup for the emergency core cooling system seems  
10 to be considered necessary. Though there may be very good  
11 reasons for this, I think it would be desirable to discuss at  
12 the hearing more about what work was done on the design of  
13 that core catcher, I will call it, because this is stated in  
14 reply to the extensive design work that was done.

15 Give additional information concerning the reasons  
16 for removing this device, even though it was provided only as  
17 a backup to a system that was not supposed to fail.

18 In connection with the emergency plans, there are  
19 procedures that are to be followed in the event of an  
20 emergency. These are procedures that have been provided by the  
21 Applicant and others provided by the State of New York. If  
22 the Applicant has analyzed an accident, one that would involve  
23 extensive threat of radioactivity such as the State of New York  
24 to be called in, we would like there to be some discussion  
25 of the accident and the time that is involved.

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1           Certainly the amounts of time required to notify  
2 people and take measurements. I have seen no description of  
3 a typical accident; I should call it an accident that is not  
4 typical, one that involves a considerable threat of radio-  
5 activity, and the time allowed for carrying out these operations  
6 according to the Staff's safety analysis; within two hours at  
7 the site boundary one could approach the 10 CFR Part 100 limits  
8 under certain conditions and 12 hours seems to be a fairly  
9 short time to carry out all of the emergency actions called  
10 for in the emergency plan.

11           We would like to have some discussion about the  
12 kind of accidents that have been analyzed and the amount of  
13 time considered to be available for carrying out these plans  
14 and how they compare with this two-hour business at the site  
15 boundary.

16           There was one other item that comes from the  
17 changes that have been made since the construction permit was  
18 issued. At that time sodium phisulfate, I believe, was the  
19 additive to be used in the iodine spray system. That additive  
20 has been changed. I found nothing to document the reasons  
21 for the change and I think that would be worthwhile for  
22 some discussion at the hearing.

23           There is a question concerning whether the releases  
24 are as low as practicable or whether they are a small percentage  
25 of the MPC value. I think at the hearing we will go into some

ln8 1 some extent to the provisions that have been made for control-  
2 ling the routine releases from the plant and into the question  
3 as to whether they are indeed as low as one should expect,  
4 what kinds of modifications might be required to reduce them  
5 further and whether there would be any real advantage to such  
6 reduction.

7 In other words, whether the reduction would be so  
8 significant as to be concerned. I don't believe I have any  
9 other points to consider.

10 Oh, there was one further question. In discussions  
11 of the emergency core cooling system, the Board will be much  
12 concerned about the experimental evidence that was developed  
13 for the respectiveness of the system; in other words, its  
14 reliability and the assurance that one gives that it is  
15 essentially failproof.

16 We also will be concerned about whether there  
17 has been experimental evidence and whether there have been  
18 calculations that would indicate whether there is a substantial  
19 question as to whether the emergency core cooling system will  
20 function as it was designed.

21 In other words, whether these reservoirs that  
22 provide the initial flooding of the core will function as  
23 they have been designed to function.

24 DR. GEYER: I would like to add just one point under  
25 the questions discussed by Dr. Briggs, that has to do with

ln9 \* 1 the plans in case of an emergency. Emergencies don't neces-  
2 sarily happen when the weather is fine and everybody is home  
3 listening to the telephone so that the question of backup and  
4 organizational changes that are required because people aren't  
5 available or communication isn't just what it is expected to  
6 be, might be discussed in some detail.

7 The plan looks like a good one and it is quite  
8 elaborate if everything works out as it is expected to in  
9 that plan. But if it doesn't work out, what then happens.

10 Thank you.

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1           CHAIRMAN JENSCH: Let me just add, I think it was  
2 the contemplation that if the Staff has any contribution to  
3 make respecting these several matters in which Dr. Briggs  
4 referred, the Board would be pleased to have its further  
5 responses and evaluation of any data that may be related to the  
6 questions under consideration.

7           I think the Board would also be interested in reference  
8 to the sodium hydroxide situation, if we could have some  
9 reports on what the experimental data indicated and have some  
10 appraisal of the matter from those who are familiar with that  
11 type of work.

12           I think I mentioned at a previous session that some-  
13 times we get two or three statements of hearsay on these things  
14 and in the absence of specifics it would probably be most  
15 helpful. In that connection, for instance, on the emergency  
16 core cooling or the loss of coolant accident, who are the  
17 persons carrying on the experimental work?

18           I had the impression, I am sure it wasn't intended,  
19 that perhaps the designer and manufacturer of a nuclear  
20 system, nuclear steam supply system, is carrying on the  
21 experimental work to see whether his own product is going to  
22 be satisfactory, and I wonder if there are some independent  
23 experimental organizations making analyses to which Dr. Briggs  
24 has referred now and in previous questions related to these  
25 several experimental programs.

1 I think evidence from independent analysis will be  
2 very helpful. As I say, I don't think it was intended that the  
3 evidence would be submitted that the designer and vendor of  
4 the product would be carrying on a safety analysis to show  
5 that his sales information is correct. I think it might be  
6 apparent that we have disagreed with the Applicant Company's  
7 statement this morning that all the research and development  
8 work considered in the construction permit stage has been  
9 completed satisfactorily.

10 One problem -- I don't know whether I mentioned it,  
11 before -- I hope I don't duplicate. But there have been two  
12 letters particularly from Advisory Committee on Reactor Safe-  
13 guards, one of which was October 12, 1966, a letter addressed to  
14 the Chairman of the Atomic Energy Commission and it consists of  
15 some four pages outlining specific areas in which the  
16 Advisory Committee on Reactor Safeguards indicated that further  
17 research in Government should be undertaken.

18 Now, maybe it has been undertaken. We would be  
19 pleased to have both the Applicant and the Staff discuss that  
20 letter with specifics on fulfillment of the R&D that probably  
21 has been undertaken since 1966. We talk about a possible  
22 functional failure of the emergency core cooling system and  
23 other aspects of the entire operations. This does not apply  
24 solely to Con Edison. It applies to all reactors.

25 So I think this proceeding might give the Staff,  
specially, and the Applicant, if it could get the data, an

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1 opportunity to more or less update these areas of concern so  
2 that the record will show and the Advisory Committee will have  
3 an opportunity to review the transcript as to how the programs  
4 have been carried out.

5 Is there any other matter that we might consider at  
6 this session?

7 MR. TROSTEN: Yes, Mr. Chairman, among the other  
8 things I assume we will wish to consider the matter of  
9 scheduling a continuous session of the hearings.

10 Before going into that matter, however, I would like  
11 to make a statement concerning Applicant's intentions with  
12 respect to fuel loading. We are conducting discussions with  
13 the parties to the proceeding, including the Regulatory Staff,  
14 and it is our intention to move in the near future time for  
15 an authorization in this Board for fuel loading and subsequent  
16 testing. The Notice of Hearing in this proceeding states that  
17 the Board may, upon motion from the Applicant during pendency  
18 of the proceeding, grant such a motion under certain situations.

19 We do intend shortly to move for such an authoriza-  
20 tion. At this point, also, in response to the Board's earlier  
21 inquiry concerning the status of the plant construction, I  
22 would like to ask Mr. William Cahill, Applicant's Vice-  
23 President, to respond.

24 CHAIRMAN JENSCH: Very well. Or he can submit a  
25 statement which will perhaps --

1 MR. TROSTEN: Mr. Chairman, do you plan to  
2 reconvene tomorrow morning?

3 CHAIRMAN JENSCH: Unless all parties decided that  
4 there were some matters we could take up, otherwise we thought  
5 we would sit right here until we exhausted the matter.

6 MR. TROSTEN: I am sorry. I thought you said earlier  
7 we would have to leave at a specific time.

8 CHAIRMAN JENSCH: Mr. Cahil, would you care to come  
9 up to the witness table here?

10 MR. CAHILL: Well, it is a short statement, sir,  
11 and there is no mike there.

12 CHAIRMAN JENSCH: All right.

13 MR. CAHILL: Regarding the question as to the  
14 status of completion of the plant, I would like to point out  
15 that the plant is very rapidly nearing completion and rather  
16 than list all of the things that are completed, it would be  
17 better and much briefer to state generally what isn't completed.

18 In terms of the most salient features, the major  
19 effort remaining in the complex -- physical complex of the plant,  
20 is to finish off some work on piping supports and restraints.

21 The systems themselves, the piping systems, are  
22 completed and tested in the functional tests. That was completed  
23 this winter.

24 The containment area test has also been completed.

25 Remaining in addition to these type of restraints

1 is some piping work on the containment spray system, some of  
2 the ventilating systems in the containment, and the other  
3 buildings; a small amount of work in connection with the  
4 tubing that is used for the internal moveable core monitoring  
5 system, and then, of course, painting and clean up.

6 It is items of this nature, then, of course, items  
7 which we call punchlist items which are minor modifications of  
8 defects, almost, in effect, maintenance items on the equipment  
9 that has been tested and found to require adjustments or  
10 repairs.

11 We therefore see the plant rapidly approaching  
12 completion and we are at the point where the next item in the  
13 sequence of the startup procedure could well occur, and in  
14 fact we feel that if we do not start on this that a delay  
15 in the operation of the plant would occur.

16 This next step is to start the fuel loading sequence.  
17 This involves, of course, cleaning up the containment and  
18 stopping the work directly involved or completing the work  
19 directly involved --

END #28

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1 CHAIRMAN JENSCH: Would you use your microphone,  
2 I am sure several people can't hear you.

3 MR. CAHILL: The work directly involved in the  
4 reactor pit area and we feel that could be completed as  
5 early as the beginning of next month. Say by the 9th of  
6 April at which point we would start taking the head off  
7 and remove the internals package which is inside the vessel  
8 now to complete the work preparatory to loading fuel. This  
9 involves some three weeks, bringing this to about again to  
10 April at which point we would be ready to load fuel.

11 Now, this of course is a plan, it is a schedule  
12 which is subject to delays by unforeseen events, but it is a  
13 realistic possibility and we feel that if at about the end  
14 of April if we did not have permission to load fuel we would  
15 face impediments to the overall schedule of completing the  
16 plant and getting it into operation.

17 Subsequent to fuel loading, assuming of course we  
18 need the license, but theoretically we could reach the point  
19 of initial criticality about the end of May and start on  
20 power escalations some time in June.

21 Now, this makes it possible for this plant to  
22 come into service during the critical summer coming up this  
23 year. So we are doing our best in the completion of the  
24 construction and testing to avoid any impediments to the  
25 possibility of having power this summer from Indian Point 2.

1           The first milestone which concerns permission from  
2 the AEC and this Board is of course the fuel loading step which  
3 at that time we propose no operation which involves criticality  
4 or the development or generation of any fission products.

5           CHAIRMAN JENSCH: Well, there are quite a few other  
6 impediments along the way, too, perhaps you heard a few of  
7 them today during the discussion about environment and research  
8 and development problems that we have and we can't dismiss  
9 them too readily.

10          MR. CAHILL: Yes, sir, I just thought you wanted  
11 to know and everybody would be interested in where we stand  
12 physically in completion of the plant and the startup  
13 program.

14          CHAIRMAN JENSCH: Do any parties desire to speak  
15 to this?

16          MR. ROISMAN: Mr. Chairman, I would appreciate that  
17 the Board take into account all of that discussion Mr. Cahill  
18 just gave, the power needs of the City of New York, the fact  
19 that they are under pressure, they hope to get core loading  
20 done and they are going to ask for fuel operating permits and  
21 the reason for doing that is related to power and you must  
22 consider in our motion that there is an issue in this  
23 proceeding, all we want is a chance to find out if what they  
24 are telling us is right or wrong and that would require  
25 answering a few questions we have.

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MR. TROSTEN: I would like to object to the stated reason of the statement made by Mr. Cahill. It was certainly not offered in that respect but in answer to a question by the Board.

End #29

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1 CHAIRMAN JENSCH: I think it is a question of  
2 whether several inferences cannot be drawn from the same  
3 evidence. The Board is interested with respect to the status  
4 of the plant. The reason for the indicated schedule of loading  
5 was something we hadn't inquired about, we just wanted to know  
6 how far along the plant was.

7 I don't think you can compartmentalize evidence to  
8 its use. Once it is presented it is available for all  
9 purposes. Is there any other matter that we can consider? You  
10 will file a written motion, I take it, in due course of time,  
11 as to which parties will have an opportunity to answer and,  
12 if necessary, if the Board believes it is advisable, we might  
13 reconvene for a session of discussion with reference to the  
14 motion when the answers are in.

15 MR. TROSTEN: Yes, Mr. Chairman, we will in very  
16 short order file a motion in this respect. I will also say  
17 we will also endeavor to file as soon as we can written  
18 answers to the questions raised by Dr. Briggs and Dr. Geyer  
19 and yourself as soon as we can.

20 CHAIRMAN JENSCH: Well, we don't want to push the  
21 Staff, we know the Staff has a heavy workload but can the  
22 Staff give us an indication as to when they might be able to  
23 submit answers on the Board's questions?

24 MR. KARMAN: We are hopeful of being able to submit  
25 answers to the questions which were asked by the Board at the

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1 last session hopefully within the next few days. Upon  
2 analyzing the questions which were asked today, as quickly as  
3 possible.

4 CHAIRMAN JENSCH: Let me just change the subject  
5 a bit. Referring to a statement Mr. Knotts made, the Board  
6 hasn't made any decision about certifying anything. But  
7 supposing it did, the Calvert Cliffs case, as I recall it,  
8 says something like this, "One, the Board will comply with  
9 all regulations of the Commission; two, if there is a serious  
10 challenge made to the regulation, evidence may be received in  
11 that regard and then that type of record, that portion of the  
12 record certified to the Commission for consideration."

13 Now, is this situation in the stage now that would  
14 even comply with that permission granted by the Commission?  
15 What record do we have separate arguments about Appendix D  
16 to certify, if the Board were to certify that question?  
17 Should we meet here in the morning and have some evidence of  
18 some kind if there is a challenge intended to be made to the  
19 regulations so that there would be a record to submit to the  
20 Commission and the parties would then have a chance to perhaps  
21 discuss whatever evidence was tendered by way of that  
22 challenge.

23 Intervenors' counsel, what are your suggestions?

24 MR. ROISMAN: If I understand it correctly,  
25 Mr. Chairman, from the standpoint of our legal challenge, if

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1 there is evidence to be introduced at this point, it would be  
2 on the basis of the Applicant introducing evidence to prove --  
3 I am not necessarily agreeing with the Board's approach to the  
4 problem of certifying to the Commission the question of  
5 whether this plant requires a transition period, but assuming  
6 that were a question that were to be certified, our position  
7 would be that the first thing would be necessary would be that  
8 the Applicant, since there is no evidence as yet to prove  
9 there is a need for a transition period, for the Applicant to  
10 make that point.

11           Otherwise we would rest our case on the basis that  
12 other than the lack of any evidence there is no proof this  
13 plant needed a transition period and the March 4th date is  
14 invalid as applies to this plant.

15           CHAIRMAN JENSCH: Of course, the Applicant would  
16 rely on the regulation that says an orderly transition is  
17 required. I would infer that the Intervenor making the  
18 challenge would have to present some evidence that there was  
19 no orderly transition needed.

20           The Applicant, as I understand the regulation,  
21 relies on the regulation that says in order to have an orderly  
end 220 transition we challenge that or not.

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23           MR. ROISMAN: Well, this goes back to the fact  
24 that when the question is asked is the regulation reasonable,  
25 you look to the basis of Appendix D. We discussed in our brief

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1 that you have, the ones that we covered, whether there was  
2 anything to deal with Appendix D or the explanation to the  
3 company which would justify the conclusion that an orderly  
4 transition period was necessary.

5 We can't find any evidence. It would become  
6 difficult for us to do it through the negative. If you want,  
7 we would attempt to bring in evidence from people who would  
8 testify, people with experience in hearings and so forth that  
9 a transition wouldn't have been necessary, that this hearing  
10 could have begun on December 17th as it did and we could have  
11 been discussing environmental questions all at the same time  
12 and it wouldn't have created any delay in the hearings as a  
13 result of that.

14 I am not saying insofar as that is concerned we  
15 are not prepared to produce any evidence on that tomorrow  
16 morning, but if the Board would like, we would attempt to  
17 bring in some other people who had experience in hearings  
18 before the AEC or hearings before other boards to testify about  
19 what transition is necessary or unnecessary when you talk  
20 about expanding the issues that can be considered in those  
21 hearings.

22 CHAIRMAN JENSCH: Well, in your opinion, is the  
23 present record adequate to certify the question as to whether  
24 a relaxation from the orderly transition can be made for this  
25 case as was done for the Vermont Yankee case?

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1 MR. ROISMAN: I am not prepared to answer that  
2 question put just that way. Today is the first time that has  
3 come up and I must confess I haven't focused on it. As I  
4 think about it, it seems to me it could be put in evidence  
5 from some people who would testify that transition isn't  
6 necessary.

7 I am not sure how probative that evidence would be  
8 and I don't think introducing it would take away from our  
9 basic position which is that in determining whether a regula-  
10 tion is reasonable, the first obligation is that the person ,  
11 who wrote the regulation has to come up with some evidence to  
12 prove it is reasonable.

13 10 CFR Part 20, there was all of that evidence  
14 and everybody knew that it existed. We discussed here today  
15 whether there is any such evidence that would justify the AEC's  
16 conclusion that a transition period is necessary and we would  
17 take the position, not at the exclusion of introducing evidence  
18 but at least that the burden on that issue rests with the AEC  
19 to justify the need for a transition period. It is not  
20 required by statute so they have to come up with some explana-  
21 tion for it.

22 CHAIRMAN JENSCH: Well, in the policy in which the  
23 Atomic Safety and Licensing Board operates, the Board must  
24 accept the validity of the Atomic Energy Commission regula-  
25 tions Appendix D and that is that there is a basis for orderly

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1 transition. You may dispute it but the regulation of that  
2 is in a forum of other than this proceeding and that may be  
3 the forum you have selected, the Court of Appeals of the  
4 District of Columbia.

5 But the language of Calvert Cliffs assumes the  
6 validity of the Commission regulations. If somebody decides  
7 to challenge the Commission has given permission for a procedure  
8 to permit the presentation of evidence by way of that challenge  
9 and then a certification of that record with that challenge  
10 to the Commission.

11 Now, if you are satisfied with the present state of  
12 the record for your challenge in that regard, the Board will  
13 be able to give consideration as to whether or not it should  
14 or should not certify the matter.

15 But I think the Calvert Cliffs decision places  
16 the burden on the challenger to the regulation.

17 MR. ROISMAN: I am not disputing that aspect, we  
18 are perhaps agreeing whether the presentation of argument is  
19 evidence. It is written on the challenge that had to be  
20 made on the basis of evidence and there is substantial evidence  
21 made to all parties which wasn't in the record to justify the  
22 position that the Commission has taken.

23 It would be our view, not that we wouldn't take  
24 the opportunity to adduce evidence here, but it would be our  
25 view that the unreasonableness of the regulation is evident

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1 from, if you will, logic and reliance upon case law and  
2 statutes and legislative history.

3 CHAIRMAN JENSCH: The fact is that is adequate from  
4 your position and the Board can give it consideration.

5 MR. ROISMAN: It is adequate and if the Board is  
6 interested in having additional information, I would like at  
7 least 24 hours to decide whether we would like to have people  
8 come in who have had some experience with hearings to testify  
9 in terms of the practice of a hearing it is not necessary to  
10 have -- that you wouldn't have needed a transition period  
11 generally.

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1 CHAIRMAN JENSCH: Let me just correct that  
2 statement. The Board isn't interested in any kind of  
3 evidence in this regard. The Calvert Cliffs decision by the  
4 Commission gives you the opportunity to challenge the regula-  
5 tion.

6 Now, that permission by the Commission, as I read  
7 it, assumes a presentation of evidence to support this  
8 challenge. If you do not desire to introduce evidence and  
9 desire to rely upon legal assertions you have made, the  
10 Board will give consideration to the matter as of that state  
11 in the record. But I think the problem rests with you as  
12 to how you intend to present the challenge.

13 MR. TROSTEN: Mr. Chairman, I have several comments  
14 I wish to make.

15 First, I would like to reiterate the point made  
16 in our memorandum in answer to the motion that we do not  
17 regard the Calvert Cliffs decision as authorizing a challenge  
18 to 10 CFR Appendix D, for the reasons stated in our memorandum.

19 Secondly, if the Board determines there is a  
20 question to be certified here, it is our view that the  
21 question is a legal question and hence there is no need to  
22 supplement the evidentiary record with regard to the questions  
23 to be certified.

24 The arguments are fully set forth in the Intervenor's  
25 brief and in the Applicant's brief and I presume in the Staff

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1 brief and hence I see no reason or no need for the record to  
2 be supplemented in order for a question to be certified to the  
3 Commission.

4 CHAIRMAN JENSCH: Very well. I think the deter-  
5 mination of the course of the challenge is upon the challenger  
6 and I think you should offer a proposed course which can be  
7 considered by all parties.

8 MR. ROISMAN: I wonder if it would be possible  
9 if I could be given a period of time, one or two days to  
10 respond to the Board and indicate whether we would like to  
11 introduce evidence on this or whether we would rather  
12 rest only on the evidence of the legal argument.

13 CHAIRMAN JENSCH: Very well, that permission is  
14 granted. Today is March 24th --

15 MR. ROISMAN: We would do it by the end of the  
16 week, Friday, Mr. Chairman, if that is all right.

17 CHAIRMAN JENSCH: Very well. March 26th, 5  
18 p.m. or before which is the time limit upon which we will have  
19 a response from the Intervenors to suggest the course of a  
20 challenge.

21 Is there any other matter to be considered at this  
22 time?

23 MR. TROSTEN: Yes, Mr. Chairman.

24 I think it would be appropriate to review briefly the  
25 status of the various party cases for scheduling continuous

1 hearings.

2 CHAIRMAN JENSCH: Very well.

3 MR. TROSTEN: If I may, I will take it upon myself  
4 subject to the Intervenor's counsel agreement to summarize the  
5 status.

6 First, with respect to the Environmental Defense  
7 Fund, I would like to make the statement, and I am sure Mr.  
8 Roisman will correct me if he thinks I should be corrected,  
9 Environmental Defense Fund has no questions to put to the  
10 Applicant and the Environmental Defense Fund's interest in  
11 this proceeding is related to the motion which is now before  
12 the Board.

13 In this connection I wish to point out that as noted  
14 in our answer to the Environmental Defense Fund motion, EDF  
15 does not intend to present a radiological health and safety  
16 case in the event that the Board's ruling on EDF's motion  
17 is not favorable to it.

18 I also wish to advise the Board that I was  
19 informed by counsel for EDF today that in the event the Board  
20 rules unfavorably to EDF on its motion concerning consideration  
21 of environmental issues, it does not wish to have a conference  
22 hearing scheduled for consideration of additional legal  
23 issues and does not intend to raise additional legal issues in  
24 the event of such an unfavorable ruling.

25 These points were referred to in paragraph 4 of the

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1 EDF motion.

2 With regard to the Citizens Committee for the  
3 Protection of the Environment, we have completed round one  
4 and we are -- of the informal questions and we are intending  
5 to supply answers to the Citizens Committee to round two of  
6 their informal questions by March 29th.

7 I will get to the matter of the continuous  
8 session of the hearings in ~~injustaa~~ moment.

9 With regard to the Hudson River Fishermen's  
10 Association, the Hudson River Fishermen's Association does  
11 not intend to present evidence in this proceeding on  
12 radiological health and safety matters. In this connection  
13 we are discussing with the Hudson River Fishermen's  
14 Association an understanding whereby the Applicant would  
15 furnish to the Fishermen's Association certain information  
16 with respect to the environmental monitoring program for the  
17 plant and we have every expectation that a satisfactory  
18 understanding will be reached, we believe we have an  
19 understanding in principle with them as to the nature of the  
20 information to be furnished.

21 That is all I have to report at this time, Mr.  
22 Chairman, as a prelude to the discussion of the continuous  
23 session of the hearing.

24 CHAIRMAN JENSCH: Proceed.

25 MR. TROSTEN: We have conducted discussions with

1 the counsel for the Citizens Committee for the Protection of  
2 the Environment and intend to proceed in the following  
3 fashion. I think it is fair to say that we have reached agree-  
4 ment on everything other than when the hearing is to commence.

5 First, it is our intention to develop in advance a  
6 list, in advance of the resumed hearing date, a list of the  
7 specific factual intentions upon which the Citizens Committee  
8 case rests and the time needed for the evidentiary  
9 presentation and to notify the Board in advance of the  
10 hearing concerning these matters. It is the intention of the  
11 Citizens Committee to introduce into evidence all or some of  
12 the answers to the second round questions.

13 They may also wish to introduce additional evidence.

14 The method of presentation of the evidentiary case will  
15 be for the full presentation of the Citizens Committee  
16 case issue by issue in accordance with the previously  
17 established factual contention by introduction into evidence  
18 of the answers to the second round questions which will be  
19 sworn to by Applicant's witnesses and by any other evidence  
20 that the Citizens Committee intends to introduce.

21 If possible the Applicant would introduce rebuttal  
22 testimony at the same time that the various issues would be  
23 considered by way of the Citizens Committee presentation.

24 In the event it does not prove feasible for the Applicant  
25 to introduce rebuttal testimony at that time we would request

1 a short recess, such as over a weekend, to prepare the necessary  
2 rebuttal testimony. If the Citizens Committee considered that  
3 it desired to present rebuttal testimony, a similarly short  
4 recess would be called.

5 It is our intention to present as much of this evidence  
6 in writing in advance in order to preserve hearing time in  
7 a hearing of this sort.

8 This, Mr. Chairman, brings me to the final point I wish  
9 to discuss and that is the date at which the continuous  
10 session of hearing should commence. As I mentioned it is  
11 our intention to submit to the Board or it is the intention  
12 of the Citizens Committee to submit to the Board this  
13 specific list of factual contentions which will develop in  
14 consultation with us. After that document is submitted  
15 to the Board, Applicant strongly recommends the continuous  
16 session of the hearing commence on April 22.

End 326

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1           CHAIRMAN JENSCH: Well, if you can accomplish all of  
2 the things you have outlined I am sure it will expedite the  
3 consideration of this proceeding. I think there has been among  
4 the parties here a more active working endeavor than perhaps  
5 has been concerned in other proceedings, and I am sure your  
6 efforts in this regard will shorten the hearing time.

7           Would the other parties like to speak to these several  
8 comments? I think and the Board has emphasized that it would  
9 be very helpful to get proposed evidence intended to be  
10 adduced in some written form so it can be studied perty  
11 carefully before the hearing session convenes. I think it  
12 will be helpful to get that by way of understanding.

13           Would the Staff like to take a throwing of the dart  
14 at the calendar for a date?

15           MR. KARMAN: We find some difficulty in being as  
16 optimistic as Mr. Trosten is in reaching the date of April 22  
17 for the hearing, mainly as a result of our analysis of some of  
18 the questions which have been submitted by Mr. Roisman, counsel  
19 for Citizens Committee for the Protection of the Environment  
20 on his second round of questions.

21           In the second round of his questions, Mr. Roisman  
22 has asked the Staff to answer eleven queries; he has asked  
23 the Applicant to answer 57. But one of the questions addressed  
24 to the Staff also indicated that he would like the Staff to  
25 answer the 57 questions that were asked of the Applicant.

1           Our analysis of the time required to answer those  
2 questions, in addition to the Board's questions and other matters  
3 would seem to preclude our having them completely answered  
4 by the 22nd of April.

5           It was hoped that we would be able to answer all of  
6 the Board questions and all the Applicants -- all the  
7 intervenor's questions by approximately the 26th of April,  
8 but I am sure that might require just a short time thereafter  
9 before the actual hearing commences.

10           CHAIRMAN JENSCH: Well, I offhand would think that the  
11 22nd of April would not be a convenient time, being into the  
12 week in any event. We have other hearings in progress. But  
13 does the intervenor's counsel desire to speak to that date?

14           MR. ROISMAN: Yes, Mr. Chairman, let me say that  
15 the discussions which I have had with Mr. Trosten and other  
16 counsel for the Applicant, at that time we did not have -- there  
17 was no reason to believe, I don't think either of us did,  
18 that the Board would propound, if you will, its own round two  
19 questions for which you require answers.

20           When we discussed it, the position I took then and  
21 the position I take now is this:

22           Once we have the answers from the Applicant and the  
23 Staff to our round two questions, we would then require three  
24 weeks' time to prepare what I like to believe will be as  
25

1 thorough a pre-trial memorandum as the Board has ever had.  
2 We intend to take fact by fact, every single fact that the  
3 Citizens Committee wishes to adduce in this case.

4 We will identify every bit of evidence now available  
5 in the form of answers to questions, sections of the FSAR,  
6 documents which we think will be uncontested as to the relevancy  
7 of these hearings, and indicate precisely what in those  
8 documents, answers to questions, and so forth, support the  
9 factual finding we wee.

10 We would then indicate what additional evidence we ,  
11 thought we might need in the form of cross-examination, and try  
12 to identify at least the area that cross-examination would  
13 occur or direct examination, and identify the area that we  
14 would be seeking direct examination with specific schedule  
15 for receipt of written direct examination in advance of the  
16 actual presentation of it.

17 To give the Board some idea of the detail in which  
18 we are speaking, as you will notice in Steps H and I, one of  
19 the questions we have been concerned with is the integrity  
20 of the fuel cladding in the case of design-basis accident.  
21 The kind of facts we would go after would be, for instance,

22 Fact: At a certain specific temperature a metal  
23 water reaction occurs with regard to fuel cladding of a  
24 zircalloy construction of the type used in this plant.

25 Fact: That temperature will be reached in

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1 X-percentage of the fuel rods in this plant under the following  
2 accident condition, and then the specific facts upon which we  
3 will rely.

4 Fact: There is an insufficient amount of evidence  
5 in the record now submitted by the Applicant to justify the  
6 conclusion that the temperature of a particular fuel rod will  
7 never exceed a certain specified temperature, and an identifi-  
8 cation of the various evidence which we think shows we will  
9 need more evidence if we are going to know that conclusion  
10 is correct.

11 I think that is fairly detailed and from it much  
12 of our evidence will be exactly that. We will not move on  
13 to cross-examination but if Applicant puts on more direct  
14 testimony we have the right to cross-examine after that  
15 testimony. Some of it I think we will want cross-examination,  
16 and perhaps a small amount we will want to put on our own  
17 direct testimony.

18 But to do that and do it properly, we need all the  
19 answers to the questions we have asked. I might say we have  
20 taken the liberty of treating the Board as sort of asking  
21 questions we would have asked. It is in this sense that I  
22 have explained to the Applicant's counsel that differs some-  
23 what -- many of the questions asked this afternoon relate to  
24 issues we are concerned with. We would like to see the answers  
25 to those questions just as we have seen the answers to the Board's

1 first round questions, before we indicate some of that evidence  
2 also proves our point as we think it might.

3 But we don't believe a period of three weeks in order  
4 to put that kind of document together, in effect if you will  
5 our FSAR -- is an unreasonable period of time. We would like  
6 the Board to have a chance to look at it and we would suggest  
7 that the full hearing begin one week thereafter or a shorter  
8 time if the Board felt it didn't need any additional time in  
9 order to look at that "Intervenor's FSAR."

10 But any suggestion, even assumming under the  
11 optimum conditions under which the Applicants discussed the  
12 proposals, which was their answers would be on March 29th,  
13 the Staff's answers on April 25th, April 22nd, or anytime  
14 in April would be completely unreasonable.

15 We would be forced to end up with an abbreviated  
16 version of this pre-trial memo which would only extend our  
17 time during a hearing. It would force us to call witnesses  
18 to testify on issues to give us sufficient time to analyze  
19 the data we already have.

20 We might even be able to conclude that the witness  
21 is unnecessary for cross-examination or direct testimony. I  
22 can't discuss how long these things can usually take. But it  
23 is not my intention to expend a great deal of effort on the  
24 obtaining of oral testimony on matters of a technical nature  
25 with which we are dealing.

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We want the Board to see in writing and to study the point that we have to make. We are not persuaded that we are going to get any witness from the Applicant or the Staff to break down in hearing on the witness stand and confess error of some computation. We think we can show that by laying the written testimony alongside the objective, so we hope that the Board and whatever it does on the question now, I think the Staff response indicates that it isn't now realistic to talk about the day.

We would say our position would be three weeks after the answers to our round two questions, and the Board's final round questions are obtained. We will be submitting this document, the "Intervenor's FSAR." We will be prepared to go to trial on these matters later.

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1                   CHAIRMAN JENSCH: I think in some cases, in subjects  
2 as technical as this, there are too many documents involved  
3 that need to be cited or considered in connection with the  
4 matters and I think oral testimony alone is a wholly  
5 independent way to present this type of case. I think  
6 preparation by the parties, I think it has been demonstrated  
7 here and in other proceedings, I don't think we have had  
8 parties that approached it from the point of view of  
9 securing documentary material before the hearing is delayed  
10 in the proceeding.

11                   I think one proceeding is of an evolutionary  
12 process of what will be available. I think the Board supports  
13 the idea of not convening a hearing until all possible  
14 documentary material has been examined.

15                   So it is going to take time to try to ask the  
16 witness if he recalls the report made by Mr. Jones three  
17 years ago on some Tuesday, it is better that the document  
18 be cited and made available to the witness before he even takes  
19 the stand.

20                   MR. TROSTEN: Mr. Chairman, I would first like  
21 to express my extreme disappointment at the statement by  
22 counsel for the AEC Regulatory Staff as to the time in which  
23 the answers to these questions put to the Regulatory Staff  
24 by the Citizens Committee for the Protection of the Environment  
25 will be available. These requests were furnished to the

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1 Applicant and the Regulatory Staff on March 9th. Applicant  
2 will furnish the --

3 CHAIRMAN JENSCH: Excuse me, I think we will have to  
4 ask for quiet in the room or absence therefrom. I think if  
5 we are responsible to access to other areas of the auditorium  
6 which we are using, we will have to contact the security force.

7 MR. TROSTEN: These questions were furnished to  
8 the Regulatory Staff on March 9th. Applicant intends to have  
9 the answers in the hands of the Committee on March 29th and would  
10 have had the answers in the hands of the Committee sooner than  
11 that if it had not been for the pendency of this hearing.

12 For the Staff to take until April 26th is a matter  
13 of concern and extreme disappointment to us because this would  
14 only have the effect of delaying this particular hearing.

15 Apart from the timing of the Staff's response,  
16 though, I must take exception to the position taken by  
17 counsel for the Citizens Committee that they must necessarily  
18 see the answers to the Staff's questions before they are in a  
19 position to go to trial and I also take exception to the  
20 position expressed today that the Citizens Committee wishes  
21 to see the answers to the Board's questions.

22 This could lead to a never-ending process in view  
23 of the fact that the Board may have additional questions which  
24 it may propound to us. This was not the general understanding  
25 that Applicant had with respect to the exchange of information

ln3 1 and the manner of proceeding which was expressed in the  
2 January 19th hearing. We had no objection, Mr. Chairman, for  
3 the Citizens Committee to see the answers to the Staff's  
4 questions prior to going to trial but this was on the assumption  
5 that the Staff's was going to be available on a time schedule  
6 closely consistent with ours.

7 For the Citizens Committee to take the position  
8 that they wish to have a period of three weeks after receipt  
9 of the Staff's answer and also take into account the Board's  
10 questions, I would regard that, sir, as not being acceptable,  
11 or appropriate.

12 As I say it is our position that the date of  
13 April 22nd is conceptually consistent with the date discussed  
14 at the January 19th hearing which was April 5th or thereabouts  
15 and is consistent with the general procedure that we have  
16 worked out with counsel for the Citizens Committee for the  
17 conduct of this proceeding.

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1 MR. KARMAN: Mr. Chairman, I would like to state at  
2 this time that the Atomic Energy Commission Regulator Staff can-  
3 not be held responsible for the speed and the manner in which  
4 questions are answered by the Applicant in this case. However,  
5 we feel a very strong responsibility to the public and to the  
6 Board and to all the parties in this hearing to make a very  
7 thorough and searching review of the questions which have been  
8 given to us and to guarantee that the answers that are submitted  
9 by the Staff are the best answers that can be given and the  
10 most complete answers.

11 And we feel that, consistently speaking, it will take  
12 until April 26 for us to respond adequately to the 68 questions  
13 which have been given to us.

14 CHAIRMAN JENSCH: The Board doesn't want anything  
15 from the Staff except what reflects their final consideration of  
16 these matters. As you know the Boards know nothing about what  
17 the Staff does or how the schedules work, but just from  
18 observation of the public record there was a proceeding going  
19 that has been pending for some time, and there was a documentary  
20 matter under consideration in that case for something like  
21 four months.

22 So I know the Staff has problems to resolve before  
23 they can formulate positions. I think, in looking at the  
24 Public Document Room and the number of requests pending,  
25 for the Staff to hurry up on everything, it leaves them with

Tab 2

1 a pretty-crowded schedule.

2 MR. TROSTEN: Mr. Chairman, I would like to make the  
3 point clear that the Applicant is not in the slightest way  
4 suggesting that the Staff review of a safety question should  
5 be expedited to the point where a thorough review is not  
6 conducted.

7 That was not my point at all.

8 I was suggesting that necessary additional effort  
9 be expended into responding to these questions so that a  
10 more expeditious answer should be given to the Citizens Committee

11 CHAIRMAN JENSCH: All right, the Board concluded that  
12 the time for commencing the evidentiary hearing will be con-  
13 sidered later. The Board will receive copies of all answers  
14 submitted by the parties. We will be pleased to receive  
15 suggestions and comments by mail from the parties as to the  
16 evidentiary hearing date.

17 At this time the Board does not feel it is able to  
18 set a specific date for the hearing. Is there any other  
19 matter to be considered? If not this conference and hearing  
20 proceeding is concluded.

21 Thank you.

22 (Whereupon, at 5:00 p.m., 24 March 1971, hearing  
23 in the above-entitled matter was adjourned.)

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Regulatory Bucket File

RETURN TO DEPARTMENT OF CENTRAL FILES  
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