

NUCLEAR REGULATORY COMMISSION

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COMMISSION MEETING

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In the Matter of: PUBLIC MEETING  
DISCUSSION ON INDIAN POINT

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

PUBLIC MEETING  
DISCUSSION ON INDIAN POINT

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Nuclear Regulatory Commission  
Room 1130  
1717 H Street, N. W.  
Washington, D. C.

Friday, July 25, 1980

The Commission met, pursuant to notice, at 2:35 p. m.

BEFORE:

- JOHN F. AHEARNE, Chairman of the Commission
- VICTOR GILINSKY, Commissioner
- PETER A. BRADFORD, Commissioner
- JOSEPH M. HENDRIE, Commissioner

NRC STAFF PRESENT:

- LEONARD BICKWIT, General Counsel
- M. MALSCH
- A. KENNEKE

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## P R O C E E D I N G S

1  
2 CHAIRMAN AHEARNE: This afternoon, the Commission  
3 meets to continue its discussions on the matter of the  
4 Indian Point reactors. Some time ago, we did reach a  
5 Commission decision to allow interim operation. We are now  
6 in the process of trying to come to grips with what specific  
7 set of directions we should give to the licensing board that  
8 we also had previously agreed would be set up.

9 At the last meeting we had agreed to reconvene  
10 today to address specifically the questions that had been  
11 given in the Commission's order that had gone out on May 30,  
12 and in particular to address any changes or modifications  
13 that any of the Commissioners might suggest, and we also  
14 were to have thought through whether we could establish a  
15 set of criteria that the board might use for decision  
16 criteria, or that we might use, and thereby instruct the  
17 board to work off of that basis.

18 The memos that I received on July 22, Commissioner  
19 Hendrie distributed some comments addressing that issue, and  
20 a few minutes ago Mr. Bradford distributed a set. General  
21 counsel, do you have any other information, or have you  
22 thought of any additional modifications, or do you have any  
23 more thoughts on the decision criteria?

24 MR. BICKWIT: No, I have received no other  
25 information. As far as decision criteria are concerned, I



1 think what was put forward by our office at the last meeting  
2 plus what was -- has been distributed constitute the various  
3 choices available to the Commission

4           The only other thing I would say is that I think  
5 the logical progression ought to be to deal with the  
6 criteria before you deal with the question, since the  
7 criteria -- if you proceed logically, it will shape the  
8 questions. So, I would make that recommendation, even  
9 though it may be easier to deal with the questions, and we  
10 all have thoughts on those, whereas the criteria -- shaping  
11 the criteria is a harder task. That is the order I think  
12 you ought to proceed in.

13           CHAIRMAN AHEARNE: I guess what I would first ask,  
14 since I view this more or less as a discussion meeting, I  
15 will ask each of the other Commissioners if they have any  
16 general or specific comments. Vic?

17           COMMISSIONER GILINSKY: I don't have anything to  
18 say at this point.

19           CHAIRMAN AHEARNE: Joe, do you want to address  
20 your suggestions?

21           COMMISSIONER HENDRIE: Yes, I would like to.

22           First, however, I would like, in the realm of  
23 related matters, to ask the general counsel, we have  
24 received recently, this morning, in my office, a motion from  
25 the licensees involved at Indian Point for -- asking for

1 reconsideration of a portion of our May 30 order that  
2 directs an adjudicatory hearing on the Indian Point units,  
3 and raises various arguments as to why they think that  
4 proceeding, if there is to be one, ought to follow a generic  
5 proceeding to establish general requirements of whatever  
6 kind on high population density sites.

7           Now, we have all been down to a Congressional  
8 hearing this morning, and I gather by the blank looks at  
9 your end of the table --

10           (General laughter.)

11           COMMISSIONER HENDRIE: -- that for a change I am  
12 two minutes ahead of you on this subject, and the nature of  
13 the questions that I had about this thing had to do with, I  
14 guess I will say litigation risk, and by that, I am not sure  
15 all of the things I mean -- you know, I picked up these  
16 terms of art from another field and use them probably  
17 indiscriminately, but in particular, we ought to have not  
18 necessarily -- I don't think we need to have it here  
19 particularly, because this discussion can go on, I think,  
20 reasonably anyway, some judgment as to whether -- what the  
21 merits of the motion for reconsideration are, and if we  
22 reject it, I guess.

23           Does that provide opportunity for the licensees to  
24 ask for review, judicial review, or do they have to sit out  
25 the end -- to the end of the whole adjudicatory proceeding?

1           That is, I am curious to know, A, is there -- what  
2 opportunity they have in your judgment for judicial review  
3 of what amounts to the Commission's decision -- what might  
4 be the Commission's decision to go ahead with the  
5 adjudication, and then, of course, we are always interested  
6 in your assessment of the likely outcome of those kinds of  
7 reviews.

8           MR. BICKWIT: I would prefer to read the motion.

9           COMMISSIONER HENDRIE: I would think so.

10          MR. BICKWIT: I would be happy to get back to you  
11 as soon as I can do that.

12          COMMISSIONER HENDRIE: I think it is a reasonable  
13 thing to deal with the next time the Commission is able to  
14 gather on Indian Point. In the meantime, I do not see that  
15 we are or ought to be precluded from going ahead and  
16 exchanging thoughts on criteria and so on.

17          Okay. With regard to criteria, it seems to me  
18 that we come to the Indian Point matter, because it is a  
19 high population density site, that the proposition before us  
20 is whether the risks associated with the IP units are out of  
21 line with the range of risks that are there at the run of  
22 operating sites.

23          It seems to me, then, that the primary decision  
24 criteria ought simply to be, and I would put it in terms of  
25 individual risk, whether the risks to an individual who

1 lives in the IP -- Indian Point vicinity are substantially  
2 greater than the range of risk to individuals around other  
3 sites, taking into account, obviously, the Indian Point  
4 designs, proposed fixes, the emergency planning measures  
5 presented and planned for the high population.

6 Now, we talked the last time, and Vic suggested --  
7 I don't think he was against an individual risk criterion,  
8 but suggested that there ought to be also some kind of  
9 societal impact criteria.

10 One way to phrase it, I guess, would be in terms  
11 of the population radiation exposure, and my view on that  
12 is, while if I were writing the proposition all by myself, I  
13 guess I would stick to individual risk, nevertheless, the  
14 societal impact point is not an unreasonable one at all. If  
15 we included it, my inclination would be to make it a  
16 secondary criterion, since I think the individual risk  
17 proposition is rather more in keeping with just the general  
18 tradition of American practice.

19 And then there are some details about how you  
20 would frame that societal risk. As I said last time, I have  
21 an aversion to these integrations which go out over great  
22 distances, and then result in adding up very small exposures  
23 to very large numbers of people.

24 So, I would be inclined at first blush, at any  
25 rate, to propose some sort of cutoff on that integration,



1 but that would be a matter I would think that one would be  
2 interested in hearing from staff who have thought about it a  
3 while as we went down the line and get a better sense of  
4 what the ramifications of the cutoff on the integration  
5 might be.

6 CHAIRMAN AHEARNE: What, Joe, do you see as being  
7 the way you would get at this? I gather what you are saying  
8 is that you do not basically disagree with having a double  
9 set of criteria, one on individual risk and one on societal  
10 risk.

11 COMMISSIONER HENDRIE: I don't basically disagree,  
12 because there are perfectly good and respectable arguments  
13 for the societal one, and I think the individual risk  
14 criterion is clearly -- you would not care to go with just  
15 the societal one and say we don't care about the  
16 individuals. It is just whether the society as a whole --

17 CHAIRMAN AHEARNE: How would you get to where we  
18 would reach a decision on what those criterion are?

19 COMMISSIONER HENDRIE: As I said in my note, I  
20 thought I could rephrase the six questions in the May 30  
21 order in much better shape, and the more I tried that, the  
22 less satisfied I was with the results, and the more  
23 impressed I was with the collective wisdom we managed to  
24 manifest in the May 30th order, and I would keep those basic  
25 six questions.

1           There are a couple of places where I think some  
2 adjustment would be appropriate, and also if we are able to  
3 agree on the general direction of some criteria to be  
4 included, then probably some further elaboration of  
5 Questions 4 and 5, particularly to give guidance on the sort  
6 of measures to develop the societal impact data would be  
7 appropriate.

8           CHAIRMAN AHEARNE: Yes. I recognize that is where  
9 your memo came out. How would you go about developing the  
10 individual and societal criteria, or would you not need to --

11           COMMISSIONER HENDRIE: I would not attempt to put  
12 numbers in them, or -- for the individual risk one, I think  
13 all that is needed is to say that the primary decision  
14 criterion will be rather the risk to an individual in Indian  
15 Point vicinity is substantially greater than the range of  
16 risk to individuals who live around other sites, and I would  
17 not see a need to go beyond that.

18           The questions are already phrased in a way to  
19 develop the sort of information that would allow you to make  
20 that judgment, and I would phrase the societal one in just  
21 the same way, but I think --

22           CHAIRMAN AHEARNE: Whether the societal risk is  
23 any greater.

24           COMMISSIONER HENDRIE: I think there one has to  
25 think, and we would have to develop some more information

1 about whether -- about the integration question. Do you  
2 want to integrate sort of all the way around the globe, or  
3 would you want to cut it off so that the doses were more  
4 meaningful on a site specific basis and then --

5 CHAIRMAN AHEARNE: In other words --

6 COMMISSIONER HENDRIE: -- I would not feel the  
7 need to write the criterion out in great and excruciating  
8 detail, because I think --

9 CHAIRMAN AHEARNE: A qualitative description of  
10 the integration and cutoff -- you might not need to do that,  
11 once you do it with comparison to other sites.

12 COMMISSIONER HENDRIE: I think that is right. I  
13 would like to hear from the staff -- some best judgment from  
14 people who have recently done this kind of calculation. How  
15 much the tail effects are. One of the questions I have, if  
16 you carry the integration out to arbitrarily low doses,  
17 carry the integration over a distance around the globe, it  
18 seems to me there is a good possibility that sites become  
19 indistinguishable, and that you lose the meaningfulness of  
20 the societal impact.

21 I think -- you know -- but I do not know that to  
22 be a fact, and that is what I would like to hear before one  
23 decided on that what some of the experts think.

24 MR. KENNEKE: The draft addressed that a little  
25 bit.

1           CHAIRMAN AHEARNE: Your basic point is, it is a  
2 comparison rather than an absolute.

3           COMMISSIONER HENDRIE: I think at this stage it  
4 has to be a comparison. The Commission has enunciated no  
5 absolute standard. The Congress has enunciated no absolute  
6 standard we have set for ourselves as one of the tasks  
7 resulting from our re-examination, the things after Three  
8 Mile Island, trying to enunciate a standard, and I think to  
9 try to incorporate that very difficult sort of proposition  
10 into this adjudication is just beyond the reasonable scope  
11 of the adjudication, and so I would make it on a relative  
12 basis, and so what that means is that ultimately, with the  
13 hearing record before us, the board summaries and  
14 recommendations, we would have to try to decide what we mean  
15 by risk either to individuals or a societal risk,  
16 substantially greater than the run of corresponding risks at  
17 other plants.

18           CHAIRMAN AHEARNE: Peter?

19           COMMISSIONER GILINSKY: If I could make a comment,  
20 Joe, if you look at the environmental reports and look at  
21 the Man Rem calculations out to 50 miles, most of them  
22 converge to that distance, like Calvert Cliffs. You pass  
23 Washington. The number is still increasing, but I think if  
24 you go beyond that, they do decrease. You do not get into  
25 the problems --



1           COMMISSIONER HENDRIE: You do not think the tail  
2 dominates that?

3           COMMISSIONER GILINSKY: I don't think so.

4           COMMISSIONER HENDRIE: That could very well be the  
5 case. The dose is dropping --

6           MR. KENNEKE: Page 6 of the draft addresses that.

7           COMMISSIONER HENDRIE: Page 6 of what draft?

8           MR. KENNEKE: Of the order, the bottom of Page 6,  
9 the top of Page 7, talking about latent cancers dominated by  
10 the population within a 200-mile radius of the plant.  
11 Because of this, the individual site risk curves for latent  
12 cancers reflect the character of the region. The latent  
13 cancer risk for these sites and probably all other sites is  
14 approximately the same.

15           COMMISSIONER HENDRIE: That does not exactly  
16 correspond to Vic's remark.

17           COMMISSIONER GILINSKY: I was talking about normal  
18 releases.

19           COMMISSIONER HENDRIE: And primarily whole body  
20 doses, I would think.

21           COMMISSIONER GILINSKY: I was not talking about  
22 routine releases.

23           CHAIRMAN AHEARNE: Peter?

24           COMMISSIONER BRADFORD: On which type of risk we  
25 are interested in, I think I come out not too differently

1 from Joe, but that depends on my having understood him  
2 correctly. I think both standards are applicable. I think  
3 that if you ask yourself whether, for example, you had a  
4 core melt accident and significant fission products were  
5 released and everyone around every site could be assured of  
6 being successfully moved away from it, might there still not  
7 be societal consequences in terms of areas left  
8 uninhabitable.

9           There might easily be some areas that that would  
10 mean an awful lot more to the country than others, so I  
11 think there is a societal risk component that goes out  
12 beyond just the numbers of people exposed in the first  
13 rounds that you might get by adding up or multiplying the  
14 exposure times to the number of people.

15           So, I do think there is a legitimate question on  
16 societal risk to be asked. I have chopped away at it a  
17 little bit in my memo that I sent around rather late in the  
18 game.

19           CHAIRMAN AHEARNE: I guess without any  
20 embarrassment I can say I really have not had a chance to  
21 read the memo.

22           COMMISSIONER BRADFORD: No one should be  
23 embarrassed to say that, including me.

24           (General laughter.)

25           CHAIRMAN AHEARNE: So -- but are you saying that

1 you would not disagree with Joe's approach of a qualitative  
2 standard which is by comparison to other sites?

3           COMMISSIONER BRADFORD: That is certainly true  
4 with regard to individual risk.

5           CHAIRMAN AHEARNE: And if you see the asterisk  
6 caveat on the potential property issued --

7           COMMISSIONER BRADFORD: It is also true with  
8 respect to societal risk. The comparison to other sites  
9 gives you at least this much comfort. If it turns out that  
10 Indian Point is no worse than other sites on either societal  
11 or individual risk, then it seems to me that in most  
12 respects the proceeding is decided, putting aside the  
13 question of compliance with the regulation and other points  
14 outside of the risk calculation that would get brought up.  
15 It does enclose it at the other end, that is, if it is  
16 somewhat more risky, you have not therefore decided  
17 automatically that continued operation is out of the  
18 question. It may help you make some decisions about  
19 specific technical fixes.

20           COMMISSIONER HENDRIE: It is clear -- I think it  
21 is clear enough, at least it is clear enough to me that  
22 there is a range of risks from the operating plants, and  
23 that means some facility will be at the top end of the  
24 range, and I am interested in knowing whether Indian Point  
25 is up here and the range is down here, or whether Indian

1 Point is down here or like that or maybe just the top one,  
2 and you know, some sense of what that difference is would  
3 then be what I would use in forming a judgment about whether  
4 the risk was unacceptable or not.

5           Now, if we decide that it is within the band of  
6 risks of other plants, then it simply gets thrown into the  
7 basket of all other plants, and at some time, as we try to  
8 formulate what we think is a -- you know, is the best  
9 enunciation we can give of the safety goal, what adequate  
10 protection under the statute means, at least in principle,  
11 you know, it is possible for us to decide that the whole set  
12 of operation plants needs improvement by some factor, and  
13 this one along with the others would have to improve.

14           CHAIRMAN AHEARNE: Vic, you were sort of the  
15 principal initiator of this concept of the decision  
16 criteria, so now Joe has proposed a concept which Peter, at  
17 least, is tentatively moving towards.

18           COMMISSIONER BRADFORD: I think we would both  
19 agree that there is a limit to it. Even if you knew that  
20 Indian Point was four times riskier than other sites, we are  
21 not sure what that means. There still has to be some  
22 absolute concept of how much is too much.

23           CHAIRMAN AHEARNE: How would you propose to get  
24 that

25           COMMISSIONER BRADFORD: Well, that is to me the



1 thing I have not been able to -- I have not been able to  
2 answer the question. What specific showing would it take  
3 for me to decide that the plant had to be shut down? It  
4 goes something like -- you know, for one thing you have to  
5 state it partially in terms of ability to fix, and so it is  
6 really what unfixable maximum is too much, and I have not  
7 got a neat formula in terms of blatant cancers, immediate  
8 deaths, and property damage for you to consider as being the  
9 absolute cutoff.

10 CHAIRMAN AHEARNE: Do you believe that such would  
11 be necessary before the board begins?

12 COMMISSIONER BRADFORD: I would rather have it  
13 before the board begins, but I don't think it is absolutely  
14 necessary. If we can propound clearly the questions we want  
15 the board to take evidence on and the areas that we want  
16 tentative findings in, then it is not necessary, because we  
17 are not asking the board to develop the standard itself, but  
18 it is necessary for us to be specific in the duty that we do  
19 assign to the board.

20 If we were to assign them the ultimate decision in  
21 the case, then it would be necessary.

22 CHAIRMAN AHEARNE: Do you disagree with that  
23 direction?

24 COMMISSIONER GILINSKY: No, I think this is a  
25 useful direction, and I think that -- I do think that we

1 need to give the board some guidance on what our concerns  
2 are and what might cause us to go one way or the other  
3 before this proceeding gets going.

4 I don't think these are going to be numerical, or  
5 they may be as general as Joe has proposed, saying we might  
6 act one way or the other if the individual or collective  
7 risks were significantly greater in this case than the  
8 typical case.

9 So, I do think we are heading in the right  
10 direction there. I don't have a specific proposal, but I  
11 think the whole proceeding will be a very much better one if  
12 we have made clear what our concerns are and why we are  
13 having this proceeding, and what even if only qualitative  
14 criteria we have in mind.

15 CHAIRMAN AHEARNE: I have no difficulty with Joe's  
16 qualitative decision criteria proposed -- the comparison --  
17 as I said last time. I don't see how we are going to get  
18 the specific set of criteria, and I really am concerned that  
19 if we try to get numeric values, for example, in order to  
20 generate those in any way that I think would be a reasonable  
21 approach, it would significantly postpone getting on with  
22 the hearing. In fact, the more I thought about it, the more  
23 I began to conclude that if we really had wanted to develop  
24 any kind of numerical criteria, it is not unlike the generic  
25 high population density rulemaking.

1           COMMISSIONER GILINSKY: It is not clear that that  
2 is even feasible. I mean, it does also suggest a degree of  
3 precision in all this risk assessment, which I think is not  
4 there.

5           CHAIRMAN AHEARNE: I am glad to hear you say that.

6           COMMISSIONER HENDRIE: I think that is right.

7           CHAIRMAN AHEARNE: That is three of us.

8           COMMISSIONER BRADFORD: I was not disagreeing.

9           COMMISSIONER GILINSKY: When we talk about the  
10 risk being greater or less than or significantly greater  
11 than the risk at a typical plant, we are talking about  
12 ranges, particularly when one is talking about the product  
13 of large consequences, very small probabilities. There,  
14 those numbers are very soft.

15          CHAIRMAN AHEARNE: Right.

16          COMMISSIONER GILINSKY: And for that reason, I  
17 wonder whether -- well, I think one wants to phrase even the  
18 criteria such as Joe laid out, the risk being greater than  
19 or significantly greater than -- phrase those pretty  
20 carefully, in that these risks will be really ranges of  
21 numbers. They are not going to be precise numbers.

22          CHAIRMAN AHEARNE: They won't be believable if  
23 they are.

24          COMMISSIONER GILINSKY: And --

25          CHAIRMAN AHEARNE: Well, let's -- I guess the

1 assumption I will make is that we seem to be going in the  
2 direction of establishing that qualitative description as a  
3 set of criteria. I imagine they would still have to get  
4 something in writing.

5           COMMISSIONER GILINSKY: I also think that Peter  
6 raised an important point in speaking not only of people  
7 getting irradiated, but property in the areas getting  
8 irradiated. From what we heard from Bob Bernero, the  
9 estimates for the economic damage have been understated in  
10 most of the studies that have been done. And the ability to  
11 carry out clean-up operations seems to assume it to be  
12 easier than in fact it would be, and that is something I  
13 think one wants to take into account.

14           When we talk about societal risks, I think we had  
15 better talk about economic risks, too.

16           CHAIRMAN AHEARNE: I guess we really ought to move  
17 to at least some discussion of the questions, because I  
18 think I will at least ask Commissioner Hendrie to take a  
19 crack at putting decision criteria down, and I would guess  
20 there will be a lot of additional comments from us on how to  
21 get to that.

22           But I do not see any fundamental disagreement with  
23 that.

24           COMMISSIONER BRADFORD: You said two criteria,  
25 John. I am sorry I had not drawn two criteria out of what



1 Joe had said.

2 CHAIRMAN AHEARNE: The individual and the societal.

3 COMMISSIONER BRADFORD: Okay.

4 CHAIRMAN AHEARNE: And as you and Victor are  
5 leaning toward the societal, I guess mine include the  
6 property aspect also.

7 COMMISSIONER HENDRIE: When I talk about -- I  
8 guess when I talk about individual risk, why, it is strictly  
9 a health risk. It runs through, you know, these estimates  
10 derive, starting with WASH 1400 types have been separated  
11 out into early fatalities, early injuries, and latent cancer  
12 likelihoods, and I guess those are as good a set of  
13 categories as anything else.

14 So, when I talk about individual risks, I have in  
15 mind that sort of categorization under the term "individual  
16 risk." Societal risk, property damage has been included.  
17 When I talk about societal risk, I guess I am willing to  
18 look at property damage, although it would be an interesting  
19 -- let me pose a hypothetical and not too likely case to try  
20 the counsel.

21 I am encouraged, because we deal in unlikely  
22 things here. In fact, we used to have a convention.  
23 Whenever we talked about loss of coolant accidents, why,  
24 there was a boilerplate phrase, "unlikely hypothetical."  
25 You know, you automatically incurred those adjectives

1 whenever you talked about losing the water out of the  
2 system. Suppose a set of results came back and within the  
3 sort of precision that one gets in these things by the time  
4 they are shaken down and everyone has had their crack at  
5 them and so on, that the health measures for the unit --  
6 units came out not to be -- lie probably toward the upper  
7 edge of the band, but not perceptibly out of the band of  
8 other plants, but that the property damage, you know, was  
9 well above the band. Okay?

10 Now, is that an Atomic Energy Act basis for an  
11 enforcement action against the plant either in terms of  
12 requirement for further mitigation measures or more  
13 obviously in the limit pulling the license?

14 MR. BICKWIT: Yes.

15 COMMISSIONER HENDRIE: How does it come out --

16 MR. BICKWIT: You have the authority to issue  
17 orders to minimize and protect property and minimize damage,  
18 minimize danger to life or property

19 CHAIRMAN AHEARNE: All right.

20 COMMISSIONER HENDRIE: God, we have talked about  
21 -- over the years, you know, reasonable risk, and adequate  
22 protection, and so on. I guess I never much thought about  
23 the property side of it, but it is in the statute.

24 COMMISSIONER BRADFORD: It would stand to reason  
25 to continue to talk in terms of the highly unlikely

1 hypothetical. Even if you could assure the evacuation of  
2 Manhattan, you would not site a reactor in Central Park if  
3 there were a possibility that you could not then use the  
4 place until 10 or 20 years afterwards.

5 COMMISSIONER HENDRIE: Couldn't use Manhattan  
6 again? Well, gee, I --

7 (General laughter.)

8 COMMISSIONER HENDRIE: I went to school and worked  
9 in Manhattan for a number of years and lived in Queens and  
10 so on, and have considerable affection for the place, but in  
11 another time and at another place, one might debate whether  
12 the abandonment of Manhattan would necessarily be an  
13 unacceptable societal impact.

14 (General laughter.)

15 COMMISSIONER BRADFORD: I guess I think it would.

16 (General laughter.)

17 COMMISSIONER BRADFORD: Having been raised there,  
18 but even if I hadn't been --

19 CHAIRMAN AHEARNE: Peter, could you review some of  
20 the points that you had hoped to make in your memo?

21 COMMISSIONER BRADFORD: It has two parts. The  
22 first page basically has to do with the questions and some  
23 underlying assumptions about the criteria. The second page  
24 is just modifications to the order. The elements that we  
25 have not touched on that are on the first page, one is, it

1 seems to me that as I ask myself what are the requisites for  
2 continued operation, you not only have whatever the criteria  
3 come out to be on risk, but also there has to be compliance  
4 with the basic regulations.

5           That remains the clearest agency criteria for  
6 operation. We do have specific allegations by a party in  
7 the case that there is non-compliance with at least some of  
8 the regs in one of the plants, and -- so it seems to me  
9 there ought to be a definitive finding on that question at  
10 the end of the proceeding, and the other element that is in  
11 my items that is not in any way implicit in the questions in  
12 the draft order is the business of ascertaining the official  
13 position of the State of New York, which seems to me to be  
14 important in my own efforts at defining adequate protection  
15 for the public health and safety.

16           I would at least like the input of the elected  
17 officials most responsible for the governmental affairs of  
18 the impacted area. We have it from Governor Carey in the  
19 context of the interim order, and I think I would like to  
20 have it in this proceeding as well. Obviously, there are  
21 limits to our ability to extract if they don't choose to  
22 furnish it.

23           CHAIRMAN AHEARNE: What would you see them doing?

24           COMMISSIONER BRADFORD: Again, if the plants meet  
25 the regulations and are within what Joe has said is the band



1 of risk for other plants, then I don't think it is of great  
2 weight.

3 CHAIRMAN AHEARNE: Either way?

4 COMMISSIONER BRADFORD: Either way. That is, I  
5 don't think we would shut a plant down if it meant all our  
6 regulations and was -- there were 10 or 20 plants riskier  
7 operating around the country.

8 CHAIRMAN AHEARNE: Even if the Governor came in  
9 and said, I am very uncomfortable about it?

10 COMMISSIONER BRADFORD: I think he would have to  
11 give us reasons beyond that. I felt somewhat differently in  
12 the Rancho Seco context, even after the TMI aspect, and the  
13 question of P&W reactors, but as a normal matter, I do not  
14 think that we would shut the plant down. I have a separate  
15 set of questions about whether the Governor ought to have  
16 the owner to do it himself, but I think if he wants us to do  
17 it, there has to be a showing of specific reason.

18 But if what came out of the proceeding were  
19 instead an indication that Indian Point were somewhat more  
20 risky, either societal, individual, or both, and leave aside  
21 the question of meeting the regulations, because that is one  
22 we have to decide ourselves, then my feeling, at least at  
23 the moment, is, I would like the State of New York's views  
24 on what adequate protection to the public health and safety  
25 meant.

1           CHAIRMAN AHEARNE:  Would you then see asking for  
2 that opinion after the board made its finding?

3           COMMISSIONER BRADFORD:  That might be a reasonable  
4 way to do it.  I had not thought that through.  Certainly  
5 there are some contexts in which it would not matter, so  
6 maybe the most efficient thing to do is to wait until it has.

7           CHAIRMAN AHEARNE:  Certainly, if it is not going  
8 to matter, then you would not want to go to an extraordinary  
9 effort to get it, but I was thinking more from the way you  
10 just described it, if this had greater risk, that that would  
11 not become clear before the board made its finding, and so  
12 if you are asking the state to address, given that the plant  
13 has greater risk, what is your position?  It would be kind  
14 of hard to get them to take a clear position on a nebulous  
15 set of circumstances.  It is much easier on the concrete.

16           COMMISSIONER BRADFORD:  I think that is right.  
17 What I really would be after is some way to do all that we  
18 reasonably can to assure state participation in the  
19 proceeding with a view toward just that, getting an  
20 articulation of the state position in whatever form a brief  
21 to us or testimony at the appropriate time in the proceeding  
22 as to what the state's position on adequate protection would  
23 be.

24           CHAIRMAN AHEARNE:  When you say --

25           COMMISSIONER BRADFORD:  I know where you are

1 going. I don't know the answer. My first preference is  
2 obviously -- from my own days in state government, it always  
3 seemed better when you had the Governor being represented by  
4 the Attorney General. Then there were still difficulties  
5 with the legislature, but there are states and situations  
6 where you get an Attorney General going one way and the  
7 Governor the other.

8           CHAIRMAN AHEARNE: And the state goes the other  
9 way. Who represents the state?

10           COMMISSIONER BRADFORD: I like to think the  
11 Governor does, but that seems to be one that is somewhat  
12 beyond our control. I would like to get the clearest  
13 articulation we can of the state position in the proceeding.

14           CHAIRMAN AHEARNE: Or a variety of state  
15 positions. I see.

16           COMMISSIONER BRADFORD: The other questions, I  
17 think -- Well, there is the property damage, clearly set  
18 forth in Item 6 -- are variance of questions that are  
19 already in the draft order, and they really are the result  
20 of my just sitting down and listing the things that seem to  
21 me to matter for this proceeding, and they are not really  
22 urged on you as being any better or worse worded than what  
23 we already have.

24           CHAIRMAN AHEARNE: Now, why should the order  
25 mention the fact that the Governor recommended the plants

1 continue?

2           COMMISSIONER BRADFORD: To me, at least, that is,  
3 while not a sine qua non, an important point in all this,  
4 and that given the fact questions have been raised about the  
5 safety of Indian Point, we have a specific petition on it  
6 that there is a good deal of uncertainty acknowledged by  
7 everyone in the task force report on the risk assessment  
8 calculations.

9           The fact is that the state has -- at least the  
10 Governor of the state has put it about as strongly as he  
11 could. I think that as the chief executive officer of New  
12 York State he wants the energy from those plants, and  
13 considers the public health implications to be acceptable.  
14 It seemed significant to me in my thinking, and therefore to  
15 the extent that I have a say in the order, I would urge you  
16 to include it.

17           CHAIRMAN AHEARNE: And the New York --

18           COMMISSIONER BRADFORD: I think the point is that  
19 when you put out an order settling a stage of a proceeding,  
20 you ought just as a matter of art to deal with the -- all of  
21 the contentions that you have that have been made to you and  
22 your reasons for rejecting them.

23           The same with regard to the licensee request on  
24 reconsideration.

25           CHAIRMAN AHEARNE: A may turn out to be true.



1 (General laughter.)

2 CHAIRMAN AHEARNE: Modify Question 2 --

3 COMMISSIONER BRADFORD: Actually, that would be  
4 true whether you used Question 2 out of the draft order or  
5 Question 2 off of my own list.

6 CHAIRMAN AHEARNE: You are adding, I guess -- at  
7 the moment I am having a little difficulty seeing why  
8 specific off-site emergency procedures are not part of the  
9 emergency plan.

10 COMMISSIONER BRADFORD: It is more in the nature  
11 of, if in the course of the proceeding the plans seem to be  
12 inadequate, it is in the same context of saying that the  
13 plant itself, what can be done to improve it.

14 CHAIRMAN AHEARNE: So you are saying that it has  
15 the same -- Number 2 at least was what improvements can be  
16 expected in the near future, and I guess you are adding on  
17 not only what could be expected, but what could be taken.

18 COMMISSIONER BRADFORD: That is the way it would  
19 work. Yes, that is the way it would work in the context of  
20 that question. You would introduce just a different element  
21 into mine.

22 Also, there is some difference in urgency between  
23 that which can be reasonably expected and that which can be  
24 specifically mandated.

25 CHAIRMAN AHEARNE: Yes. Now, do you have in mind

1 -- Your Question Number 10 at least raises the possibility  
2 of you having in mind the board perhaps trying to address  
3 interim operation.

4           COMMISSIONER BRADFORD: No, I am sorry, this is  
5 just for purposes of this order, the one that we would be  
6 putting out at this point. It ought to include a brief  
7 discussion of our understanding of the current situation.

8           CHAIRMAN AHEARNE: I see. Well, that is -- those  
9 are sort of -- my initial reading, I have to, at least for  
10 myself, think more carefully.

11           COMMISSIONER BRADFORD: Okay.

12           CHAIRMAN AHEARNE: Vic, any questions or comments?

13           COMMISSIONER GILINSKY: No.

14           CHAIRMAN AHEARNE: Joe?

15           COMMISSIONER GILINSKY: Let me understand a little  
16 more what people mean by criteria. When you say that we  
17 would use as a criterion whether or not this plant or  
18 another plant departs significantly in one or another form  
19 of risk from the band that applies to other plants, we are  
20 in effect saying that we do not think that they should, and  
21 that if it does -- it leaves open the question of what  
22 significant is.

23           So, there is a certain amount of flexibility  
24 there. Whether that is a factor of two or a factor of 20 or  
25 100 or whatever it is, that if it does, it ought to come

1 back into some reasonable range, or it ought not to continue  
2 to operate.

3           COMMISSIONER HENDRIE: Well, I guess, yes. I  
4 think there is that implication in the way I framed things.  
5 It sort of depends on the way you come at it. Suppose your  
6 view was that the least risky -- that the most risky  
7 operating plant by whatever measure you care to propose was  
8 already substantially below any reasonable safety goal level  
9 that society might impose. So, here is some kind of safety  
10 goal, and in a risk sense is obviously the right direction.  
11 You have a batch of data points down here, and you are  
12 convinced that even the worst of those is well below.

13           Well, in that case, I don't care if Indian Point  
14 is here and all of the rest of the plants are grouped in a  
15 band down like this, because they are all below.

16           Now, it is my sense that that is not exactly the  
17 case. On no grounds other than sort of intuition and  
18 judgmental grounds of our deliberations, calculations, and  
19 so on. I think that the -- I conclude for myself that the  
20 run of operating plants are probably overall at an  
21 acceptable level, as I would judge it, at any rate, but as  
22 we look -- begin to look in some detail on these risk  
23 assessment bases at particular plants, I think we may very  
24 well find some that need some cures to get them back down  
25 into that group, and what I suspect is that if I find one

1 that is well above the group, that I might very well  
2 conclude that that is getting a little too much for me, and  
3 that I want some way to get it back down in there, and if  
4 Indian Point turned out to be one of those, then, you know,  
5 what could we do about it.

6           So, I think there is, in terms of the way I  
7 formulated the criteria, the sort of implicit assumption  
8 that the band, the general band is at an approximately  
9 acceptable level on an absolute scale, but that as you get,  
10 you know, very perceptably above it, why, it becomes -- you  
11 either have or may have gone above the absolute -- an  
12 absolute acceptable band.

13           At such time as we are able to enumerate for  
14 ourselves what we think that absolute level is, then we have  
15 a much better handle on this proposition. In the meantime,  
16 why, my judgment on IP would be where it stands versus where  
17 the band of plants stand.

18           Now, this adjudication is not likely to proceed so  
19 rapidly that we have back before us for decision the record  
20 of the proceeding before we have an opportunity for any  
21 further thought about the general standard.

22           You know, I for myself, as I look around at the  
23 things that are going on in terms of the general standard, I  
24 see initiatives in various industry groups and academic  
25 groups, and there is an initiative in the staff, and we are



1 not without input materials to discussion of such a subject,  
2 one.

3           Two, it seems to me that we are simply attempting  
4 to take the first step on a very long road, and that you  
5 know, several years of studies and analyses and arguments  
6 and hypotheses -- proposals which are then critiqued and so  
7 on, is going to be an appropriate course, but I am not sure  
8 that we have to say absolutely nothing until we have gone  
9 all the way down that line.

10           I begin to sense that I think I could frame a  
11 safety objective that would be -- that the Commission could  
12 discuss, and conceivably put tentatively on the table as an  
13 interim basis inviting comment and providing some limited  
14 amount of guidance over an interim period, and it seems to  
15 me that that is worth trying, and I hope to be able to try  
16 it and encourage discussion, and indeed, by the time the  
17 record of this proceeding came back, we might out of that  
18 kind and other initiatives have a considerably better idea of  
19 where we think we are and where we think we are going to go.

20           So, maybe we sort of start on one basis, but by  
21 the time we get to look at the results, why, we have a  
22 better idea where this whole framework lies on some absolute  
23 scale.

24           COMMISSIONER GILINSKY: You said something earlier  
25 about putting the collective risk as sort of a secondary

1 criterion. I am not sure what weight I would attach to --

2 COMMISSIONER HENDRIE: I think that is very much a  
3 matter of individual point of view, and --

4 COMMISSIONER GILINSKY: I guess I would be  
5 inclined to two sets of criteria.

6 CHAIRMAN AHEARNE: As long as we are keeping them  
7 qualitative, I would have great difficulty with reading them  
8 primary or secondary.

9 COMMISSIONER HENDRIE: Well, that might be an  
10 unfortunate phrasing down the line. I will say for myself  
11 that if we discovered that the IP societal impact was either  
12 within or not substantially above the band, but the  
13 individual risk was. I would regard that as a more  
14 difficult situation than the reverse.

15 CHAIRMAN AHEARNE: I would find it sort of the  
16 opposite.

17 COMMISSIONER GILINSKY: It would be hard to  
18 achieve. What you probably would be doing is, if you bring  
19 the societal risk down into the band, you will be driving  
20 the individual risk way down, and somebody else may be --

21 (General laughter.)

22 COMMISSIONER HENDRIE: I think that is probably  
23 right. In fact, you might even be able to make a proof of a  
24 theory --

25 COMMISSIONER GILINSKY: A possibility --

1           COMMISSIONER HENDRIE: On the other hand, you  
2 know, occasionally, it is interesting to see how you feel  
3 about these pathological cases by way of sort of exercising  
4 a point.

5           CHAIRMAN AHEARNE: Anything else?

6           COMMISSIONER GILINSKY: No.

7           CHAIRMAN AHEARNE: Well, we have, unless general  
8 counsel or OPE has any other comments --

9           MR. BICKWIT: Just one more on the subject. You  
10 mentioned at the last meeting that many of the comments  
11 wanted to emphasize consequences of a probability in your  
12 analysis. If you are putting together criteria, I think now  
13 would be an appropriate time to decide whether you want to  
14 go that way or whether you want to stick with the normal  
15 definition of risk.

16          CHAIRMAN AHEARNE: That is one of the issues

17          COMMISSIONER GILINSKY: Well it seems to me that,  
18 you know, just dealing with consequences in order of  
19 probabilities probably does not make any sense, but the fact  
20 is, when you talk about some of the probabilities we regard  
21 as highly unlikely events, those probability estimates are  
22 pretty uncertain in themselves, and I guess in those  
23 circumstances -- well, for example, before the Brown's Ferry  
24 Event the other day, people would have calculated pretty  
25 small numbers for the chance that it might happen.

1           COMMISSIONER HENDRIE: About one part in 10,000.  
2 If you look in WASH 1270, why, that is what I calculated the  
3 unreliability of the scram systems to be, and that was on the  
4 basis of -- I have forgotten whether -- whether it was one  
5 or two scram failures.

6           COMMISSIONER GILINSKY: I remember there was just  
7 a very small --

8           COMMISSIONER HENDRIE: Yes.

9           COMMISSIONER GILINSKY: -- number in one of the  
10 tests.

11          COMMISSIONER HENDRIE: The one that was not a  
12 failure, but would have been a failure if somebody pushed  
13 the button or it had tripped, and then it was the in reactor  
14 thing, and what I suspect is that that number would not  
15 change greatly if you added in the Brown's Ferry experience.

16          COMMISSIONER GILINSKY: Nevertheless, I still  
17 think that a lot of those estimates are highly uncertain. I  
18 think in those circumstances it is not unreasonable to play  
19 it safe, in other words, take the upper range of the  
20 probability estimates and throw in a factor of safety on  
21 those beyond what the risk estimate -- so I think it is not  
22 an either or question here. I think -- I mean, how do you  
23 end up --

24          COMMISSIONER HENDRIE: No, I agree. If you say, I  
25 will just look at probabilities, then what you end up doing



1 is giving no weight to the big accidents which tend to have  
2 low probabilities, and that does not make sense, because  
3 even though they hopefully have low probabilities, if they  
4 happen to be substantial consequences -- on the other hand,  
5 if you look just at consequences, then what you in effect  
6 conclude is that the worst that can happen will happen, and  
7 all that is going to lead you to is nightmares, and not only  
8 in this field. You know, it is not a basis on which you can  
9 make a rational public policy decision. I think you need --  
10 I think you need both of them. I think it is -- I think it  
11 is not unreasonable to ask to see what the probabilities are  
12 and the consequences are and the product rather than just  
13 the product alone maybe.

14           So, you know, if you have a yen for one or the  
15 other, why, you can look and see how it goes.

16           CHAIRMAN AHEARNE: The issue that is -- and I do  
17 not think -- because of the uncertainties in the  
18 calculations and the methodology, I don't think you will  
19 ever get to doing a mathematical analysis, but if one could,  
20 it is whether there is a weighting factor, a non-zero  
21 weighting factor that increases the consequences such that  
22 in that product, as the consequence gets very large, that  
23 the significance of that product is larger than the  
24 unweighted product.

25           That is really what the issue turns out to be, and

1 I would guess it is again going to be a subject of  
2 qualitative description. That is really what Vic was saying  
3 when he talked about perhaps a safety factor at the upper  
4 end.

5 Any other --

6 COMMISSIONER HENDRIE: In order to know where we  
7 go from here, we may have to scratch a little bit more at  
8 some of these thrusts on the questions.

9 CHAIRMAN AHEARNE: I think what we have to do is  
10 first -- you nodded your head when I asked whether you would  
11 take a crack at trying to draft the decision criteria.

12 COMMISSIONER HENDRIE: No, no.

13 (General laughter.)

14 COMMISSIONER HENDRIE: I was recoiling in horror.  
15 You just took that to be an upward motion.

16 (General laughter.)

17 MR. BICKWIT: There were a lot of nods over here.

18 CHAIRMAN AHEARNE: Perhaps you can use the  
19 services over there, but --

20 COMMISSIONER HENDRIE: All right, I will take it.

21 CHAIRMAN AHEARNE: And then Peter has really  
22 proposed a number of alternatives on the questions, and I  
23 think we have just got to try to see what we can --

24 COMMISSIONER BRADFORD: Why don't I undertake to  
25 circulate a version of the order that incorporated those

1 points specifically, and do it through the Secretary?

2           CHAIRMAN AHEARNE: Fine, fine. I would guess it  
3 will not be straight up and down. It undoubtedly will be a  
4 modification.

5           COMMISSIONER BRADFORD: That is fine. It seems  
6 more efficient to comment in terms of a written draft going  
7 out for comments than to come back here again on it right  
8 away.

9           CHAIRMAN AHEARNE: Fine.

10          COMMISSIONER HENDRIE: Before you go away --

11          CHAIRMAN AHEARNE: Today or next week?

12          COMMISSIONER HENDRIE: Today.

13          MR. BICKWIT: How about next week?

14          (General laughter.)

15          CHAIRMAN AHEARNE: Yes.

16          COMMISSIONER HENDRIE: The last time we were at  
17 the table on this subject, the counsel aided us greatly with  
18 a discussion of things like burden of proof, the burden of  
19 going forward.

20          CHAIRMAN AHEARNE: You committed him to discussing  
21 that.

22          COMMISSIONER HENDRIE: A discussion which I found  
23 totally impenetrable.

24          CHAIRMAN AHEARNE: At this table, the word is  
25 inscrutable.

1           COMMISSIONER HENDRIE: I don't know whether that  
2 is the counsel's frailty or mine, but I asked if he could --

3           MR. BICKWIT: I know who is going to pay for it.

4           (General laughter.)

5           COMMISSIONER HENDRIE: I asked if he would try it  
6 again from a different direction.

7           COMMISSIONER BRADFORD: Since then, we have given  
8 you a new tool, the rebuttable presumption.

9           (General laughter.)

10          COMMISSIONER HENDRIE: Yes, but what I can't --

11          CHAIRMAN AHEARNE: Blunt arrows --

12          COMMISSIONER HENDRIE: I keep forgetting whether  
13 "rebuttable" is the important word or "presumption" is the  
14 important word.

15          MR. BICKWIT: All right. I am not really clear  
16 where I went wrong last time.

17          COMMISSIONER HENDRIE: Neither am I.

18          COMMISSIONER BRADFORD: But just let me try to --

19          COMMISSIONER GILINSKY: This is the burden in this  
20 proceeding?

21          MR. BICKWIT: You want a general discussion of  
22 what is the burden of proof.

23          COMMISSIONER HENDRIE: In particular, what does it  
24 mean in this case?

25          MR. BICKWIT: All right.



1           COMMISSIONER HENDRIE: I think in a normal  
2 licensing hearing, it seems to me that the people who have  
3 the burden of proof are the people who are trying to make  
4 the case. In order for them to be successful, they must  
5 convince people that their propositions are supportable and  
6 are supported, and folk who are against it don't have to  
7 advance some different course of action. They just attack  
8 the guy's basic proposition.

9           So, it seems to me clear enough there. In this  
10 one, who is proving what against whom? And it seems to me  
11 that is the kind of thing that the commenters said. Would  
12 you please give instruction when you got around to it?

13           MR. BICKWIT: It strikes me that whenever a  
14 question is asked logically there can be a burden of proof  
15 assigned. It need not be in the context of an enforcement  
16 proceeding. It can be in the context of a discussion. The  
17 question that involves burden of proof is always, what  
18 happens when the decision maker on a question is undecided  
19 after hearing all the evidence, and it seems to me that that  
20 from a logical standpoint -- you can apply that concept to a  
21 question having nothing to do with enforcement.

22           You and I are having a conversation, and it  
23 involves a given question, and Peter is making the ultimate  
24 judgment on the basis of our discussion. It is seldom done,  
25 but it is perfectly logical to assign to one of us the

1 burden of proof, so that if Peter is in a total quandary  
2 after hearing our discussion, he would make a decision based  
3 on who had that burden, and would decide against the person  
4 who had that burden, and that is really all we are talking  
5 about here. You could in this instance not assign a burden.

6 CHAIRMAN AHEARNE: What you are saying is, in that  
7 kind of a context, you do an assignment, and if nobody makes  
8 the case, the person who had the burden of proof loses.

9 MR. BICKWIT: That is right. Now, in this kind of  
10 a proceeding, you could say, if nobody makes the case, a  
11 given party loses, or you could say, if nobody makes the  
12 case, that will simply be reported up to the Commission.

13 COMMISSIONER BRADFORD: With consequences unknown.

14 MR. BICKWIT: That is right. I mean, it would be  
15 perfectly reasonable to say on the question, what would be  
16 the energy consequences of a shutdown, to say the board was  
17 totally undecided as between the positions of Party A and  
18 Party B. It would not be possible if you had assigned a  
19 burden. You would not get that kind of a report. If you  
20 had assigned a burden --

21 CHAIRMAN AHEARNE: Does the term have meaning in  
22 the kind of questions just asked if it is a strictly factual  
23 question that is being asked?

24 MR. BICKWIT: Yes. Burden of proof is used --

25 CHAIRMAN AHEARNE: What are the economic

1 consequences of shutdown?

2 MR. BICKWIT: Different people will take different  
3 positions.

4 CHAIRMAN AHEARNE: The board would be responsible  
5 for making a recommendation or reaching its conclusion on,  
6 here are the economic consequences.

7 MR. BICKWIT: One party will say, here are the  
8 economic consequences. Another will disagree. If you  
9 assign a burden --

10 CHAIRMAN AHEARNE: But you described this last  
11 time as an investigatory hearing. The board is trying to  
12 investigate something, find something out. It is trying to  
13 make its best judgment.

14 COMMISSIONER GILINSKY: It is more than that. If  
15 you decided to --

16 CHAIRMAN AHEARNE: I am just asking in this  
17 particular -- I can see some issues of the burden of proof  
18 being something that would come into play. I am having  
19 difficulty with a strictly factual question. The board is  
20 trying to find out what is the situation.

21 MR. BICKWIT: Different people will take different  
22 positions on that.

23 CHAIRMAN AHEARNE: Certainly, but it is not trying  
24 to say, your position is right or your position is right.  
25 You are asking the board to reach the conclusion, what do

1 they think is the correct answer.

2 MR. BICKWIT: That is true. You are also deciding  
3 what the board should do in the event that it is undecided  
4 as between the positions put forward.

5 That is what burden of proof is about.

6 COMMISSIONER BRADFORD: To give it a concept --  
7 make it a concept that has a clear meaning for any given  
8 hypothetical, you have to be able -- the decision-maker has  
9 to be able to articulate the result that will flow from  
10 either unclear evidence or the absence of evidence. If you  
11 are doing it with something like the economic costs, I  
12 suppose you could say, well, the Commission will assume that  
13 the costs are A, B, C, and D, in the absence of a convincing  
14 showing to the contrary.

15 CHAIRMAN AHEARNE: I suspect what I am wrestling  
16 with is my problem with using this kind of format to get at  
17 an answer.

18 MR. MALSCH: I can say usually the way boards  
19 would approach the question. First of all, they would look  
20 at the logic of the various parties' positions for logical  
21 flaws. Obviously, if they find a logical flaw, that  
22 position drops out. If you find there are two positions  
23 equally logical, and then they look at things like time  
24 spent in investigation thoroughness. If that fails, you  
25 look at things like who is the better expert. If everything



1 fails --

2           CHAIRMAN AHEARNE: I think -- I am not sure  
3 whether Commissioner Hendrie's questions are resolved. I am  
4 comfortable. I have a very clear picture of it. I am not  
5 very happy with it, and it certainly would relieve me to  
6 conclude on many of these questions it is better to reserve  
7 them to the Commission because it is a subjective judgment  
8 that has to be reached.

9           MR. MALSCH: Not usually. I have never seen --

10          CHAIRMAN AHEARNE: I am not saying usually. I am  
11 saying in this case.

12          MR. MALSCH: Usually my experience has been before  
13 licensing boards -- most decisions get solved on a logical  
14 basis.

15          CHAIRMAN AHEARNE: In which case, the burden of  
16 proof issue is not a driving factor.

17          COMMISSIONER GILINSKY: Isn't the question really  
18 whether someone has to show risks attached to the activity  
19 that he is conducting are not significantly greater than  
20 those attached to a typical facilities operation, or whether  
21 -- and if he does not show it, he cannot operate, or if  
22 someone else has to show that the risk succeeds at a level  
23 of significance, then --

24          MR. BICKWIT: As I said last time --

25          CHAIRMAN AHEARNE: That is right.

1 MR. BICKWIT: There are three different kinds of  
2 questions.

3 CHAIRMAN AHEARNE: When you break it into a whole  
4 bunch of questions, as the people who raised this said last  
5 time, when you have a string of questions, there are  
6 different people who are participating in the examination,  
7 on each one of those different questions, and the burden of  
8 proof issue came up with respect to some of those more  
9 narrow questions.

10 MR. BICKWIT: I think there are three different  
11 categories of questions, the narrow ones, the decision on  
12 whether a given criterion is met, and the decision on what  
13 to do, what action to take, and you can assign a burden, a  
14 different kind of burden on each one of those kinds of  
15 questions, or you could choose to assign no burden on any of  
16 them.

17 CHAIRMAN AHEARNE: I am sorry, Joe. I jumped in,  
18 and they were trying to answer your question.

19 (General laughter.)

20 MR. BICKWIT: I would suggest that if the concept  
21 is ill-fitting to this proceeding, in your view, then the  
22 appropriate position to take is that there should be no  
23 burdens assigned.

24 CHAIRMAN AHEARNE: Which is one of the --

25 MR. BICKWIT: That is right.

1 CHAIRMAN AHEARNE: But the petitioner basically  
2 did not say, assign here, assign there. He was raising the  
3 question to be clear on where the burden of proof was.

4 MR. BICKWIT: That is right.

5 COMMISSIONER BRADFORD: I want to think about that  
6 some more, Len. I am troubled by it, because it seems to me  
7 that in fact, whether or not we assign a burden, there  
8 certainly is one. That is, there will be consequences  
9 attaching to either a completely unclear record or a record  
10 on which no one has sought to go forward on a particular  
11 subject.

12 That is as true whether you put it in the  
13 formulation of saying we should reserve these decisions to  
14 the Commission as it is. If we somehow formally tell a  
15 licensing board to make a finding in the absence of a clear  
16 record, there are consequences that attach to the failure to  
17 have convincing evidence on one side or the other.

18 CHAIRMAN AHEARNE: When I said, reserve it to us,  
19 it was more -- and some of those, if they are really going  
20 to turn out to be that kind of balancing that Marty was  
21 describing, that you reach deep down, and there is a lot of  
22 balancing judgment, then I would be more comfortable at that  
23 stage in us trying to do that.

24 COMMISSIONER BRADFORD: That is right, and I think  
25 what was troubling me is just that I do agree to the extent

1 we can. It is better to be clear at the beginning what the  
2 consequences of a failure to persuade on any given point  
3 would be. In some cases, it is obvious.

4 MR. BICKWIT: We will have other meetings.

5 CHAIRMAN AHEARNE: Do you understand --

6 COMMISSIONER HENDRIE: I think the sensible thing  
7 to do is go home and go for a long swim and have a stiff  
8 drink.

9 (General laughter.)

10 CHAIRMAN AHEARNE: Well, hopefully, at the end of  
11 that you will then take a crack at the criteria, and Peter,  
12 you will try and draft an order.

13 (Whereupon, at 3:52 p. m., the meeting was  
14 adjourned.)

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NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the  
COMMISSION MEETING

---

in the matter of: PUBLIC MEETING - DISCUSSION OF INDIAN POINT

Date of Proceeding: July 25, 1980

Docket Number: \_\_\_\_\_

Place of Proceeding: Washington, D. C.

were held as herein appears, and that this is the original transcript thereof for the file of the Commission.

David S. Parker

Official Reporter (Typed)



(SIGNATURE OF REPORTER)

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

Attached to lt  
7/15/80 from  
Leonard Bickel  
9h.

Commissioners:

John F. Ahearne, Chairman  
Victor Gilinsky  
Joseph M. Hendrie  
Peter A. Bradford

CONSOLIDATED EDISON COMPANY  
OF NEW YORK (Indian Point,  
Unit No. 2)

POWER AUTHORITY OF THE STATE  
OF NEW YORK (Indian Point,  
Unit No. 3)

Docket Nos. 50-247  
50-286

MEMORANDUM AND ORDER

A. BACKGROUND\*

On May 30, 1980, the Commission issued an order establishing a four-pronged approach for resolving the issues raised by the Union of Concerned Scientists' petition regarding the Indian Point nuclear facilities, and by the decision of the Director, Office of Nuclear Reactor Regulation (NRR), granting in part and denying in part that petition. The order announced the Commission's intention to hold a discretionary adjudication for the resolution of safety issues concerning the plants; initiated an informal proceeding for the purpose of defining

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\* The Commission has received a motion from the Union of Concerned Scientists, dated June 23, 1980, requesting the disqualification of Commissioner Hendrie from participation in this matter. In its Diablo Canyon decision (In the Matter of Pacific Gas and Electric, 11 NRC 411 (1980)), the Commission stated that requests for the disqualification of a Commissioner would not be entertained by the Commission as a whole, but would be referred to the Commissioner whose disqualification was requested. By memorandum of April 23, 1980, Commissioner Hendrie has denied the request for his disqualification.

the questions to be answered in that adjudication, as well as the criteria to be applied; announced the Commission's plan to address the generic question of the operation of nuclear reactors in areas of high population density through a generic proceeding, to be decided at a later date; and directed the Commission's General Counsel and Director, Office of Policy Evaluation, to establish a Task Force to address the question of the status of the reactors during the pendency of the planned adjudication. The Task Force has now presented its report to the Commission. On the basis of its findings, we conclude that the risks posed by the operation of the Indian Point facilities during the pendency of the adjudication are not such as to warrant the extraordinary remedy of an interim shutdown in that period.

#### B. THE TASK FORCE ON INTERIM OPERATION

The Task Force was asked to examine the following specific questions:

1. A description of the Indian Point site demography as compared to other U.S. reactor sites.
2. A comparison of reactor accident risks (spectrum of probabilities and consequences for health impacts and property damage) at the Indian Point site to reactor accident risks at other sites.
3. The effects of potential public emergency response systems (evacuation, sheltering, etc.) on reactor accident risks at Indian Point. The area studied should be large enough to include New York City. This evaluation

should include an assessment of the effects of uncertainties associated with successfully completing such actions.

4. A comparison of the reliability or accident probabilities of the Indian Point 2 and 3 reactors to each other and to other reactor designs which have been analyzed. This should include consideration of the changes ordered by the Director, NRR; technical design comments received in response to the Commission's February 15 solicitation of comments; and the effects of partial reductions in power level.
5. An assessment of the economic, social, and other "non-safety" effects of shutting down or reducing the output of either or both reactors.

The Commission directed that the Task Force develop the information necessary for a Commission decision on interim operation, consider the comments that had been filed with the Commission in the matter of interim operation, and present that information to the Commission.

#### C. TASK FORCE FINDINGS

On June 12, the Task Force presented its report to the Commission, and on June 26, it briefed the Commission as to its findings in a public meeting. The Task Force found the following with respect to the first four items of its charter:

##### 1. Site Demography

With New York City within less than 50 miles to the south, the Indian Point site has the highest or one of the highest surrounding population



densities of all U.S. nuclear power plant sites, as shown by the various population density criteria examined by the Task Force. The data for total population levels out to 10, 30, and 50 miles show Indian Point figures as highest for the U.S. Total estimated populations to these distances are approximately 218,000, 398,000, and 17 million, respectively, as compared with corresponding median population levels for all U.S. power reactors of 24,000, 334,000, and 1 million.

When considering reactor accident risk, the population in a given direction, (i.e., in one 22-1/2 degree sector), is often more significant than population density averaged over all directions. Here too, Indian Point ranks among the highest: eighth with respect to the highest-population sector at 10 miles, and highest at 30 and 50 miles.

## 2. Comparison of Accident Risks

Accident risk, in the sense of the product of accident probabilities and consequences, is partly a function of population density and distribution around the plant. In addition, it is a function of design and operational characteristics of the reactor plant, local meteorology, and measures -- such as sheltering or evacuation -- which could be taken to reduce the effect of a reactor accident on the public. The Task Force compared Indian Point risks with those of other reactor sites and designs, distinguishing among effects of population densities and of design and other factors.

### a. Site Aspects

To discern the risk effects of site considerations alone, the Task Force calculated risk measures for various sites for a "benchmark"

reactor, whose design remained constant regardless of site. (The Surry pressurized water reactor was used as the benchmark design, but with a power level increased to 3025 thermal megawatts, the rating of Indian Point 3.) Six sites were analyzed for this comparison. Four -- Indian Point, Zion, Limerick, and Fermi -- represent sites of relatively high population. One, Palisades, represents what the Task Force believed is a site with typical or average population distribution. The last, Diablo Canyon, represents a remote site, that is, one with relatively low population density.

The comparison was made in terms of four principal risk measures: early fatalities, early (radiation) illnesses, latent cancer fatalities, and public property damage costs. For each of these measures, the Task Force considered both accident consequences and, using the benchmark reactor, the probability of their being exceeded. Integration of consequences of accidents for all probabilities represents the overall risk.

Risk estimates of this sort necessarily involve wide uncertainties, as the Task Force emphasized. The large uncertainties in absolute values of risk estimates generally introduce wide uncertainty bands in comparisons. Subject to those uncertainties, and subject to the assumed conditions, including unshielded exposure during the entire radioactive cloud passage, the Task Force found that Indian Point risks attributable to site (i.e., surrounding population) factors alone compared with risks of other sites as follows:

(1) Early fatalities:

Indian Point risks are essentially the same as those of the other sites with dense local population. The less densely populated sites showed progressively much lower risk levels. Early fatalities are dominated by the population within 10 miles of the plant, so the large population of New York City is not a factor here. At very low probabilities, up to thousands to tens of thousands can occur, according to the estimates.

(2) Early illness from radiation:

These risks are dominated by the population within 50 miles. Thus, New York City is important here. Indian Point risks were comparable to those of the other high-population sites. The Palisades and Diablo Canyon sites were not very different from each other but were found to be substantially lower than the others. At very low probabilities, up to hundreds of thousands of persons could suffer radiation illness, according to the estimates.

(3) Latent cancers (i.e., delayed cancers, occurring possibly a number of years after radiation exposure, which are statistically expected in excess of those that would otherwise have occurred):

These are dominated by the population within about a 200-mile radius of the plant. Because of this, the individual site risk curves for latent cancers reflect the character of the region. The latent cancer risk for these sites, and probably all other

sites, is approximately the same. The number of latent cancer deaths projected is on the order of hundreds per year or thousands per accident for the lower probability events (on the order of  $10^{-9}$  per year).

- (4) Property damage, excluding damage to the plant itself, was estimated as proportional to population density. Accordingly, Indian Point was at or near the high end of property damage estimates, differing only moderately from the other high-density sites, but sharply higher than Palisades and, especially, Diablo Canyon. Damage can reach up to tens of billions of dollars at very low probability levels for the high-density -- and even intermediate density -- sites.

The worst of the accident consequences -- those that result in fatal doses or severe ground contamination -- would ensue only from certain accident scenarios entailing core meltdown and gross containment failure, coincident with particularly adverse weather conditions. Expected consequences, i.e., consequences statistically expected, taking annual accident probabilities and magnitudes of consequences into account, compare as follows, as summarized in Table 5 of the Task Force report, which follows.



TABLE 5

EXPECTED ANNUAL CONSEQUENCES (RISK) FROM 6 SITES  
WITH THE SURRY REBASELINED PWR DESIGN

Site	Probability of Consequence Oc- currence per yr	Early Fatalities	Early Injuries	Latent Cancer/Yr*	Property Damage \$**
Diablo Canyon		$1.6 \times 10^{-5}$	$2.5 \times 10^{-4}$	$1.8 \times 10^{-4}$	1290
Palisades		$2.9 \times 10^{-4}$	$1.2 \times 10^{-3}$	$2.7 \times 10^{-4}$	2670
Fermi		$9.2 \times 10^{-4}$	$6.3 \times 10^{-3}$	$3.6 \times 10^{-4}$	4780
Limerick		$3.5 \times 10^{-3}$	$1.1 \times 10^{-2}$	$4.7 \times 10^{-4}$	6980
Zion		$4.7 \times 10^{-3}$	$1.2 \times 10^{-2}$	$4.3 \times 10^{-4}$	6030
Indian Point		$6.1 \times 10^{-3}$	$1.5 \times 10^{-2}$	$5.4 \times 10^{-4}$	9550

\*Total Latent Cancers Would Be 30 Times Higher

\*\*Based on 1974 Dollars

NOTE: THERE ARE LARGE UNCERTAINTIES WITH THE ABSOLUTE VALUES PRESENTED IN THIS TABLE.

- ASSUMPTIONS:
1. SURRY DESIGN.
  2. I.P. UNIT 3 POWER LEVEL (3025 MWT).
  3. WITHIN 10 MILES - ENTIRE CLOUD EXPOSURE + 4 HOURS GROUND EXPOSURE  
NO SHIELDING  
BEYOND 10 MILES - ENTIRE CLOUD EXPOSURE + 7 DAY GROUND EXPOSURE  
SHIELDING BASED ON NORMAL ACTIVITY.
  4. WIND ROSE WEIGHTED 1970 CENSUS POPULATION DISTRIBUTION.
  5. IDENTICAL #1 WEATHER SEQUENCES FOR ALL SITES.

b. Design Effects

The Task Force performed an analysis to estimate the extent to which the impact of the relatively unfavorable site demographic characteristics on the relative risk at Indian Point would be modified by design characteristics of the Indian Point plants. The analytical approach was to consider accident sequences that, based on previous studies, could reasonably be viewed as dominating overall risk. The sequences examined included reactor-transient accidents and loss-of-coolant accidents. The design-effects comparison was done by comparing what the risks of plants of the Indian Point and other designs would be were they all located at the Indian Point site and operated at the same power level.

The Task Force points out that large uncertainties surround the results -- uncertainties believed larger than those surrounding estimates for site-dependent differences alone.

Subject to those uncertainties, the Indian Point reactors were estimated to have a 1 in 100,000 annual probability of suffering severe core damage, as compared with probabilities some 3 to 20 times higher for six other representative U.S. pressurized-water and boiling-water reactors.

The risk of the Indian Point reactors appeared from the Task Force analysis to be even lower compared to the other reactors examined than the ratio of their estimated core damage accident probabilities would suggest. The changes completed and in progress at Indian Point

as a result of the decision of the Director of Nuclear Reactor Regulation concerning the petition of the Union of Concerned Scientists produce a further risk reduction estimated by the Task Force at a factor of three. The risks, in terms of statistically expected annual consequences for the Indian Point and three other plant designs, were they all located at the Indian Point site, would compare as follows, as summarized in Table 8 of the Task Force report, reproduced below.

TABLE 8

EXPECTED ANNUAL CONSEQUENCES (RISK) FROM 5 LWR DESIGNS  
AT THE INDIAN POINT SITE

Design	Prob. of Consequence Occurrence per yr	Early Fatalities	Early Injuries	Latent Cancer/Yr*	Property Damage \$**
IP After Fix		$2.2 \times 10^{-4}$	$2.7 \times 10^{-4}$	$1.6 \times 10^{-5}$	199
IP Before Fix		$6.3 \times 10^{-4}$	$9.5 \times 10^{-4}$	$4.4 \times 10^{-5}$	700
Surry Rebaselined		$6.1 \times 10^{-3}$	$1.5 \times 10^{-2}$	$5.4 \times 10^{-4}$	9550
Sequoyah Ice Condenser		$2.7 \times 10^{-3}$	$2.2 \times 10^{-2}$	$1.2 \times 10^{-3}$	14800
Peach Bottom BWR Rebaselined		$1.7 \times 10^{-2}$	$3.1 \times 10^{-2}$	$1.1 \times 10^{-3}$	13500

\*Total Latent Cancers Would Be 30 Times Higher

\*\*Based on 1974 Dollars

NOTE: THERE ARE LARGE UNCERTAINTIES WITH THE ABSOLUTE VALUES PRESENTED IN THIS TABLE.

- ASSUMPTIONS:
- INDIAN POINT SITE  
METEOROLOGY - 91 WEATHER SEQUENCES  
WIND ROSE WEIGHTED 1970 CENSUS POPULATION DISTRIBUTION  
UNIT 3 POWER LEVEL (3025 MWT)
  - WITHIN 10 MILES - ENTIRE CLOUD EXPOSURE + 4 HOURS GROUND EXPOSURE  
NO SHIELDING  
BEYOND 10 MILES - ENTIRE CLOUD EXPOSURE + 7 DAY GROUND EXPOSURE  
- SHIELDING BASED ON NORMAL ACTIVITY



c. Overview

After separately examining the risk of the Indian Point site and of the Indian Point design, the Task Force summed up its findings as follows:

[T]he site is about an order of magnitude more risky than a typical site and the design about as much less risky than a typical design. There is much more certainty in our comparison of the relative site risks than there is in the comparison of the design risks. It is reasonable to conclude that the two about cancel, that is, the overall risk of the Indian Point reactor is about the same as a typical reactor on a typical site. We recognize that such a comparison makes no explicit compensation for the Indian Point risk entailing notably higher consequences even if at lower probability than is typical. It is not unusual in risk aversion to demand lower risk as the potential consequences increase -- as the stakes get higher. Accordingly, one might argue that the probability should be more than a magnitude lower if the consequences can be a magnitude higher.

3. Emergency Planning Considerations

The Task Force analyzed the sensitivity of the Indian Point risks to the effects of evacuation and sheltering.

The Task Force reported analyses which assumed that all persons who would be evacuated from the vicinity of the plant in an accident would suffer cloud exposure from the radionuclides released. As a result of this pessimistic assumption, the analyses presented showed little difference in public risk for the alternatives of different radii of evacuation, sheltering, or even no evacuation for one day after the accident. Under the same assumption the Task Force analyses showed somewhat higher risk of early fatalities for the no evacuation alternative, and some reduction of the early illness risk for the sheltering and 50-mile evacuation

alternatives, but the calculated differences are small in relation to the uncertainties of the analysis. The Task Force did some further analyses which were reported to the Commission in the briefing at the June 26, 1980 open Commission meeting, which indicated that prompt notification and evacuation out to 10 miles could substantially reduce the early fatality risk.

4. Special Design and Operational Provisions

a. Difference Between Units 2 and 3

The Task Force found no risk significant differences between the Indian Point 2 and 3 designs. It made this finding in its examination of the two designs in relation to the seven accident sequence scenarios that it judged to dominate overall risk.

b. Effects of Design and Operational Changes

The design and operational fixes completed or imminent at Indian Point in accordance with the decision of the Director of Nuclear Reactor Regulation in connection with the petition of the Union of Concerned Scientists reduce risk by a factor of three, in the Task Force's estimation.

c. Effects of Power Level Reduction

Reduction of power level would reduce risk primarily through two mechanisms:

- (1) proportionate reduction in the longer-lived radioactive fission-product inventory, which would produce a less-than-proportionate decrease in accident consequences; and

- (2) reduction in accident probabilities through lowered fuel temperatures and reduced rate of decay heat after shutdown, both of which would improve the reactor core's tolerance for poor cooling.

Though the Task Force performed no detailed study, it concluded from its consideration of these mechanisms that it appeared reasonable to say that risk would be reduced in proportion to the reduction in power level.

#### D. CONCLUSION

The Director of Nuclear Reactor Regulation acted on the petition to shut down these reactors on February 11, 1980, finding that the interim risk of their continued operation while the matter was being considered did not warrant their shutdown. Now the Task Force has conducted a separate evaluation of the comparative risk of interim operation.

We have reviewed the report of the Task Force with great care. It should be emphasized that our review has been directed not to the question which is the subject of the adjudicatory proceeding which will be initiated -- that is, the long-term acceptability of the Indian Point Unit 2 and 3 facilities -- but rather to the issue of whether the two plants should or should not be allowed to operate during the pendency of that adjudication. Our conclusion is that the evidence now before us indicates that the risks posed by operation of the two plants is not so great, or so dissimilar to the risks posed by other facilities licensed to operate by the Commission, as to warrant the extraordinary remedy of an interim shutdown or reduction in power level. The gist of the Task Force

report is that although the Indian Point site is considerably less desirable than the average nuclear power plant site, in terms of the density of the surrounding population, special design features not found in the average nuclear power plant reduce the accident risk from Indian Point by a comparable factor. We are conscious as well that operation of the two facilities, during this interim period, is subject to the various safety improvements ordered by the Director, Office of Nuclear Reactor Regulation, in his February confirmatory order. In so finding, we are not prejudging the outcome of the adjudicatory proceeding, but rather are addressing only the narrow question of whether interim relief is appropriate during the period in which the adjudication will be arriving at a decision, based on the evidence submitted to it. In the event that the Licensing Board conducting the adjudication determines that new evidence warrants interim relief, it can at any time recommend that course of action to the Commission. For the present, however, we find no basis in the record to support the extraordinary measure of an interim shutdown in advance of completion of the hearing and Commission decision.

It should be emphasized that our decision is based on grounds of safety, and the actual risks posed by the plant. Though we have sought out information as to the economic and other non-safety issues involved in the decision whether to shut down the two plants, those factors do not play a part in this decision today. We need not decide today the extent to which such factors may be taken into account, in circumstances in which safety considerations militate in favor of one course of action, while economic considerations argue for a contrary result.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of )

CONSOLIDATED EDISON COMPANY )  
OF NEW YORK, INC. (Indian Point, )  
Unit No. 2) )

Docket Nos. 50-247  
50-286

POWER AUTHORITY OF THE STATE OF )  
YORK (Indian Point, Unit No. 3) )

UNION OF CONCERNED SCIENTISTS'  
MOTION TO DISQUALIFY COMMISSIONER HENDRIE

The Union of Concerned Scientists (UCS) moves that the Commission disqualify Commissioner Hendrie from further participation in any deliberations or decisions by the Commission concerning UCS' Petition for Decommissioning of Indian Point Unit 1 and Suspension of Operation of Units 2 & 3. This Motion is based on the likelihood of actual prejudice and the inescapable appearance of prejudice and unfair treatment that stems from Commissioner Hendrie's previous extensive involvement in the consideration of the Indian Point reactors as a member of the American Nuclear Energy Reactor Safeguards (ACRS) Division of Technical Regulation. UCS first requested that the Commission disqualify Commissioner Hendrie in Paragraph 69 of its Petition for Decommissioning of Indian Point Units 2 & 3 by the Director of Nuclear Regulation.

DUPLICATE DOCUMENT

Entire document previously  
entered into system under:

ANO 8006260188

No. of pages: 10

8006260188 10pp

The request for an interim shutdown of Indian Point Units 2 and 3 is therefore denied. By a subsequent Order, we shall prescribe the questions to be resolved in the adjudicatory proceeding, and the criteria to be applied.

It is so ORDERED.

For the Commission

---

SAMUEL J. CHILK  
Secretary of the Commission

Dated at Washington, D.C.

this        day of July, 1980.

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
UNITED STATES ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

SEP 23 1970

Honorable Glenn T. Seaborg  
Chairman  
U. S. Atomic Energy Commission  
Washington, D. C. 20545

Subject: REPORT ON INDIAN POINT NUCLEAR GENERATING UNIT NO. 2

Dear Dr. Seaborg:

At its 125th meeting, September 17-19, 1970, the Advisory Committee on Reactor Safeguards completed its review of the application by Consolidated Edison Company of New York, Inc., for authorization to operate the Indian Point Nuclear Generating Unit No. 2. This project had previously been considered at the Committee's 95th, 98th, 122nd, and 124th meetings, and at Subcommittee meetings on August 23, 1969, March 13, 1970, April 25, 1970, May 28, 1970, July 28-29, 1970, and September 15, 1970. Subcommittees also met at the site on December 28, 1967 and May 11, 1970. The Committee last reported on this project to you on August 16, 1966. During the review, the Committee had the benefit of discussions with representatives of the Consolidated Edison Company and their contractors and consultants, and with representatives of the AEC Regulatory Staff. The Committee also had the benefit of the documents listed.

The Indian Point site is located in Westchester County, New York, approximately 24 miles north of the New York City limits. The minimum radius of the exclusion area for Unit No. 2 is 520 meters and Peekskill, the nearest population center, is approximately one-half mile from the unit. Also at this site are Indian Point Unit 1, which is licensed for operation at 615 Mwt, and Unit 3,

The applicant has re-evaluated the event of the probable maximum recent information, and exists for vital components a

Additional seismic reinforcement Unit No. 1 superheater building superheater stack will enable of 300-360 mph corresponding

DUPLICATE DOCUMENT

Entire document previously entered into system under:

ANO 8006260190

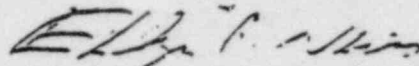
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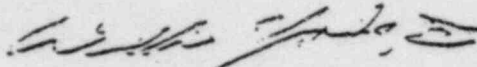
10 pp

appeal to the Court of Appeals, if that should be necessary,  
before the Commission reaches any substantive decisions  
concerning UCS' Petition.

Respectfully submitted,



Ellyn R. Weiss  
General Counsel to UCS



William S. Jordan, III  
Harmon & Weiss  
1725 I Street, N.W.  
Suite 506  
Washington, D.C. 20006  
(202) 833-9070

Dated: 5-22-85



RESPONSIBILITY FOR DECISIONS:

Supervision Received:

Director, Directorate of Licensing, GS-18. Work is reviewed for over-all adequacy.

Independent Action:

Reviews the overall performance of those organizational units report to him for accuracy and completeness.

Review incoming correspondence, documents and technical assignments determines order of priorities, and issues assignments.

Prepares important correspondence not requiring a major policy decision for the signature of the Director, Directorate of Licensing or the Director of Regulation, as appropriate.

Makes appointments, schedules meetings and conferences.

Performs research as needed to present completed staff work and background.

Coordinates and supervises the preparation of major policy document strategy papers, and internal reviews.

SUPERVISION:

Supervises the Assistant Director for Reactor Safety, Assistant Director for Containment Safety, and Assistant Director for Site Safety.

WORKING CONDITIONS:

Normal.

EFFORT:

Normal.



UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

ATTACHMENT #

*File*  
*FDK*

*File*  
*DWH*

Docket Nos. 50-3  
50-247  
and 50-256

SEP 10 1973



Mr. Franklin L. Gage  
Coordinator  
Citizens Association for  
Safe Energy  
27 Eastings Avenue  
Croton-on-Hudson, New York 10520

Dear Mr. Gage:

This is in response to your letter of July 17, 1973, concerning the siting criteria applied to the Indian Point site of Consolidated Edison Company of New York.

All nuclear power plants, including those at the Indian Point site must meet various Atomic Energy Commission (AEC) regulations and criteria, including reactor site criteria, 10 CFR Part 100, before a construction permit and operating license can be granted. The suitability of each proposed nuclear power plant site is evaluated by the AEC on its own merits for conformance to these regulations and criteria. With respect to site criteria for nuclear power plants, I am enclosing a copy of 10 CFR Part 100 of the Commission's regulations which addresses such matters.

Each of the three nuclear power plants at the Indian Point site has been reviewed for compliance with these site criteria prior to issuance of the construction permits for these units. In each case it was determined that each facility met our siting criteria. For Indian Point Units 1 and 2, compliance with the siting criteria was reviewed again and found acceptable prior to issuance of operating licenses. Indian Point Unit 3 is currently undergoing review for an operating license, including a review of its compliance with the AEC siting criteria.

The nuclear power plants at the Indian Point site are constructed in accordance with stringent quality standards and engineering practices, to minimize the likelihood of failures that could lead

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to accidents. Their basic design is inherently stable and has a high tolerance for off-normal conditions, should they occur.

Despite the care that is taken to avoid failures or operating errors that potentially could lead to safety problems, the AEC believes it prudent to anticipate that some incidents will occur during the life of a nuclear plant, and to require features to cope with them. This protection is provided by reliable protection devices and systems, designed to assure that off-normal conditions will be detected rapidly and either arrested or accommodated safely. Conservative design practices, adequate safety margins, testability, and redundant detecting and actuating equipment are incorporated in protection systems to assure both their effectiveness and reliability.

Additional margins are added to the plant design to protect the public in the event of the occurrence of very unlikely accidents. These margins are assured primarily by evaluating the response of the plant to a number of hypothesized events, involving in some instances the assumption of an independent failure of a redundant protective system simultaneously with the occurrence of the accident it is intended to control. From analyses of these postulated events, a number of accident sequences, called design basis accidents, are selected as a basis for the incorporation of additional plant features and equipment for protecting public health and safety.

The calculated potential radiological consequences of these design basis accidents exceed those of all other accidents considered. The regulatory staff's evaluation of these accidents showed that the calculated doses resulting from the postulated accidents are within the 10 CFR Part 100 siting guidelines for the nuclear power plants at Indian Point.

Since you have raised questions about evacuation of people following an accidental release of radioactivity, it may be of particular interest to you to refer to 10 CFR Part 100.3(b) which defines the low population zone. Within this zone there is a reasonable probability that appropriate protective measures, such as evacuation, could be taken on behalf of its residents in the unlikely event of a serious accident. For the Indian Point site the outer boundary of the low population zone is 1100 meters (0.67 miles) and approximately 50 people reside within the zone. Emergency plans have been developed for the protection of these residents and the Commission has reviewed these plans. It has been determined that the Indian Point Emergency Plan meets the criteria of Appendix E of 10 CFR 50 and is acceptable.



L. M. ...  
 L. ...  
 J. O'Leary  
 J. Hendrie  
 E. Shagan  
 J. Cook  
 G. ...  
 M. Gross  
 Decker ...

Mr. Franklin L. Case

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In addition to the review of the safety aspects of the nuclear power plants at the Indian Point site that has been conducted by the Commission there has been public participation in the licensing of these plants. Under the provisions of the Atomic Energy Act of 1954, as amended, a public hearing on all applications for construction permits for nuclear power plants is mandatory. Such hearings have been held and many local residents, including residents of New Rochelle, Croton-on-Hudson, and several other cities within Westchester County, have expressed their feelings. These hearings were held in Montrose, New York after the AEC Regulatory staff and the Commission's Advisory Committee on Reactor Operations (ACRS) completed their safety reviews and satisfied themselves the construction of these plants at Indian Point could be undertaken without undue risk to the health and safety of the public.

On the basis of information supplied by Consolidated Edison Company of New York, the AEC Regulatory staff review, the ACRS review, and the opinions expressed by members of the public, the Atomic Safety and Health Board(s) ruled that the Indian Point site is acceptable for Units 1, 2, and 3.

Your letter and enclosed press release also mentions David's Island and Verplanck sites. The David's Island site in New Rochelle, New York was never submitted to the AEC by Consolidated Edison Company of New York for review. With respect to the Verplanck site, Consolidated Edison filed this application before the AEC completed its review of the proposed facility. Although the numerical guidelines set forth in 10 CFR part of the Commission's regulations may be satisfied even for relatively high population density sites, the AEC continues to encourage siting in low population density areas when these are available.

I hope that this letter clarifies the facts that the Indian Point site meet our regulations and criteria and that a considerable effort has been expended to assure the health and safety of the public.

Sincerely,

Original signed by  
 J. Hendrie  
 Joseph M. Hendrie, Deputy Director  
 for Technical Review  
 Directorate of Licensing

10 CFR Part 100

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