

NUCLEAR REGULATORY COMMISSION

ORIGINAL

In the Matter of:

50-440

CLEVELAND ELECTRIC ILLUMINATING COMPANY,  
(Perry Nuclear Power Plants, Units 1 & 2)

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

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In the Matter of: :  
CLEVELAND ELECTRIC ILLUMINATING COMPANY, :  
(Perry Nuclear Power Plants, Units 1 & 2.) :  
-----X

Marriott Inn  
4277 West 150th Street  
Cleveland, Ohio

Monday, June 28, 1982

The Advisory Committee on Reactor Safeguards Hearing  
in the above-entitled matter, was convened at 1:30  
o'clock P. M.

PRESENT FOR THE ACRS:

- J. RAY, Chairman
- R. AXTMANN, Member
- J. EBBERSOLE, Member
- G. QUITTSCHREIBER, Federal Designated Employee
- A. CAPPUCCI, Staff
- P. DAVIS, Consultant
- W. LIPINSKI, Consultant
- I. CATTON, Consultant

PRESENT FOR THE NRC:

1

M. GILDER

2

J. KUDRICK

3

L. MC GREGOR

4

P. SHEMANSKY

5

A. SCHWENCER

6

J. STEFANO

7

D. TONDI

8

C. WILLIAMS

9

PRESENT FOR CEI:

10

L. BECK

11

W. COLEMAN

12

M. EDELMAN

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1 MR. RAY: The meeting will now come to order.

2 This is a meeting of the Advisory Committee on  
3 Reactor Safeguards Subcommittee on the Perry Nuclear  
4 Power Plant.

5 Is there anyone in the room who can't hear me?

6 (No response.)

7 MR. RAY: Can everyone hear me?

8 (No response.)

9 MR. RAY: No answer to that, either. I guess  
10 they can.

11 (Laughter.)

12 MR. RAY: I am J. J. Ray, the Subcommittee  
13 Chairman.

14 The other A. C. R. S. Members present today are  
15 Messrs. Axtmann and Ebbersole on my immediate right.

16 We also have in attendance A. C. R. S. consultants,  
17 Messrs. Catton, Davis and Lipinski.

18 The purpose of the meeting is to continue the  
19 operating license review for the Perry Nuclear Power  
20 Plant Units 1 and 2.

21 The meeting is being conducted in accordance with  
22 the provisions of the Federal Advisory Committee Act and  
23 the Government in the Sunshine Act.

24 Mr. Gary Quittschreiber on my extreme left is a  
25 Designated Federal Employee for the meeting and Mr. Anton

1 Cappucci on my immediate left is a member of the A. C. R.  
2 S. Staff to follow this meeting.

3 The rules for participation in today's meeting have  
4 been announced as part of the notice of this meeting  
5 previously published in the Federal Register on June 3rd  
6 and June 18th of 1982.

7 A transcript of the meeting is being kept and will  
8 be made available as stated in that Federal Register  
9 notice.

10 It is requested that each speaker first identify  
11 himself or herself and speak with sufficient clarity and  
12 volume so that he or she can be readily heard.

13 I would suggest that if you are going to make a  
14 brief statement or follow up a question and there is a  
15 microphone near you, that you go to that mike.  
16 Otherwise, come up to the podium where there is a mike.

17 We have received several written statements and  
18 requests for time to make oral statements from members of  
19 the public at this time.

20 If there are any members of the public here who have  
21 not made their desires to Mr. Quittschreiber, I would  
22 like to make sure that you do it today. I ask that you  
23 see him at the first break and indicate your request.

24 We will have one statement today by Miss Klein, and  
25 I will call her to the podium when we come to a proper

1 time in the program.

2 For the record, I might say that the Subcommittee  
3 had a very interesting tour of the plant this morning and  
4 I would like to commend the staff of C. E. I. for the  
5 excellent job that they did.

6 They had it very well organized, they moved with  
7 dispatch and they were very responsive to our questions.

8 We will proceed with the meeting and I will call at  
9 this time on Mr. D. Davidson, Vice President of System  
10 Engineering and Construction for the Cleveland Electric  
11 Illuminating Company.

12 MR. DAVIDSON: Can you hear me with this?

13 MR. EDELMAN: That's not a mike for the  
14 building.

15 MR. RAY: Isn't that working?. That's a  
16 reporter's mike.

17 MR. BECK: This one works over here.

18 THE WITNESS: Now can you hear me?

19 MR. DAVIDSON: Can you hear me?

20 MR. RAY: I can.

21 MR. DAVIDSON: Okay.

22 Good afternoon. I would like to welcome the A. C.  
23 R. S. Subcommittee for their review of the Perry Nuclear  
24 Power Plant.

25 I am D. R. Davidson, Vice President of the System



1 companies. However, it is the first nuclear plant where  
2 C. E. I. has total engineering construction and  
3 operating responsibility.

4 This project was authorized in 1972 and the  
5 construction permit issued in May of 1977.

6 (Slide.)

7 The plant is located 35 miles north -- approximately  
8 35 miles northeast of downtown Cleveland on lake shore --  
9 on the lake shore.

10 (Slide.)

11 The site consists of 1,100 acres. The plant itself  
12 consists of two General Electric boiling water reactors,  
13 B. W. R. 6, two free-standing Mark 3 containment, two GE  
14 turbine generators, each with an expected net output of  
15 approximately 1,205 megawatts.

16 As you saw on your tour this morning, the plant has  
17 a number of common buildings, including radwaste, diesel  
18 generator, control complex, intermediate fuel handling,  
19 service water pump house, emergency service water pump  
20 house, the auxiliary building, auxiliary boiler building,  
21 water treatment and service building.

22 With all of these common facilities, much of the  
23 plant must be completed to support unit 1. Unit 1 and  
24 the common facilities are about 83 percent complete as of  
25 the end of June.

1           The management of the project is carried out by an  
2 integrated organization consisting of C. E. I. people,  
3 Kaiser engineers and Gilbert Associates personnel.  
4 Gilbert is our architect-engineer, Kaiser is our  
5 construction management consultant.

6           However, all project functions are under the direct  
7 management of C. E. I. employees.

8           MR. RAY: Mr. Davidson?

9           MR. DAVIDSON: Yes.

10          MR. RAY: Do you mind our interrupting with  
11 questions?

12          MR. DAVIDSON: Certainly not.

13          MR. RAY: How long have all project functions  
14 been under the complete control of your management?

15          MR. DAVIDSON: Of our company?

16          MR. RAY: Yes.

17          MR. DAVIDSON: Since the very beginning.

18          MR. RAY: From the beginning?

19          MR. DAVIDSON: Yes. CAPCO, of which we are a  
20 member, had a basic agreement that a plant could not have  
21 two people, two companies responsible for it, so we were  
22 delegated complete responsibility for the design,  
23 construction and operations.

24          MR. RAY: I haven't made myself clear. I mean  
25 from the viewpoint of what is going on at the site with

1 respect to the construction activity itself.

2 MR. DAVIDSON: Our company has been responsible  
3 for everything there, the construction, the management of  
4 it essentially since construction started.

5 MR. RAY: You have called the shots, not Kaiser?

6 MR. DAVIDSON: That's right.

7 MR. RAY: Thank you.

8 MR. DAVIDSON: Kaiser is our consultant to  
9 provide technical advice and assistance but we have all  
10 of the first-line supervision.

11 MR. AXTMANN: Has the arrangement with Kaiser  
12 not changed since 1977?

13 MR. DAVIDSON: There has been probably some  
14 minor changes since '77. When we -- when Kaiser first  
15 come in, they had a bigger role. As we built up our  
16 force, our management force -- we have decreased that --  
17 until we hired some of our people, there were some of the  
18 supervisory spots that were occupied by some Kaiser  
19 people for a while. This has changed rather until the  
20 point now where all of the basic management is ours.

21 MR. CATTON: What responsibilities does your  
22 executive vice president have other than nuclear?

23 MR. DAVIDSON: Yeah. I am about to take this  
24 up, if you want to --

25 MR. CATTON: I will wait.

1 MR. DAVIDSON: I will -- unless you want some  
2 other questions, I will go on with this.

3 The company is organized with a president, two  
4 executive vice presidents and a total of seven vice  
5 presidents.

6 I will leave the -- I will start with the -- on the  
7 left, the Executive Vice President, the first one, has  
8 responsibility for all of the financial and legal parts,  
9 activities, of the company.

10 Then we have administrative vice president, energy  
11 application service vice presidents who also report  
12 directly to the president. Then we have the executive  
13 vice president who I report to, and you have three groups  
14 there. System Engineering and Construction is my group,  
15 which consists of all of the nuclear plus at this time  
16 system planning.

17 Distribution Services Group is all of the line  
18 activities, lines and services activities, including the  
19 engineering that goes with it.

20 The Power Supply Group Vice President is, basically,  
21 the fossil plants and the engineering and operating  
22 aspects that go with that.

23 The company has about 5,200 employees total at this  
24 time.

25 And all of the company employees assigned to the

1 project are located at the plant site and consists of  
2 approximately 280 people in the project management and  
3 about 195 at this point in preparation for the operating  
4 phase for a total of 475 company people onsite.

5 (Slide.)

6 The site organization then consists of a division  
7 manager and four department managers.

8 The division manager has responsibility for the  
9 construction and the engineering and he has a vice  
10 president -- he has a manager heading up a department for  
11 engineering and for construction.

12 Also reporting to me is the nuclear quality  
13 assurance and the manager of the Perry plant.

14 The Perry Project Services reports to the vice  
15 president of administrative services. That includes  
16 purchasing and various other service activities that are  
17 required in the project -- site of this type.

18 I mentioned earlier that in addition to nuclear I  
19 currently have system planning responsibilities.

20 That will be terminated six months before fuel load.

21 That responsibility will be re-assigned to another  
22 part of the company.

23 What we have here then is an intermediate step  
24 toward the organization that will go into effect at that  
25 point.

1           We are currently proceeding with two office  
2 buildings onsite to house the staff. We intend to have a  
3 -- our support staff permanently onsite.

4           One of these office buildings will house the  
5 training facilities and the emergency operating center  
6 and the other will be an office facility that will handle  
7 all of the support staff.

8           This afternoon and tomorrow we have several people  
9 making technical presentations according to topics  
10 requested in your meeting agenda. These people, along  
11 with a brief resume, will be introduced as the program  
12 proceeds.

13           I would like to introduce at this time the key  
14 management people who will be making organization and  
15 management presentations and coordinating the technical  
16 presentations later.

17                           (Slide.)

18           The first of these is Murray Edelman, our Manager of  
19 the Nuclear Construction and Engineering Division. He  
20 has a B. S. Degree in Mechanical Engineering from Case  
21 Institute and a Juris Doctor Degree from Baldwin Wallace.  
22 He held various engineering assignments with the company,  
23 chiefly in civil and mechanical engineering, later became  
24 manager of quality assurance and then manager of the  
25 engineering -- of nuclear engineering before he assumed

1 his present assignment.

2 (Slide.)

3 Second we have Ron Farrell, who is the manager of  
4 quality assurance. He has a B. A. in Business  
5 Administration and an M. B. A. in Industrial Management.  
6 After a number of assignments in industrial engineering  
7 he was supervisor of procedures and records in nuclear  
8 engineering and then manager of the Perry Project  
9 services before he assumed his present position of  
10 manager of quality assurance.

11 (Slide.)

12 We have John Waldron, who is manager of the Perry  
13 plant. He has a Bachelor of Mechanical Engineering  
14 Degree and after a number of engineering assignments he  
15 was assigned to various positions in our fossil plants.  
16 In 1974 he was assigned as plant manager of the Perry  
17 plant and has participated in preparing the staff and the  
18 organization for the operating phase of the plant.

19 (Slide.)

20 Finally, we have Larry Beck, who is general  
21 supervising engineer in nuclear licensing and fuel  
22 management. He has a Bachelor of Science in Electrical  
23 Engineering from Purdue University, M. B. A. from Case  
24 Western Reserve University, and after a number of  
25 assignments in civil and mechanical engineering he is the

1 senior project engineer and was before assuming his  
2 present position.

3 We hope this will be a productive meeting and that  
4 you will reach the same conclusion as we have, that Perry  
5 is now at the point in the licensing where a full-power  
6 A. C. R. S. letter is appropriate.

7 Thank you. If you have any questions, further  
8 questions, I will be happy to undertake them.

9 MR. AXTMANN: Is there anyone on your staff that  
10 has formal education in either physics or nuclear  
11 engineering?

12 MR. DAVIDSON: Yes, I think we have both; and I  
13 think we will get into the details.

14 I think you will cover that, Mr. Edelman. Mr.  
15 Edelman will cover it when he gets into nuclear  
16 engineering.

17 MR. AXTMANN: But they are all below the level  
18 that you have discussed so far?

19 MR. DAVIDSON: That's right.

20 MR. RAY: Are there any other questions?

21 (No response.)

22 MR. RAY: Okay. We will hear at this time a  
23 report by the N. R. C. Staff, and the initial statement  
24 will be by the project manager, N. R. C. s staff project  
25 manager, John Stefano.

1 MR. STEFANO: Can everybody hear me?

2 (No response.)

3 MR. STEFANO: Can everybody hear me?

4 I am happy to have this opportunity to represent the  
5 Nuclear Regulatory Commission in this proceeding.

6 I would like to extend my appreciation to the A. C.  
7 R. S. Subcommittee, to the C. E. I. staff that are here,  
8 to members of other utilities that I understand are in  
9 the audience today here witnessing this operation and  
10 also to the public.

11 Before I proceed I would like to produce several  
12 members of the N. R. C. Staff that are here with me to  
13 assist in making this presentation and addressing  
14 questions you may have.

15 First is Mr. Al Schwencer, who is the chief of  
16 licensing, Branch 2, and he is my superior at this point.

17 Next we have Mr. Paul Shemansky, who is from our  
18 equipment qualification branch. We have Mr. Jack  
19 Cudrick, who is from our containment systems branch. Mr.  
20 Dominic Tondi, from our human factors engineering branch  
21 and Mr. Eric Peterson from our licensing qualification  
22 branch.

23 Tomorrow we will have a representative from the  
24 instrument and control systems branch, Mr. Jerry Mouck.  
25 He will be available for the C. E. I. presentation on I.

1 N. C. that is on the agenda.

2 From our Region 3 Staff and the person who will be  
3 addressing the I. E. Report Item 3-D on the agenda is Mr.  
4 Cordell Williams. With Mr. Williams is Mr. Wayne  
5 Schaeffer, Mr. Len McGregor, all from the Region 3 office  
6 in Chicago; and we have Mr. Max Gildner also from the  
7 Region 3 Staff who is the resident inspector at the Perry  
8 site.

9 (Slide.)

10 As the first item on the agenda, this slide  
11 represents the key dates in the licensing process that  
12 have been completed to date and, also, a few dates which  
13 are still to be met, which occur in the future.

14 I just would like to point out to you the June 23rd  
15 date, which is when the application for construction of  
16 Units 1 and 2 was received and docketed. The May 3rd  
17 date, which is when the construction permits were issued  
18 as C. P. P. R. 144 units for Units 1 and 2 respectively.

19 The January 30th date for when the final safety  
20 evaluation analysis report was docketed under the  
21 operating licensing phase.

22 The next date would be May of '82, when we issued  
23 the S. E. R., which is subject of review today.

24 In August of '82 we plan to issue a supplement to  
25 the O. L., not the O. C., hopefully about the first week

1 of August, at which time we will have had an opportunity  
2 to address some of the open confirmatory issues which we  
3 will discuss later on with you.

4 The next date would be November, '82, which is the  
5 current scheduled date for the A. S. L. B., which is the  
6 Atomic Safety Licensing Board hearing, and it is  
7 scheduled to begin at that time. Of course, that is  
8 subject to either change depending on A. C. R. S.  
9 Committee Report submittal and so forth to that board.

10 November, '83, is the current estimated fuel date  
11 for Unit 1 that has been given to us by the Applicant,  
12 and I will intersperse Applicant and C. E. I. -- it's the  
13 same thing -- throughout my talk.

14 Are there any questions so far on this?

15 (No response.)

16 I need the slide. Get it.

17 The next item on the agenda deals with the .  
18 comparison of the Perry Nuclear Power Plant with other  
19 similar B. W. R. 6 reactors. These units, Clinton --  
20 which I understand is one unit -- and Grand Gulf, are  
21 licensing cases which have been already brought to the A.  
22 C. R. S. and are further along in the licensing process.

23 I think it's significant to note in terms of Perry  
24 -- well, let me just say this. As far as Perry is  
25 concerned, it is relatively identical to Clinton and

1 Grand Gulf in overall design.

2 The specific points of highlight here is the  
3 containment, all of which are marked 3, as well as for  
4 Perry, but Perry is unique in that it has a free-standing  
5 steel vessel supported by steel lined reinforced concrete  
6 foundation. The Clinton and Grand Gulf are steel lined  
7 concrete reinforced structures, and I believe the A. C.  
8 R. S. Subcommittee has had an opportunity to take some  
9 look at that even though you couldn't see much with all  
10 that is in there.

11 Let's see now. The other point I would like to make  
12 here regarding Perry is that this will be the first, we  
13 believe in this country, operational 238-inch reactor,  
14 vessel diameter reactor. It falls inbetween Grand Gulf,  
15 which is a 218 inch and Grand Gulf which is a 251 inch.

16 As a result, in accordance with REG-GUIDE 1.20, the  
17 Applicant is going to have to do a and perform a  
18 prototype reactor vessel test. They have yet to provide  
19 a full, complete program for that and that is one of our  
20 confirmatory items, which we will get into later.

21 As far as the movable control records, I just want  
22 to point out in that regard that it is 177, I believe  
23 that was an error in the S. E. R., which showed it at  
24 117.

25 And that's really all, I think, I would really like

1 to address on this slide, unless there are some  
2 questions.

3 (Slide.)

4 Next on the agenda we have an explanation,  
5 hopefully, which will be be satisfactory to you as to  
6 what we mean when we say outstanding issue in the S. E.  
7 R., what we mean when we say confirmatory items, what we  
8 mean when we say licensing condition or condition for  
9 license, as you will, and what we mean by technical  
10 specifications.

11 I have attempted here to give a brief definition of  
12 each of these. I would just like to amplify briefly on  
13 them.

14 As an outstanding issue, what we really mean there  
15 is that the Applicant either hasn't provided the Staff  
16 with sufficient information, has not completed his  
17 design, has not completed any of his test programs in  
18 accordance with established requirements to the extent  
19 where the Staff has that feeling that it is an acceptable  
20 thing. We still need them, so we have -- I highlighted  
21 those as open, outstanding issues.

22 In the case of Perry, we have 19 of those and I will  
23 summarize those when we get to those, to that area.

24 MR. RAY: Mr. Stefano?

25 MR. STEFANO: Yes, sir.

1 MR. RAY: The fact that they are labeled  
2 "outstanding" doesn't mean there is a disagreement  
3 between the Staff and the Applicant, does it?

4 MR. STEFANO: In most cases, no. There is one  
5 area where I think we have that and I will highlight that  
6 one, sir.

7 MR. RAY: Thank you.

8 MR. STEFANO: In terms of the confirmatory  
9 issues, we have 49 of those. Now, here what we are  
10 really saying is that the Applicant has submitted enough  
11 preliminary information in regard to his conceptual  
12 design, he has documented up to a certain point in time  
13 where the Staff has a warm feeling that, hey, he  
14 understands what he is doing, he is going to meet those  
15 requirements. We still really need a few more pieces of  
16 information. We still need to go out and audit the  
17 facility, maybe. We need to audit a test before we can  
18 really say it's closed.

19 In discussing those, I have further qualified and  
20 distinguished between the 49, some of which are long  
21 range, some of which are short term and I will explain on  
22 a separate slide what those mean.

23 In terms of licensing conditions, this is really  
24 somewhat of a misnomer but it's the way it is titled in  
25 the S. E. R. There are actually 15 licensing conditions

1 or conditions for licenses and actually they are mixed.  
2 Let me explain that.

3 There are six items which are listed in the S. E.  
4 R. which the Staff feels are significant enough that they  
5 have put on them a condition for license, which is to say  
6 that they must be resolved before the low-power license  
7 will be issued.

8 You can probably call them an add-in to the  
9 confirmatory list of items. However, the Staff has  
10 chosen in their deliberations as a judgment to really say  
11 that, hey, we really need these things done before and  
12 they have identified six of those.

13 The other nine are areas where because the Applicant  
14 is going for low-power license, they are things which are  
15 not resolved but which can be resolved much later than  
16 the low-power license date, which, hopefully, will be  
17 November or December of '83, and we have listed nine of  
18 those.

19 I have a summary of those -- by the way, I failed to  
20 mention this. Tony, I have provided handouts of this;  
21 and I hope each one of you have a copy of that. You can  
22 refer to that. I do not have slides of every single one  
23 of those pages. Don't get worried. We are not going to  
24 go through 42 slides on this thing; but those are the  
25 nine, those are nine and they are also cited and they are

1            asterisked, by the way, in the S. E. R. to distinguish  
2            those from the conditions of the license. Then we have  
3            the technical specifications which are really in a sense  
4            N. R. C. specifications and those very clearly spell out  
5            specific design features, conditions, characteristics of  
6            the governing plant operations that cannot be changed  
7            without the Applicant or utility coming back and asking  
8            us to change them or showing and justifying why they  
9            should be changed.

10            Perry intends to use many of the standard B. W. R.  
11            6 technical specifications which I understand that the  
12            Committee has already looked at on other plants, such as  
13            Clinton and Grand Gulf. There are six additional ones  
14            which we have identified in 6-16 of the S. E. R. for  
15            Perry. That, by no means, is the final list. There  
16            probably could be more as the review process continues.

17            (Slide.)

18            Next on the agenda here we have what we call the  
19            outstanding issues, and here I have just titled those in  
20            keeping with the intent of the agenda, which is to  
21            summarize principal review issues. I ask your indulgence  
22            in allowing me to concentrate on just a few of these  
23            rather than go through all of them.

24            However, we are prepared to discuss any questions  
25            you may have on all 19.

1           The ones that I would like to hit first as a primary  
2 one is the one dealing with containment systems, their  
3 recent Mark 3 containment issues which were brought to  
4 the attention of the Staff just prior to release of the  
5 S. E. R. This is an area where I understand either later  
6 on today or is it tomorrow in the agenda the Applicant  
7 will be giving you a status review. These things were  
8 addressed to Grand Gulf design, not specifically to  
9 Perry. However, we have requested Perry to address those  
10 to us.

11           I will get into that briefly but I want to hit that  
12 one first.

13           And then coupled with that there are two more  
14 containment issue open items which deal with pool dynamic  
15 loads and containment purge. Then from there I would --  
16 and those, by the way, are identified on pages 13, 14 and  
17 15 in your handout.

18           After we do the containments, I would like to then  
19 go to the P. G. C. C. system fire protection in the  
20 control room, which, Mr. Ray, is one area that I believe  
21 you asked about that is in controversy at this point in  
22 time.

23           Then I would like to go to the equipment  
24 qualification -- by the way, let me backtrack a bit  
25 there.

1           The P. G. C. C. system summary is on Page 21 of the  
2           handout.

3           Then I would like to go to the equipment  
4           qualification item, which is Item 4, and it's identified  
5           as marked up there.

6           After that I would like to then hit the control room  
7           design assessment, Item 7, which is on Page 12, E. Q. V.  
8           is on Pages 8 and 9, by the way; and then, finally, as  
9           another key issue, I would like to hit the last one,  
10          which is emergency preparedness plans, which is Item 19,  
11          and the summary may be found on Page 25 of the handout.

12          Are there any objections to that?

13                 MR. EBBERSOLE: Let me ask a basic question?

14                 You indirectly said we are going for a low-power  
15                 license. I haven't as yet run into a positive explicit  
16                 situation which is going for something like 5 percent.

17                 Is this what we are after?

18                 MR. STEFANO: I believe that's what we are  
19                 after.

20                 MR. EBBERSOLE: Is that solely, explicitly  
21                 stated anywhere and I just didn't read it?

22                 MR. STEFANO: I am not aware of it but that has  
23                 been my understanding.

24                 MR. EBBERSOLE: It's of great concern going from  
25                 5 percent, which is when you trip off. You have

1 virtually nothing left.

2 MR. STEFANO: I understand.

3 MR. EBBERSOLE: And so I just want to make it  
4 clear. 5 percent period?

5 MR. STEFANO: The tone of the evaluation as it  
6 has been conducted by the Staff and the responses that  
7 were received from the Applicant are such that I would be  
8 led to believe that that's what we are assuming

9 MR. EBBERSOLE: Fine, it makes life a lot  
10 simpler.

11 MR. CATTON: In the one piece of paper that I  
12 got there was some concern expressed by the N. R. C.  
13 Staff about the C. E. I. management.

14 Is there any place you are going to tell us about  
15 that?

16 MR. STEFANO: The C. E. I. management are  
17 actually confirmatory items. They are not outstanding  
18 issues at this point. This was -- at least this is the  
19 way the evaluation was received from our Region 3 Staff  
20 that principally did this evaluation, judgment and  
21 licensing qualification branch.

22 Now, there are some questions regarding the  
23 management, you are correct, I am not saying that;  
24 however, none of those were identified as outstanding  
25 issues that fall within these 19 categories. They fall

1 within the 49 categories.

2 MR. CATTON: I would like to hear briefly about  
3 those in terms of resolution, if it's okay with the  
4 Chairman.

5 MR. STEFANO: If you will permit me, could we  
6 hold that until we get to the permit.

7 MR. CATTON: Certainly.

8 MR. STEFANO: Thank you.

9 Are there any further questions or objections to  
10 going with the approach that I want to go into, the ones  
11 that I want to highlight?

12 MR. RAY: Having listed what you are going to  
13 highlight and not including Item 2, the seismic system  
14 and subsystem analysis implies to me that there are no  
15 areas of concern left with the Staff as to the seismic  
16 qualifications and adequacy of the design of the Staff.

17 Am I reading too much into that?

18 MR. STEFANO: Yes, I think you are, Mr. Ray. I  
19 am not implying here that none -- any one of these are in  
20 any sequential order of importance here. No. 1, they are  
21 all equally of concern to the Staff; but because of the  
22 time constraint here, I thought we would at least like to  
23 highlight those particular issues that I have identified.

24 MR. RAY: Okay. Now, if we have time at the end  
25 of our highlighting, can you address Item 2?

1 MR. STEFANO: I will attempt to address that,  
2 yes.

3 MR. RAY: Thank you.

4 MR. STEFANO: All right. Without further a due,  
5 I will go to Page 12, which is this item here, and I will  
6 leave the pencil there so that everybody in the room can  
7 see what we are talking about, at least the item that we  
8 are talking about.

9 (Indicating.)

10 You will find on Page 12 basically -- I am sorry.  
11 It should be Page 13.

12 We have been identified to us by a Mr. J. M.  
13 Humphrey, who is a former employee of General Electric,  
14 were involved in the Stride and GESSAR projects who is  
15 now starting his own consulting business out in  
16 California, several issues which were directed at the  
17 Grand Gulf licensee. We have had meetings with Mr.  
18 Humphrey and we have had meetings between Mr. Humphrey,  
19 the N. R. C., G. E. and the Staff. There are transcripts  
20 of those meetings. I do not have them with me but I can  
21 get them for you.

22 At that meeting several of the other utility  
23 representatives were there, including Perry. We have  
24 since asked Perry to, in a letter dated June 23rd, that  
25 recent, to address the issues and the impact, if any, on

1 Perry. I understand that the Applicant is going to be  
2 presenting a status report as part of agenda Item 4-C-1.

3 On May 27th -- basically, what we are attempting to  
4 do here is not to try to resolve those. I don't know  
5 what all of those are at this point in time or the depth  
6 or the extent to which they would pertain to Perry. What  
7 we need to do with the Applicant's assistance and further  
8 discussion and review by our containment systems staff of  
9 what the issues really are, we need to come up with a  
10 plan of resolution at this point, and that plan will  
11 include what the review will be and it will be a  
12 schedule, as I understand it, put together which will  
13 attempt to resolve as many of these as is necessary to --  
14 prior to fuel load of Unit 1.

15 Are there any questions on that particular issue?

16 MR. AXTMANN: I have a question having just read  
17 the response from Grand Gulf, who, as I recall, Mr.  
18 Humphrey had 22 objections and another 56 sub-objections  
19 -- excuse me, another number for a total of 59  
20 objections; and the Grand Gulf response was that all 59  
21 of them were absolutely wrong, a subject which is not  
22 credible.

23 MR. STEFANO: I have Mr. Jack Cudrick here from  
24 our containment systems here.

25 With your permission, I would like him to address

1 your questions.

2 Jack.

3 MR. KUDRICK: Jack Kudrick, N. R. C. Staff.

4 The issues that have been raised by Mr. Humphrey --  
5 I would like to go back just a little bit -- were areas  
6 that were currently under way at General Electric at the  
7 time Mr. Humphrey was an employee of General Electric and  
8 it was specifically on the Stride package or the generic  
9 GESSAR package. When he left the G. E. employ, he  
10 contacted M. P. & L., which is the Applicant for Grand  
11 Gulf, and indicated that he would like to discuss these  
12 particular issues that he had been working on with M. P.  
13 & L. as it relates to Grand Gulf. He was not aware of  
14 any direct relationship between the Stride package and  
15 Grand Gulf, but he wished to discuss those to make sure  
16 that there were no open safety issues associated with  
17 Grand Gulf, since Grand Gulf was the lead Mark 3.

18 We have since been involved in discussions with both  
19 M. P. & L. and Mr. Humphrey and we currently are  
20 discussing or planning a generic presentation with the A.  
21 C. R. S. some time in the future, next month. I believe  
22 it is relative to a detailed discussion on these  
23 particular issues.

24 We have since sent those issues to Perry so that  
25 Perry could also address those same issues as they

1           pertain to Perry.

2           I don't know whether I have answered your particular  
3 question or not.

4           MR. AXTMANN: Well, I gather from this that the  
5 Staff has made no judgment whatsoever on the controversy;  
6 am I right?

7           MR. KUDRICK: No, that is not true. We have  
8 evaluated the responses of M. P. & L. and feel that  
9 sufficient information has been presented by M. P. & L.  
10 to allow them to continue their licensing process, and  
11 that being a 5 percent license.

12           So we have gotten to the point where we don't feel  
13 that, relative to Grand Gulf, that there are any  
14 significant issues that would stop the licensing process.

15           That is not to say that we have completed our  
16 review, but we have their initial assessment of each of  
17 the individual concerns that have been raised and are  
18 satisfied that they, at least, have a systematic program  
19 toward final resolution. That final resolution is in  
20 line with a full power license.

21           Since Perry is very similar to Grand Gulf, as  
22 indicated earlier, we believe that it is reasonable to  
23 draw a similar conclusion on Perry. However, at this  
24 time we haven't had any detailed discussions with the  
25 Applicant to assure that that situation does exist on

1 Perry.

2 MR. AXTMANN: I guess I understand. If I do, it  
3 seems that Mr. Humphrey was not addressing either of  
4 these two designs very carefully.

5 MR. KUDRICK: Well, he was not involved in  
6 either one of these two designs. He was involved in the  
7 Stride package, which is the generic GESSAR package.

8 He thought that there was applicability and there  
9 is, indeed, applicability of the particular concerns that  
10 he had been associated with GESSAR, and that is why he  
11 contacted M. P. & L. and for the same reason that we have  
12 transmitted those particular issues to the Perry  
13 Applicant.

14 There are applicable concerns on -- that should be  
15 addressed and will be addressed on the Perry docket; but  
16 the concerns were specifically directed towards his  
17 effort associated with the Stride package.

18 MR. CATTON: But both Perry and Gulf are Mark 3  
19 containments.

20 MR. KUDRICK: That is correct.

21 MR. CATTON: So his concerns are really the Mark  
22 3 containment; right?

23 MR. KUDRICK: That is right.

24 MR. CATTON: So it's pretty close.

25 MR. KUDRICK: That is right. That is why it's

1 being pursued on not only Grand Gulf and Perry but all  
2 Mark 3's.

3 MR. RAY: I would like to pursue that point, Mr.  
4 Stefano. I would like to give you my interpretation and  
5 get the support for it from what you have said.

6 You are attacking this problem as a generic problem.  
7 That is, it's a problem of generic nature that is  
8 inherent in the Mark 3 design and not attributing it to  
9 these or any other procedure of either Grand Gulf or  
10 Perry? They are involved, I understand that.

11 MR. STEFANO: Yes, yes.

12 MR. RAY: But it's a problem that is common to  
13 this type of plant, whether it's going to be these two or  
14 others that may come down the line.

15 MR. STEFANO: That is right.

16 MR. RAY: You say you are going to take this up  
17 with the A. C. R. S. within a month. I hope that is  
18 going to be with a Subcommittee of A. C. R. S. that is  
19 expert in this area.

20 MR. KUDRICK: That is correct. That is Dr.  
21 Plaset's fluid hydraulics subcommittee meeting.

22 MR. QUITTSCHREIBER: Scheduled for a week from  
23 tomorrow.

24 MR. RAY: Thank you.

25 MR. AXTMANN: Would a possible scenario be that

1 these two plants might be on 5 percent limits for an  
2 extended period of time as the generic issue -- see how  
3 many unresolved generic issues there are?

4 MR. KUDRICK: Certainly we don't anticipate  
5 that. Especially with respect to Perry which has a fuel  
6 load date of 1984 -- November of '83.

7 MR. AXTMANN: Uh-huh.

8 MR. KUDRICK: We certainly plan to resolve that  
9 long before that.

10 MR. AXTMANN: Thank you.

11 MR. STEFANO: Does that then --

12 MR. RAY: Right.

13 MR. STEFANO: Thank you.

14 The next item, pool dynamic loads, which are  
15 summarized on Page 14 of the handout.

16 Essentially, what we are really asking the Staff  
17 here to do is to -- well, the Staff has provided -- let  
18 me backtrack.

19 The first paragraph summarizes what is said as does  
20 the second paragraph what is already stated in the S. E.  
21 R. We are not introducing anything new here.

22 I think the point I really wanted to stress by way  
23 of status on this item is that the Staff is in the  
24 process of documenting their findings, of studying the  
25 results of the G. E. test analysis on the test action

1 plan B-10 and A-39 and as soon as they have completed  
2 this, we will direct the Applicant to do a plant specific  
3 analysis to those criteria, to those acceptance criteria.

4 I don't have at this point in time an idea as to  
5 when we will be doing that but I understand in talking  
6 briefly with the Staff before I left yesterday that this  
7 will be within the next month or so.

8 MR. CATTON: Are there any big differences  
9 between Perry and Grand Gulf in this regard? Specific.

10 MR. STEFANO: None that have been identified to  
11 me.

12 Jack, is there anything that you know of?

13 MR. KUDRICK: With respect to the criteria that  
14 we will be considering for Perry, those criteria are  
15 identical to the Grand Gulf criteria that you have  
16 already heard.

17 MR. CATTON: Thank you.

18 MR. STEFANO: Fine. The third one dealing with  
19 containment is containment purge. Again, we are  
20 summarizing essentially what is in the S. E. R. in the  
21 first paragraph.

22 The thing I would like to point out here is that the  
23 issue is not with the design of the purge valves in terms  
24 of this particular item. It is in how the -- in the need  
25 to use the purge valves almost on a continuous basis as

1 has been proposed by the Applicant. It appears that what  
2 they are doing is using this for temperature-humidity  
3 control. While we recognize that form of that must be  
4 done, we really need them to justify why they have to do  
5 this continuously and we have asked them specifically to  
6 give us a realistic on the number of hours per year that  
7 purging is expected through each purge valve and justify  
8 the need for the purge. We have not received that  
9 information.

10 MR. CATTON: What size break do they have to get  
11 during purging in order to get to the pressure isolation  
12 signal?

13 MR. STEFANO: Jack, can you respond to that?

14 MR. KUDRICK: Well, the scram signal is a 2 p.  
15 s. i. dry-well pressure signal. All breaks will generate  
16 a 2 p. s. i. signal. That's just one of the scram  
17 signals, by the way.

18 MR. CATTON: While purging?

19 MR. KUDRICK: That would be independent of  
20 purging, because the break inside the break-well dry-well  
21 will be isolated from the containment until you clear  
22 your vents.

23 MR. CATTON: Okay.

24 MR. DAVIS: Do you have in mind a number that  
25 would be acceptable for the length of time per year that

1 the system could be in operation and is there a basis for  
2 it?

3 MR. STEFANO: I am not aware of any number at  
4 this point in time.

5 Jack, are you aware of anything?

6 MR. KUDRICK: There is no absolute number. The  
7 intent is to minimize the time purging is used in that  
8 containment. So we will be pursuing the philosophy that  
9 they intend or the criteria they intend to impose upon  
10 the plant as to when purging will be used; and that's the  
11 issue that is still open, is that bases upon which they  
12 decide when to purge and when not to purge.

13 MR. LIPINSKI: It's really a risk question,  
14 isn't it?

15 MR. KUDRICK: Yes.

16 MR. STEFANO: Yes.

17 MR. LIPINSKI: The reliability of closing these  
18 purge valves in the accident case versus having them  
19 closed begin with.

20 MR. STEFANO: That is correct. We would like to  
21 see them closed, it ensures integrity, plus we are  
22 talking about an 18-inch valve here and the time to close  
23 an 18-inch valve, the time delay that might be involved  
24 there could be a factor.

25 MR. LIPINSKI: These -- well, these valves are

1 qualified to close against pressure as postulated.

2 MR. STEFANO: Yes, they are.

3 MR. LIPINSKI: What is the closure time?

4 MR. KUDRICK: Five to ten seconds.

5 MR. STEFANO: Something like that, five to ten  
6 seconds.

7 MR. LIPINSKI: Has somebody done a reliability  
8 analysis to try to determine the probability that these  
9 valves won't close?

10 MR. STEFANO: I am not aware of any that have  
11 been done. The Applicant -- perhaps they might be able  
12 to better address that information.

13 MR. LIPINSKI: So there is no engineering  
14 judgment on your -- to prefer to have them closed as  
15 opposed to having them operate when demanded?

16 MR. STEFANO: That is correct. We would prefer  
17 to see them closed, yes.

18 MR. EBBERSOLE: Let me ask a question. These  
19 valves are in the wall of the containment, which is  
20 really the air space of the wet-well.

21 MR. STEFANO: I believe so.

22 MR. EBBERSOLE: They are not in any way  
23 connected with the dry-well; is that correct?

24 MR. STEFANO: That is what I understand.

25 MR. KUDRICK: That is correct.

1 MR. EBBERSOLE: So they are inherently protected  
2 by the surplus fuel flow process from what is normally a  
3 assault of water and stinging and debris and so forth.

4 MR. KUDRICK: That is correct.

5 MR. EBBERSOLE: So it's considerably rigorous  
6 environment than it would be in a P. B. R., for instance.

7 MR. KUDRICK: Yes.

8 MR. EBBERSOLE: Thank you.

9 MR. RAY: It isn't clear to me yet as to whether  
10 or not the Applicant at this time has made up its mind --  
11 their mind -- that they would like continuous purging or  
12 whether they would like to keep open the option to do  
13 that at a future time.

14 Are you clear on which is the desire?

15 MR. STEFANO: My understanding is it's their  
16 desire to do the continuous purge.

17 MR. RAY: To initiate an operation with  
18 continuous purging.

19 MR. STEFANO: Yes.

20 MR. RAY: Well, can the Applicant at an  
21 appropriate time in their presentations give us an idea  
22 of what you think the benefits of such continuous purging  
23 would be?

24 (Indicating.)

25 MR. STEFANO: Any other questions on that

1 particular item?

2 (No response.)

3 MR. STEFANO: I have been good in moving this  
4 back and forth for members of the public, if you will  
5 bear with me on this, this is my first time on this.

6 The next item --

7 MR. EBBERSOLE: Pardon me.

8 MR. STEFANO: I am sorry.

9 MR. EBBERSOLE: Before you go to the next, the  
10 open containment valve would result in a condition in a  
11 large LOCA where you would loose the atmospheric fraction  
12 in the containment before you get them closed; wouldn't  
13 you?

14 MR. STEFANO: I am not sure, John.

15 MR. EBBERSOLE: You said 10 seconds, 11 seconds.  
16 What you are going to lose is air.

17 MR. KUDRICK: Yes, a small fraction.

18 MR. EBBERSOLE: Large fraction?

19 MR. KUDRICK: A very small fraction.

20 MR. EBBERSOLE: Very?

21 MR. KUDRICK: Yes. This is over a  
22 million-cubic-foot containment. There are 18-inch  
23 valves, five to ten seconds, it's an extremely small  
24 fraction of the air that would be --

25 MR. EBBERSOLE: What is the terminal pressure

1 that the valves would see in the course of this?

2 MR. KUDRICK: It would be approximately 3  
3 pounds.

4 MR. EBBERSOLE: Okay. Thank you.

5 MR. STEFANO: Thank you, Jack.

6 The next item we would like to highlight here is the  
7 P. G. C. C. system, fire protection in the control room,  
8 which is on Page 21.

9 What I have attempted to do here is to very briefly  
10 highlight the Applicant's position and the Staff's  
11 position regarding this issue, and the issue is bottom  
12 line whether we use CO2 in the P. G. C. C. system or  
13 halon.

14 As you saw this morning, and I think we had some  
15 discussion or description of the system by the control  
16 room people this morning in our site tour -- Perry uses a  
17 P. G. C. C. which for the benefit of the people is a  
18 power generation control complex design, which contains a  
19 low-pressure manually-activated carbon dioxide system for  
20 potential fires in those sections.

21 The Staff takes exception with the use of CO2 in  
22 that it has not been tested and approved as a suppressant  
23 agent in P. G. C. C. system. CO2 may leak from the P.  
24 G. C. C. underfloor due to accidental activation  
25 resulting in a toxic environment, injuring the operators

1 and forcing control room evacuation, even in a non-fire  
2 situation, that is the main, and the ability of the CO2  
3 to control deep-seated fires is in question. We are not  
4 aware of any test data where that has been shown.

5 The Applicant's position is that back during the C.  
6 P. stage, I think as they explained to you this morning,  
7 we agreed to a CO2 system and that's the system that is  
8 in there right now. CO2 meets the national fire  
9 standards as they have designed the system. The leak  
10 rates attainable, which are 3 to 4 percent maximum, are  
11 acceptable, although I must point out I believe in  
12 REG-GUIDE 1.78 requires a maximum of 1 percent. They  
13 haven't addressed that point.

14 Alarms in the control room to detect CO2, I think  
15 they pointed out where they probably would be located.  
16 They have portable life-support equipment installed in  
17 case the people in the control room need to have that  
18 kind of equipment and there are remote means for shutting  
19 down the panel if you have to evacuate the place. We did  
20 see the remote panel that is available for doing that.

21 In response to an appeal -- by the way, these points  
22 were brought out by the Applicant in an appeal letter to  
23 N. R. C.

24 In response to that appeal letter we submitted a set  
25 of concerns specifically which I have highlighted to you

1 in some more detail in a letter dated June 9th, and what  
2 we have asked the Applicant to do is to look at those  
3 concerns and when they feel they are ready, sit down and  
4 meet with us. we would be happy to sit down and go point  
5 for point over each one of our concerns and, hopefully,  
6 try to resolve this matter once and for all.

7 This has been, as I pointed out, a long-standing  
8 go-around on this thing. We have had many, many meetings  
9 on this. We have had many pieces of correspondence back  
10 and forth on this one; and I would think that this at  
11 least from the Applicant's standpoint would probably be  
12 one of the most major of the open items right here. I am  
13 really not certain at this point in time where we are  
14 going to go with this. That's where we are.

15 MR. EBBERSOLE: May I ask a question?

16 MR. STEFANO: Yes, sir.

17 MR. EBBERSOLE: The remote shutdown center is by  
18 it's nature a very spartan system, containing a minimum  
19 of equipment, one channel which is actually integrated  
20 and another which is out on the boards for shutting the  
21 plant down.

22 The presence of this CO2 suggests that the challenge  
23 frequency of the shutdown system, the remote shutdown  
24 system, is going to be maybe 10 to 100 times higher than  
25 previously anticipated, because of the operation of CO2,

1           whereas it used to be that you would burn down the  
2           control room, which will probably never happen in the  
3           life of the plant.

4                     Is the quality level, I would like to ask for the  
5           record, of the remote shutdown system consistent with the  
6           presence of the CO2 and the likelihood that it will  
7           inadvertently operate?

8                     MR. STEFANO: Our staff has no problem within  
9           the design of the --

10                    MR. EBBERSOLE: I think it's good enough for the  
11           ten-fold or hundred-fold increase in its use.

12                    MR. STEFANO: Specifically in terms of of  
13           answering that Stefano question, I am not able to answer  
14           that.

15                    MR. EBBERSOLE: If you follow me?

16                    MR. STEFANO: I can tell you that to the extent  
17           that the evaluation was presented in the S. E. R., that  
18           was not raised.

19                    MR. EBBERSOLE: Well, it is a very spartan  
20           system and it's put there for a once-in-a-lifetime case.

21                    MR. STEFANO: I think the main concern, though,  
22           sir, is not so much the need for during a fire but that  
23           it could be accidentally activated by some seismic event  
24           or something of that nature. You know, the name of the  
25           game is you want to keep people in the control room.

1 Here we don't have a fire and it's an uninhabitable  
2 place. We don't want to use the remote valve, that's the  
3 main thing. We want to stay in the control room.

4 MR. EBBERSOLE: You can, you can make the remote  
5 shutdown center a lot better and it would relieve that.

6 MR. RAY: Mr. Stefano, it isn't clear to me what  
7 transpired to make you change your mind. At one point  
8 you were satisfied with the CO2. What happened to  
9 philosophically change your viewpoint?

10 MR. STEFANO: Apparently, the Staff did a review  
11 of P. P. C. G. systems and there are I understand several  
12 S. E. R.'s that have been written for specific P. P. C.  
13 G. systems. Basically, what it tells you by the P. P.  
14 C. G. systems, these are the criteria. There were some  
15 tests done. I believe the tests were done to test out  
16 certain insulation in a fire situation where they used  
17 halon. They found out halon, No. 1, addressed  
18 deep-seated fires very well, with satisfaction, and it  
19 turned out that it wasn't as toxic as we thought it was.  
20 I think the concern with the initial standpoint is this  
21 would be a carcinogenic to the people in the room. I  
22 think information that has come to the attention of the  
23 Staff since that point in time have changed their mind on  
24 it, basically.

25 Our main concern here is not so much they can't use

1 halon, they can't use CO2. Our main concern is, is this  
2 plant going to be inherently safe using CO2? I think the  
3 concerns which the Staff has put together will once and  
4 for all put this to bed. How that's -- how they react to  
5 the responses from the Applicant, I have no way of  
6 telling you at this point. It's a very testy matter.

7 MR. RAY: What you are saying is newer  
8 information indicated there was a substitute for it that  
9 would have benefits?

10 MR. STEFANO: Yes, sir.

11 MR. RAY: Thank you.

12 MR. STEFANO: You are welcome.

13 Yes, sir.

14 MR. DAVIS: A couple of quick questions, if I  
15 might.

16 The system, as I understand it, has two separate  
17 detection modes, both high-temperature and combustible  
18 products.

19 MR. STEFANO: Yes.

20 MR. DAVIS: Can the system be manually actuated  
21 in the absence of either of those signals?

22 MR. STEFANO: I understand that it's designed to  
23 be manual activated. Is that correct, Bill?

24 MR. COLEMAN: Yes, sir.

25 MR. DAVIS: But the signals aren't permissive?

1 MR. STEFANO: Yes.

2 MR. DAVIS: Can the activation be terminated  
3 manually at any time?

4 MR. STEFANO: I believe it can, yes.

5 MR. DAVIS: Thank you.

6 MR. STEFANO: Another feature of that is you  
7 don't have to recharge like you do halon, that you can  
8 continuously stop and start the CO2 system.

9 Are there any other questions?

10 MR. RAY: One residual question.

11 MR. STEFANO: Yes, sir.

12 MR. RAY: Are there other plants that have  
13 progressed with the installation of P. P. C. G. wherein  
14 G. E. has changed the fire protection to halon?

15 MR. STEFANO: I understand from what the Staff  
16 tells me -- and I can confirm this to you later, after  
17 this meeting or later on tonight -- that this is the one  
18 plant where a G. E. P. P. C. G. system is used that has  
19 CO2. We are not aware of another one that is being used.

20 MR. RAY: Is halon being used in the others?

21 MR. STEFANO: I understand it is, yes.

22 MR. RAY: Thank you.

23 MR. STEFANO: Are there any other questions on  
24 that?

25 MR. CATTON: What are the difficulties

1 associated with changing over?

2 MR. STEFANO: The equipment is installed and  
3 it's quite a financial -- I will let the Applicant speak  
4 better to that question; but, as I understand it, the  
5 equipment is already installed and it's in place.

6 MR. CATTON: Is it more than just a storage  
7 tank?

8 MR. STEFANO: Yes, it is involved. They are  
9 estimating something like two million dollars in changing  
10 the system to halon. Basically, I think, I believe,  
11 throwing it away and starting again; is that the idea?

12 MR. CATTON: Okay.

13 MR. STEFANO: If there are no other questions on  
14 that one, I would like next to go to equipment  
15 qualification, which we have identified as the mechanical  
16 and electrical equipment qualification, environmental,  
17 seismic, dynamic; and included in that is the pump and  
18 valve quality assurance test program, which is also part  
19 of the qualification.

20 That's on Pages 8 and 9 of your handout.

21 What I have done here is, briefly -- excuse me.  
22 What I have done here, briefly, in addressing each of the  
23 specific sections of the S. E. R. is to highlight what is  
24 already written there. There is no new information in  
25 here. Dealing with pump and valve operability assurance

1 program, the methodology and procedures for equipment  
2 seismic and dynamic qualification and the mechanical and  
3 electrical equipment -- the need for -- identify the  
4 degree to which environmental qualification program is in  
5 compliance with Category 1 of NUREG-0588.

6 I believe when the S. E. R. was written for the C.  
7 P. stage it said that this specific item must meet  
8 NU-REG, as a requirement, 0588.

9 MR. CATTON: During our tour this morning I  
10 noticed there is all sorts of equipment there.

11 What environment is that equipment, electrical  
12 equipment, valves and everything else, instrumentation,  
13 qualified to?

14 MR. STEFANO: It depends on the specific system  
15 we are talking about. I have no way of answering that  
16 question directly, since we sort of kind of get split up  
17 quite a bit, and I am not sure what areas of the plant you  
18 are referring to.

19 MR. CATTON: I am referring to the annulus above  
20 the suppression pool.

21 MR. STEFANO: Annuluss above the suppression  
22 pool? I can't answer that question.

23 MR. EBBERSOLE: May I ask a question about a  
24 certain piece of electrical equipment?

25 MR. STEFANO: Yes.

1 MR. EBBERSOLE: The G. E. safety logic is  
2 critically dependent on the environment qualifications of  
3 the solenoid valves which activate the A. D. S. system,  
4 because on them rests the dependency to get the plant  
5 down to low pressure so they can use all of these pumps  
6 which they proclaim to be so available for use.

7 Without that function you can't get the low  
8 pressure.

9 Could you comment on what you consider to be the  
10 quality of the environmental capability or tests for  
11 those particular solenoid systems? They require either  
12 125 or 250 D. C. to function and they must be held  
13 energized during the full life of their active use.

14 MR. STEFANO: Mr. Ebbersole, I believe I have  
15 Mr. Paul Shemansky from our equipment qualification  
16 branch who will attempt to answer that question for you.

17 MR. EBBERSOLE: Okay.

18 MR. CATTON: Where are they located?

19 MR. EBBERSOLE: They are inside the dry-well.

20 MR. STEFANO: The dry-well.

21 MR. EBBERSOLE: They ought to be someplace else.

22 MR. SHEMANSKY: Would you please summarize your  
23 question again?

24 MR. EBBERSOLE: Yes. I am interested in the  
25 actuation attaining capability under hostile environment

1 of the solenoid valves which activate the A. D. S. system  
2 inside the dry-well.

3 MR. SHEMANSKY: Well, if these valves are indeed  
4 located inside the harsh environment, they will have to  
5 be qualified for whatever environment they see.

6 MR. EBBERSOLE: The specifics of how you do  
7 that, you don't have at hand, do you?

8 MR. SHEMANSKY: No, we do not have the  
9 Applicant's submittal at this point. We expect to  
10 receive their submittal approximately September of this  
11 year.

12 MR. EBBERSOLE: There are not many such things  
13 inside the dry-well. There are a few valves, that is big  
14 motor-operated valves. If we have a critical item, it's  
15 the A. D. S. solenoids. Okay?. We would like to get  
16 some refined data on how they are qualified.

17 MR. SHEMANSKY: Okay.

18 MR. STEFANO: Mr. Pool, I am sorry. Perhaps you  
19 might be able to also address Mr. Catton's question. The  
20 annulus, what are they being qualified to? Are you in  
21 possession of that information at this point?

22 MR. SHEMANSKY: I am not specifically sure what  
23 environment it is located. I believe it is the mild  
24 environment and as such would have to be qualified for  
25 mild environment.

1 MR. CATTON: What is a mild environment?

2 MR. SHEMANSKY: The plant is broken up into  
3 environmental zones, in particular we are concerned about  
4 the environmental zones resulting from the main steam  
5 line break or a LOCA, and we have two basic environments,  
6 the harsh and mild environment. Those equipment in the  
7 harsh environment must be qualified for a LOCA and main  
8 steam line break. The other equipment in the mild  
9 environment, our main concern there is particularly  
10 long-term aging. They will not see the harsh environment  
11 in terms of radiation, temperature, humidity and so  
12 forth.

13 MR. CATTON: You probably won't see a lot of  
14 radiation being outside but I would think that if you had  
15 a LOCA, the fact that they are going to be submerged  
16 would change the environment a little.

17 MR. SHEMANSKY: If they are submerged, they will  
18 have to be qualified for submergence.

19 MR. RAY: I wouldn't call a submergence a mild  
20 environment.

21 MR. CATTON: I wouldn't, either.

22 MR. SHEMANSKY: No, certainly not.

23 MR. KUDRICK: If you are going to the annular  
24 space beyond the containment, there would not be any  
25 submergence in that particular area.

1                   MR. CATTON: Jack, I am referring into the same  
2 area that came into question on Gulf. I remember that  
3 you indicated that they actually rained on them to make  
4 sure that everything was okay. To me that is a  
5 environmental qualification test. I am just curious what  
6 you do to other things like the pressure cells are  
7 located on a rack that is 10 or 15 feet above the water  
8 level.

9                   MR. KUDRICK: The question that was raised on  
10 Grand Gulf had to do with the equipment within  
11 containment and that could possibly be exposed to pool  
12 swell and fall back and essentially producing a rain-type  
13 atmosphere on that equipment.

14                   MR. CATTON: Yes.

15                   MR. KUDRICK: That's totally within the  
16 containment.

17                   I thought you were referring to the annular space  
18 outside of containment actually located within secondary  
19 containment; and if that were the case, then the  
20 environment would not include any pool swell effects.

21                   MR. CATTON: I was referring to the compression  
22 pool.

23                   While we were on our tour, somebody called it the  
24 annulus and I thought I would be smart and use the right  
25 word.

1 (Laughter.)

2 MR. EBBERSOLE: Are the level pressure  
3 transmitters in the wet-well air space here?

4 MR. KUDRICK: The suppression pool level --

5 MR. EBBERSOLE: No. I am talking about the  
6 reactor primary system.

7 MR. KUDRICK: I am not sure.

8 MR. EBBERSOLE: Electrical transducers are  
9 transmitted in the wet-well air space, does anybody know  
10 that?

11 MR. CATTON: There was a whole rack of  
12 instruments in there. I am just not sure what they were.

13 MR. EBBERSOLE: Well, if they are there, they  
14 will be in a rain-type environment.

15 MR. LIPINSKI: The qualification of the Class 20  
16 equipment, on all of the items like relays that have  
17 spring-mast systems, are these individual components  
18 being qualified in terms of their individual resonant  
19 frequencies to see where they fall in the seismic  
20 spectrum?

21 MR. SHEMANSKY: Yes, I believe they are,  
22 primarily through prototype testing. If, in fact, they  
23 are designated as safety-related electrical or mechanical  
24 equipment, then they must, of course, be seismically  
25 qualified.

1           MR. LIPINSKI: Anything I have heard to date,  
2 though, deals with the 33 cycle cutoff, and information  
3 indicates that this is not the case, that there are  
4 frequencies above 33 cycles that penetrate all of this  
5 equipment.

6           The question really is: Are they being examined for  
7 resonances above 33 cycles?

8           MR. SHEMANSKY: To my knowledge, they are,  
9 through various testing programs which are currently  
10 being conducted.

11           In this particular area we have requested additional  
12 information from the Applicants, so right now we don't  
13 have a complete package. We expect that approximately,  
14 again, in September of this year; and we will follow-up  
15 with a site audit approximately March of '83, both a  
16 seismic and environmental site audit, in which we will be  
17 actually looking at installed equipment, evaluating  
18 documentation, primarily test reports and seismic and  
19 environmental qualification documentation in general.

20           MR. LIPINSKI: At some point I would like the  
21 Applicant to respond to that question with respect to  
22 your seismic classifications of Class 1-E electrical  
23 equipment, particularly the spring-mast systems that have  
24 resonant frequencies.

25           MR. STEFANO: Are there any other questions?

1 MR. RAY: Yes. I would like to come back to  
2 this question of mild environment.

3 I thought I understood it as a result of the  
4 discussions with the Environmental Qualifications  
5 Subcommittee relative to the rule that was -- is now  
6 before the Commission on Environmental Qualifications.

7 I had the misconception, apparently, that mild  
8 environment was intended as the environment which  
9 equipment -- which is not going to see because of its  
10 location the harsh environment associated with a LOCA. A  
11 mild environment is that environment which that equipment  
12 would see in day-in, day-out routine operation of the  
13 plant.

14 MR. SHEMANSKY: That is correct.

15 MR. RAY: That is your intent as to what mild  
16 environment means?

17 MR. SHEMANSKY: Yes, it is. Mild environment is  
18 environment in which the equipment will operate in. It  
19 will perhaps see some abnormal transients, abnormal  
20 temperatures and so forth.

21 MR. CATTON: Would you consider the space above  
22 the suppression pool a mild environment?

23 MR. KUDRICK: No.

24 MR. CATTON: Thank you.

25 MR. SHEMANSKY: I might add that the Staff right

1 now, utilizing NU-REG 588, is concentrating on LOCA'S and  
2 main steam line breaks inside containment and outside  
3 containment we are looking at high energy line breaks.

4 With regard to the fire fighting equipment and so  
5 forth, that is presently outside the scope of the  
6 equipment qualification review. It is, however, being  
7 handled under the fire protection program.

8 There has been Staff discussion on the potential  
9 environmental effects of inadvertent fire systems spray  
10 actuation systems.

11 MR. EBBERSOLE: You do have design basis that  
12 involves a substantial steam release once in a rare  
13 while, I hope, outside in the so-called mild environment  
14 which is intercepted by isolation valves in due course.  
15 Is your equipment prepared for the condensation effects  
16 that might result from dropout or layout of the water  
17 that results from this? Have you examined the  
18 possibility that you will have -- you will not -- rather,  
19 you might have major electrical failures as a result of a  
20 temporary steam environment?

21 MR. SHEMANSKY: Well, if we have a temporary  
22 steam environment, that would be resulting from a  
23 high-energy line break, that would be a hostile  
24 environment, so then the equipment would have to be  
25 qualified.

1 MR. EBBERSOLE: Even though it's in a normally  
2 found --

3 MR. SHEMANSKY: We have many equipments which  
4 are in the mild environment, with the exception they may  
5 be near recirculatory lines and so forth, so they would  
6 have to be qualified for one harsh environment parameter,  
7 radiation, for example, or in this case steam.

8 MR. CATTON: Is the equipment in the suppression  
9 pool qualified to accommodate hydrogen?

10 MR. SHEMANSKY: Are you speaking about a  
11 hydrogen burn?

12 MR. CATTON: If that's what it results in, yes.

13 MR. SHEMANSKY: (No response.)

14 MR. EBBERSOLE: You mean the dry-well?

15 MR. CATTON: The wet-well. It's going to act  
16 like an ice condenser.

17 MR. SCHWENCER: I think with respect to  
18 hydrogen, the Staff is pursuing both on Grand Gulf and  
19 assume if it has not, they will with Perry, the harsh  
20 environment with respect to potential hydrogen burns, the  
21 degraded core type of a situation is I assume what you  
22 are referring to; and we have not completed that area of  
23 review and Grand Gulf. I assume that Perry is probably  
24 not that far along to have a final answer with respect to  
25 hydrogen burn environment, but we have faced it on other

1 plants, the P. B. R.'s that have hydrogen systems.

2 MR. CATTON: That's why I asked the question.  
3 During a suppression, it's going to act like an ice  
4 condenser.

5 MR. EBBERSOLE: With respect to the mechanical  
6 environmental components of the equipment, have you yet  
7 examined the effect of recirculation line failure on a  
8 control rod drive and exhaust tubes in the event a local  
9 failures in the recirculation line occurs where these  
10 tubes surround that piping?

11 MR. SHEMANSKY: I don't believe so, no, we have  
12 not.

13 MR. EBBERSOLE: I think we would like to have  
14 you do that on a quantitative basis. It has been done by  
15 others, so this is no novel request.

16 MR. RAY: Will you proceed, please, Mr. Stefano?  
17 We are going to be running out of time in a minute.

18 MR. STEFANO: I am sorry about that. Okay.

19 The next item is a control room design assessment  
20 audit, which is Item 7 here, and that is on Page 12 of  
21 your handout. Essentially, the Applicant has endorsed a  
22 program plan for control room design reviews and human  
23 factor evaluations that has been developed by the B. W.  
24 R. owners group.

25 They have submitted their program to us. We just,

1 in fact, recently received it last week.

2 The Staff is currently reviewing that and we hope  
3 that in early August will be able to do a preliminary  
4 design review of the control room by our human factors  
5 people.

6 Essentially, what this review would involve is the  
7 extent that the Applicant is committed to meet T. M. I.  
8 action items 1-D-1, which is a control design users, as  
9 you know, and also 2-K-327, which deals with the types of  
10 location of alarms, readouts in the control room.

11 Are there any questions on that?

12 MR. EBBERSOLE: I have a question.

13 In essence, the remote shutdown room is an extension  
14 of the control room.

15 Early on --

16 MR. STEFANO: Yes.

17 MR. EBBERSOLE: -- the Staff took little if any  
18 interest in the character of the remote shutdown room.  
19 However, since the appendix and few other developments,  
20 like the fire, the Staff has taken a greater interest in  
21 the shutdown room.

22 Does the Staff now perform review of what is in that  
23 room and what isn't in it and what its potential  
24 contribution to trouble may be itself?

25 MR. STEFANO: Yes.

1 I have Mr. Don Tondi from our Human Factors  
2 Engineering Branch, who is involved in this particular  
3 design area.

4 Don, would you like to comment on that question?

5 MR. TONDI: Yes, Jessie, we do look at the  
6 remote shutdown.

7 MR. EBBERSOLE: You do it now?

8 MR. TONDI: We do.

9 With respect to the division I am in these days, the  
10 division of -- well, the branch, the Human Factors  
11 Engineering Branch, we only look at the controls and  
12 displays from the human factors prospective.

13 MR. EBBERSOLE: Here we noted that as a unique  
14 logic, I think, here, that the remote shutdown room is in  
15 effect a weak point in the design rationale, in that if  
16 some sort of event takes place there, it affects that  
17 particular division in the main control room.

18 MR. TONDI: I heard you bring that question up  
19 when when we were up there.

20 MR. EBBERSOLE: But it doesn't assume affect the  
21 distributive competence to shutdown the other boards.  
22 You all examine this rationale in depth.

23 MR. TONDI: I am not going to cop out on you but  
24 the instrumentation and control systems branch looks at  
25 that aspect of the review. That was my old hat, but we

1 are going to human factors review of the control panel.

2 MR. EBBERSOLE: Right. Thank you.

3 MR. STEFANO: Mr. Ebbersole, we will have Mr.  
4 Jerry Mouth here tomorrow from that group, I will have  
5 him answer that question for you.

6 MR. EBBERSOLE: Thank you.

7 MR. STEFANO: That -- I am sorry. One more.

8 The last item is emergency planning and essentially what  
9 we have done in the S. E. R. here is provided basically a  
10 status report as opposed to an evaluation. Mainly, we  
11 have had several meetings with the Applicant and we have  
12 gotten, I think, the latest piece of information was  
13 received in February of this year. We are still asking  
14 for clarification. We are still doing our review of that  
15 information to see that the adequacy is. Apparently,  
16 there is proposed rule making, Al, is that correct, which  
17 separates emergency preparedness internal and external of  
18 the facility.

19 Al, could you comment a little bit on that,  
20 possibly?

21 MR. SCHWENCER: Yes. I might just mention that  
22 on June 11th, as you may be aware, the Commission  
23 approved a final amendment concerning emergency planning  
24 with respect to 10-CFR-50 and Appendix E., basically with  
25 respect to -- the rule provides that for the issuance of

1 an operating license authorizing fuel loading and  
2 operation to 5 percent power, no N. R. C. or FEMA review  
3 findings, determinations, et cetera, concerning state or  
4 adequacy of offsite emergency preparedness is necessary  
5 under that kind of a licensing limit. The rule also  
6 specifies that emergency preparedness exercises are a  
7 part of the operational inspection. The exercise must be  
8 conducted prior to operation above 5 percent power but it  
9 is not required for any additional licensing process if  
10 we are talking in terms of the fuel loading and up to 5  
11 percent power licensing. Of course, all matters with  
12 respect to onsite emergency preparedness must be dealt  
13 with prior to taking initial licensing action; and I  
14 guess we are still proceeding on getting that wrapped up,  
15 John, aren't we?

16 MR. STEFANO: Yes, that is correct.

17 MR. SCHWENCER: Okay.

18 MR. STEFANO: Are there any questions on that  
19 particular item?

20 (No response.)

21 MR. STEFANO: Gentlemen, if you will, because of  
22 the time here, and if you will permit me, I would just  
23 like to, very briefly, go through some of these to  
24 confirm, because there are 49 of those, if you so desire  
25 or would you prefer to --

1 MR. SCHWENCER: John, can I interrupt just a  
2 minute?

3 MR. STEFANO: Yes.

4 MR. SCHWENCER: I think Mr. Ray indicated he was  
5 interested in the management review.

6 MR. STEFANO: Yes.

7 MR. SCHWENCER: I was taking a fast look at the  
8 safety evaluation, I won't try to read this through, but  
9 the Staff did have some concerns on management and on  
10 Page 13-1 of the safety evaluation, this is identified.  
11 The Applicant did commit to making improvements and in  
12 particular the Vice President of the Nuclear Group will  
13 not have collateral duties that might detract from his  
14 duties at the Perry facility.

15 Also, the -- under the organized -- the operating  
16 organization, the review staff had asked that the  
17 Applicant augment his operating staff and management  
18 staff with additional personnel having B. W. R. startup  
19 and operating experience, and in letters in March and  
20 April the Applicant did indeed commit to doing this.

21 So these Staff positions, concerns, have been  
22 addressed by the Applicant.

23 We also had a concern with respect to being sure  
24 that there was a Shift Technical Advisor that adequately  
25 deals with the activities on each shift and the Applicant

1 has also committed to take care of that.

2 We had one item that is perhaps only tangentially  
3 related, but John may have touched on that, and that is  
4 the operating Staff for Unit 2, and I don't think for  
5 purposes of today's meeting that there is probably much  
6 advantage to discussing that.

7 The Staff and the Applicant are not in agreement in  
8 terms of the total crew complement, shift complement,  
9 with that; but that's a matter that they will probably  
10 have an opportunity as they gain more experience to come  
11 back and convince us on if they think they are able.

12 MR. RAY: Al, where in the S. E. R. did you say  
13 that was discussed? Was it 13-1?

14 MR. SCHWENCER: Yes. This is Pages 13-1 through  
15 about 13-7, 13-8, in that area.

16 MR. RAY: Thank you. Okay?

17 MR. STEFANO: Did you want to go into the I. E.  
18 report, sir?

19 MR. RAY: We have time for that, yes.

20 MR. STEFANO: Okay. My next slide ---

21 MR. RAY: Oh, yes, excuse me, Mr. Stefano.

22 MR. STEFANO: Yes.

23 MR. RAY: I had raised the question of residual  
24 seismic concerns at the outset of your presentation.  
25 Remember, I said I had read into the omission of your

1 discussion of this, the implication that you were  
2 satisfied.

3 MR. STEFANO: Yes. This deals with -- let's see  
4 if I understand correctly your question.

5 This deals with Item 2 of the outstanding issues,  
6 sir; is that what you are referring to?

7 MR. RAY: Yes.

8 MR. STEFANO: I guess the only thing that I -- I  
9 do not have any representation here from the Staff to,  
10 perhaps, go into the kind of depth in this that you might  
11 want to resolve the question.

12 I guess all I could probably say to you here is that  
13 we have summarized the situation between the three  
14 buildings that are in question at this point in terms of  
15 seismic, system, subsystem analysis. On Page 6 of your  
16 handout, we have identified the kinds of analyses that we  
17 have asked the Applicant to go back and redo in terms of  
18 the diesel generator and fuel handling buildings.  
19 Apparently, these are two of the only buildings that are  
20 not founded on rock. They are founded on, I believe,  
21 Class A fill. I am not a geologist or I can't really get  
22 into that, nor am I familiar with the types of analysis  
23 here to be completely honest with you.

24 In terms of the fuel handling building, I think we  
25 have asked them to determine whether the results of their

1 analysis are conservative by using the square root or sum  
2 of the squares method or rule in that approach. They  
3 have not done that.

4 I don't think any of these two items based on what  
5 Staff has told me are really irresolvable or outstanding  
6 in the sense that we just feel we had the analysis. When  
7 we looked at the analysis they did, we didn't think in  
8 terms of our acceptance criteria, we didn't think there  
9 was enough margin there.

10 MR. RAY: Currently, you are not in disagreement  
11 with them, you just want more detail?

12 MR. STEFANO: Yes.

13 MR. RAY: Thank you.

14 MR. SCHWENCER: We can plan to have someone at  
15 the full Committee meeting to address this further, if  
16 you would like.

17 MR. RAY: I think that might be desirable,  
18 particularly to have someone there to respond to  
19 questions that may come up, details.

20 MR. STEFANO: Okay.

21 MR. SCHWENCER: Okay.

22 MR. STEFANO: In terms of the confirmatory  
23 items, before I list them, I mentioned earlier in my  
24 introductory remarks that we further in terms of trying  
25 to give you some idea of the status of these things since

1 we submitted the S. E. R., we have tried to further break  
2 them down into what we consider long term, and long term  
3 meaning that we probably will not see a resolution in the  
4 supplement that comes out in August. It will be probably  
5 some time thereafter. Some of these things involve  
6 audits which will not be done until March of '83 or later  
7 on this year and we will need to do that before those  
8 items can be closed out.

9 Some also involve some analysis work.

10 There are about 13 of those items out of the 49 that  
11 will probably be resolved later or closed out later than  
12 the first S. E. R., it probably will require another S.  
13 E. R.

14 There are three which are completed since the S. E.  
15 R. was issued. I will show you what those are when I put  
16 up that particular slide.

17 When I am saying these are completed, this means  
18 that we have gotten a response back to the question  
19 raised and concerns raised by the Staff. There isn't a  
20 formal piece of paper that has gone back to say, "Yeah,  
21 this is finished," but I have talked to the Staff about  
22 this prior to coming to the meeting and they have told me  
23 for those particular items they have received adequate  
24 information to close out and they will reflect this in  
25 the supplement in August of '82.

1           The Item C or those items which will have a C  
2 status, there is information that has come in, but I have  
3 no word back yet whether that is acceptable or not, and  
4 the Applicant has taken no action at all. There are  
5 about nine of those items out of the 49.

6           D is -- the Applicant still needs to develop a  
7 response. In other words, the analysis hasn't been  
8 completed yet, they are still doing the analysis. They  
9 are awaiting some input from G. E. as part of the B. W.  
10 R. O. G. group and they need input before they can do  
11 their plant specific work; and there are a couple of  
12 items which are in the D category that deal mainly with  
13 the fuel, fuel balloon, I believe, is one and buckling,  
14 that sort of thing. There are four confirmatory items,  
15 which we'll show you, where G. E. is studying generically  
16 for all B. W. R.'s and this is one of those numbers, D,  
17 that require input from G. E., but they can complete  
18 their -- start their work.

19           MR. RAY: 49 items is an impressive number in  
20 the raw, but is this project any different from the  
21 average in the past in this area?

22           MR. STEFANO: No, sir. If we -- even though  
23 there are many, we see none here that have not been --

24           MR. RAY: Character of other plants?

25           MR. STEFANO: Characteristic of other plants of

1 the same generics.

2 MR. RAY: Thank you.

3 MR. STEFANO: I will come back to this if we  
4 need to, this particular slide, if we need to further  
5 define; but here are some examples.

6 I really don't think any of these are extremely  
7 significant based on what the S. E. R. indicates and in  
8 my discussion with Staff, this is just to give you an  
9 idea of -- and these are listed in your handout -- of the  
10 specific item and what the status is that I just tried to  
11 enumerate to you.

12 You can see here that Item 4, design analysis  
13 emergency service water tunnel structures is essentially  
14 closed.

15 Containment buckling analysis has been received and  
16 is acceptable to the Staff. There are certain others in  
17 the B Category, if I can find them for you.

18 MR. SCHWENCER: Page 30, John.

19 MR. RAY: I don't think you have to run down the  
20 49 items, Mr. Stefano. We are impressed.

21 (Laughter.)

22 MR. STEFANO: I think a point I want to make  
23 about all of this is that a number of the T. M. I. items  
24 fall into this category of confirmatory.

25 The agenda did say we should really address the T.

1 M. I.

2 There are really none significant as far as I can  
3 see in terms of the Applicant committing to meet the  
4 requirements of the T. M. I. items. I would say that a  
5 good number of the 49 in one way or another reflect the  
6 T. M. I.'s, and requires them to further elaborate as to  
7 how they intend to meet them before we say "Yeah, you  
8 meet them."

9 That, essentially, unless there are any questions,  
10 would conclude my specific presentation.

11 With your permission, I think we are ready to go  
12 onto the next item, which will be presented by Mr.  
13 Cordell Williams, from our Engineering Inspection Branch  
14 in Region 3.

15 Cordell.

16 MR. DAVIS: Excuse me. Can I get one question  
17 in before you call him up?

18 MR. STEFANO: Yes, sir.

19 MR. DAVIS: Item 23 of that list on containment  
20 isolation dependability, can you tell me what the status  
21 of that is? You have that designated as a C., which  
22 means --

23 MR. STEFANO: That is part of the generic study  
24 going on, generic evaluation being done by the Staff on  
25 the igniters for the Grand Gulf design, I believe.

1 MR. DAVIS: Igniters?

2 MR. STEFANO: Yes.

3 MR. DAVIS: This is containment isolation.

4 MR. STEFANO: Well, maybe I have the wrong one.

5 Hold on.

6 Okay. In terms of that, the Applicant -- I am sorry  
7 about that.

8 The Applicant is evaluating the minimal pressure  
9 point that will be compatible with normal operating  
10 license to assure that we have adequate containment  
11 isolation dependability.

12 We have just recently received their input on that,  
13 and I have no status to report at this point as to where  
14 we are.

15 I presume we will have something in the supplement  
16 that is coming out in August.

17 MR. DAVIS: Thank you.

18 MR. STEFANO: You are welcome.

19 MR. LIPINSKI: I would like to go back into the  
20 seismic issue.

21 In touring the plant we noticed a new type of  
22 construction for the Class 1-E electrical compartments  
23 with steel studs and gypsum board.

24 Has the Staff reviewed that for its seismic  
25 capabilities?

1 MR. STEFANO: I really can't answer that  
2 question right now. I will certainly raise that. I  
3 realize that raises a concern.

4 MR. LIPINSKI: We were reassured about its fire  
5 rating but it also has to withstand the seismic  
6 qualifications.

7 MR. STEFANO: Can I get back to you later on  
8 today or tomorrow on that?

9 MR. LIPINSKI: Yes, that will be fine.

10 MR. STEFANO: Thank you.

11 MR. RAY: Mr. Williams.

12 MR. WILLIAMS: Good afternoon. Am I being  
13 heard?

14 (No Response.)

15 MR. WILLIAMS: Apparently.

16 I am Cordell Williams, Chief of Plant Systems  
17 Section in Region 3. I am here to speak specifically to  
18 Intention 3. It's my pleasure to share with you the  
19 Region 3 response and perspectives regarding the Perry  
20 Contingent 3 as set forth in S. L. A. B. order dated July  
21 28, 1982, which states in July, that Applicant has  
22 inadequate quality assurance program that has caused or  
23 is continuing to cause unsafe construction. My  
24 presentation before you today is divided into two parts.  
25 One is a summary of the events leading to the issuance of

1 the Cleveland Electric Illuminating stop-work order and  
2 associated N. R. C. Immediate Action Letter and the  
3 licensee's recovery in '78.

4 MR. RAY: Mr. Williams, permit me to interrupt,  
5 please.

6 You use the present tense in what you just said a  
7 moment ago and I am not sure that -- it's not clear to me  
8 what the meaning is. You said the Applicant "has."

9 Was that as of a certain time?

10 MR. WILLIAMS: The quote was from the contingent  
11 ifs. The contingent is that the licensee has a defective  
12 Q. A. program and had in his --

13 MR. RAY: In the past.

14 MR. WILLIAMS: In the past, very much in the  
15 past.

16 MR. RAY: How long ago?

17 MR. WILLIAMS: These issues were identified in  
18 1978 and resolved during that period of time, the  
19 immediate year thereafter.

20 MR. RAY: Thank you.

21 MR. WILLIAMS: When the licensee issued its  
22 stop-work order in 1978 in response to the N. R. C.  
23 inspection findings, N. R. C. Region 3 issued what we  
24 call an Immediate Action Letter . The Immediate Action  
25 Letter is a methodology we use to document an accord

1           between the licensee and N. R. C. as to what actions need  
2           to be taken in order to affect an effective corrective  
3           action and to resolve the issues wherein their program  
4           was not functioning as we had expected them to or as  
5           described in their preliminary safety analysis report.

6           Now, the Immediate Action Letter dated February 8,  
7           1978, issued by N. R. C. Region 3 resulted from findings  
8           of significant deficiencies in the licensee's  
9           construction practices and the Perry plant Q. A. program  
10          in January and February of early -- rather, in January  
11          and February of 1978. Subsequently, C. E. I. took  
12          comprehensive actions to correct the deficiencies,  
13          including a complete revision of the Perry Quality  
14          Assurance Program from the corporate level to the  
15          detailed implementing procedures, a restructuring of the  
16          Q. A./Q. C. organization, including the replacement --  
17          the placement of a number of management level Q. A./Q. C.  
18          personnel with more capable individuals at the site.

19          A major change of the site construction organization  
20          was effective, also, to provide a more comprehensive  
21          control of the site contractors.

22          While the above changes by C. E. I. were taking  
23          place, the N. R. C. Region 3 office instituted an  
24          augmented inspection program for the Perry plant to  
25          review in detail their corrective actions and the revised

1 Q. A. program in terms of its implementation.

2 Further, we wanted to assure ourselves that existing  
3 work in areas other than those that were identified  
4 during the initial inspection in '78, January and  
5 February of '78, had been properly resolved or properly  
6 constructed.

7 N. R. C. inspection program at Perry prior to the  
8 subsequent date of our resolution of each of the issues  
9 that resulted in the shutdown has shown that the overall  
10 Q. A./Q. C. program has been functioning effectively.

11 N. R. C. Region 3 performs what we term a Solp, that  
12 is a systematic appraisal of the licensee's performance  
13 each year. This previous two years, part of this year,  
14 the licensee has likely been changed to be adequate of  
15 the implementation of the Q. A. program. Separate from  
16 that, this year he was more than adequate in all areas  
17 with the exception of one.

18 Now, over the course of this period of time since  
19 the recovery, while we state and would proclaim that the  
20 licensee's performance has been adequate, that is not to  
21 say that we have not identified a number of significant  
22 quality assurance issues.

23 Each of these issues has been addressed  
24 comprehensively in terms of the term and none of them  
25 have constituted the sort of circumstances that we

1 encountered in '78, which resulted in the shutdown.

2 At this time you should be aware that while our  
3 assessment as I have outlined it before -- at this time  
4 you should be aware that the licensee is in process of  
5 taking a rather significant corrective action in terms of  
6 the performance of the site electrical contractor in  
7 direct response to issues that N. R. C. Region 3  
8 identified beginning in October of '81 and beginning  
9 through October until March of this year in terms of an  
10 investigation.

11 These issues have been substantially addressed by  
12 the licensee. Subsequent to our initial inspection  
13 activity last October, N. R. C. Region 3 is still in the  
14 process of taking its enforcement action in terms of our  
15 consideration for an escalated activity.

16 With then our administrative practices, an escalated  
17 enforcement action amounts to anything from a shutdown,  
18 an Immediate Action Letter that specifies specifically  
19 what should be done or the imposition of a civil penalty.  
20 That process, that administrative process, is still  
21 pending within N. R. C. Region 3.

22 MR. RAY: But -- excuse me -- based on the past  
23 experience rather than current experience.

24 MR. WILLIAMS: The enforcement process that is  
25 current, the one that I just described, is based on the

1 experiences dating from October until about March of this  
2 year involving quality assurance discrepancies and  
3 omissions within the electrical contractors' program. So  
4 it's current in that sense but not based upon those  
5 issues that led to the 1978 shutdown.

6 Our current assessment of the licensee within our  
7 procedure that I described earlier, the Solp program, is  
8 that one, Q. A. performance at Perry has been generally  
9 satisfactory. Two, our most recent Solp indicates that  
10 in ten of the functional areas reviewed, nine of them  
11 were satisfactory with the exception of the performance  
12 of the electrical contractor, and that area the licensee  
13 has initiated a corrective, and as I outlined before, N.  
14 R. C. is continuing its process of evaluating those  
15 actions that we may or may not take in terms of assuring  
16 ourselves further that the licensee is completely aware  
17 of the nature of our concern and completely aware of the  
18 circumstances that allowed these conditions to prevail.

19 Based upon this review and in the context of the  
20 contingent as we understood it, it is our belief that the  
21 performance of the licensee has been adequate in spite of  
22 those deficiencies and items that we cited under 10-CFR  
23 part 50 Appendix B. In that context we don't believe  
24 there are any conditions or circumstances within their  
25 implementation of the program that are manifest or

1 demonstrations of the manifestations that occurred back  
2 in 1978, so in that context we don't believe the issues  
3 as presented to us as Contingent 3 should be extended to  
4 cover, if you will, those areas of performance within the  
5 Q. A. program that have prevailed since 1978.

6 Are there any questions, sir?

7 MR. AXTMANN: When the drastic difference  
8 occurred in '78 was the result of action taken by N. R.  
9 C.; but what happened in the local organization? How was  
10 the error -- excuse me -- the bad performance turned  
11 around? Was it organizational, was it -- just how was it  
12 done?

13 MR. WILLIAMS: Okay. There are a number of  
14 specific findings of inadequate construction. Those  
15 issues, of course, were addressed comprehensively; but  
16 prior to that the licensee -- and during the course of  
17 those, of making the repairs -- the licensee completely  
18 restructured his Q. A. organization. If I may say it in  
19 a nutshell, he initiated an organizational structure that  
20 allowed C. E. I. to be in full control of the quality  
21 program implementation. They transferred principal Staff  
22 with direct responsibility for Q. A., engineering and  
23 construction, to the site, whereas prior to that time the  
24 principal Staff had been located elsewhere, and bringing  
25 them to the site so they could deal with the issues

1 immediately, that significantly improved the operation of  
2 the operation.

3 Separate from that, a number of personnel who had  
4 not previously been in their employ, were employed. They  
5 brought with them the sort of talent, training and  
6 experience that was needed in order to allow this  
7 licensee to properly control construction at the site.

8 MR. AXTMANN: Originally were the Q. A. people  
9 contractor employees or were they C. E. I. employees?

10 MR. WILLIAMS: The principal -- of course, the  
11 principal responsibility for Q. A. is the licensee's.  
12 The licensee had a Q. A. organization that had those  
13 principal Q. A. responsibilities, and by that I mean  
14 they, in fact, reviewed the contractors' programs. Now,  
15 with any contractor's organization he may or may not have  
16 had Q. A. responsibility. He nearly has always had, as a  
17 general statement, quality control responsibility.

18 In this instance the licensee combined his talent,  
19 if you will, organizationally, with the talents that were  
20 available from the engineer and elsewhere, to -- and that  
21 has resulted in a stronger quality organization with none  
22 of the divisions that sometimes exist at other sites.

23 MR. AXTMANN: Thank you.

24 MR. RAY: I have been reaching during your  
25 presentation with a measure of a relative effectiveness

1 of this organization as compared with others that you  
2 have -- on which you have performed a Solp.

3 How prevalent is it when you perform a Solp that you  
4 find nine out of ten are he satisfactory and you only  
5 find one out of ten is where you require corrections? Is  
6 this average, below average, above average?

7 MR. WILLIAMS: I believe it's average.

8 I would go further and say my experiences with this  
9 licensee, with the direct and forthright manner in which  
10 it and its management addresses our quality issues, their  
11 responsiveness in a word, that they are above average,  
12 but that's a Williamsism, if you will; separate that --

13 MR. RAY: Well, you have a hands-on relation.  
14 That's what I want.

15 MR. WILLIAMS: That's it.

16 MR. RAY: Thank you.

17 MR. WILLIAMS: Yes, sir. Are there others?

18 (No Response.)

19 MR. WILLIAMS: Thank you.

20 MR. RAY: Thank you very much, Mr. Williams.

21 I would like at this time to hear from Miss Klein,  
22 who is a concerned citizen and would like to make a  
23 statement.

24 MS. KLINE: Can you hear me now?

25 My name is Connie Kline and I thank you for this

1 opportunity to express my views.

2 Before I begin I would like two objections regarding  
3 these proceedings to be entered into the record.

4 One, this meeting should never have been held at  
5 this location. It should have been held in Lake County,  
6 where the Perry plant is.

7 Two, it is very unfair to require that those who  
8 make statements reproduce them 15 times. It's expensive  
9 and it's inconvenient.

10 There are a number of serious, unresolved problems  
11 with the preliminary 1980 study prepared for the Perry  
12 plant by the evacuation consultants Voorhees and  
13 Associates, who are currently preparing the final plan  
14 for the plant, the cost of which is being paid for by C.  
15 E. I., which could be interpreted as a possible conflict  
16 of interest; and as was brought out a short time ago,  
17 these concerns pertain to operating levels above 5  
18 percent, because they are all offsite concerns.

19 The first concern, the ten mile radius for Perry has  
20 25,000 households, that is Page 45 of the study. and  
21 94,394 people, that's Page 10 of the study -- who would  
22 have to be notified within 45 minutes.

23 One suggested method of confirmation of notification  
24 is by telephone sampling, Page 45 of the study.

25 How can telephone lines be tied up in this manner in

1 an emergency? Does each of the three counties in the ten  
2 mile radius, Lake, Geauga and Ashtabula, have every deaf  
3 and/or blind or otherwise physically impaired person  
4 register to insure that all of these people will be  
5 checked personally to determine if they have been  
6 notified?

7 Point 2, the only feasible routes out of Perry are  
8 east-west routes. Voorhees admits on Pages 7 and 8 of  
9 the study, that the north-south routes are inadequate.  
10 Therefore, much of the evacuation would take place right  
11 through the radiation plume and no one knows how long  
12 this would take, although the Voorhees estimates seem to  
13 be unrealistically short, Pages 35, 36 and 43 of the  
14 study. Quote, "The total travel time of the auto-owning  
15 population during inclement weather conditions is  
16 estimated to be four and three-quarters hours instead of  
17 four hours under normal conditions," end quote.

18 The initial four-hour estimate seems too short in  
19 allowing only 45 minutes more during inclement weather is  
20 ludicrous and can only mean that the Voorhees Staff,  
21 which is from Virginia, has never experienced inclement  
22 weather in Northeastern Ohio.

23 Perry itself and areas immediately south and east  
24 lie in the so-called snow belt of Northeastern Ohio. As  
25 one Lake County tow truck operator commented at a public

1 forum held on February 24, 1982, at which Colonel James  
2 Williams, State of Ohio, Nuclear Preparedness Officer  
3 spoke on emergency planning, quote, "I could not even  
4 walk to my tow truck let alone drive it during this  
5 winter's ice storms," end quote.

6 Page 37 of the study states that quote, " Ashtabula  
7 County east of the E. P. Z. should be the reception area  
8 for approximately 30 percent of the evacuation population  
9 destined to a reception center," end quote. As noted  
10 above, east is the direction of the prevailing winds and  
11 Ashtabula is therefore downwind from the plant itself.

12 Item 3, there are not enough school buses within 10  
13 miles of Perry to evacuate the estimated 22,412 -- that's  
14 Page 18 of the study -- school children and  
15 non-auto-owning residents.

16 Two solutions are suggested. A, bringing in school  
17 buses from a wide area outside the evacuation zone. B,  
18 using Cleveland Regional Transit Authority buses, that is  
19 R. T. A., that is on pages 28, 40 and 41 of the study.  
20 The 150 available buses would need to make approximately  
21 500 bus trips out of the ten mile zone, that is Page 40  
22 of the study. School and R. T. A. bus drivers should  
23 not be expected to risk exposure to high levels of  
24 radiation making multiple trips into a ten mile zone from  
25 which everyone else is trying to escape. Bus driver

1 unions have not been involved of this provision of the  
2 Voorhees studies. Furthermore, R. T. A. buses are not  
3 the most dependable form of transportation, even in the  
4 downtown and suburban Cleveland areas.

5 The State Director of Health has stated that  
6 emergency workers may be exposed to 75 rems of radiation  
7 in voluntary life-saving situations during a nuclear  
8 plant accident. This is 150 times the yearly allowable  
9 limit for the public, which is 5 tenths of a rem.

10 Item 4, other emergency workers who could be called  
11 upon to help with evacuation, include tow truck  
12 operators, telephone operators, police, fire and hospital  
13 personnel. Like the bus drivers, many of these people  
14 may not want to remain in the ten mile evacuation zone.

15 Item 5, there are not enough ambulances in the ten  
16 mile zone to evacuate bedridden patients in the two  
17 hospitals and several nursing homes. The proposed  
18 solution involves using every ambulance from Lake, Geauga  
19 and Ashtabula Counties to make multiple trips to evacuate  
20 these patients. Pages 21 and 41 of the study.

21 Item 6, according to Colonel Williams, it will take  
22 State Disaster Service Agency personnel over two hours to  
23 reach Perry from Columbus. Evacuation planning seems to  
24 be so naphazard that Appendix 13-A of the F. S. A. R.  
25 lists Lake County Memorial East as C. E. I. chosen

1 treatment center for plant radiation victims despite the  
2 fact that this hospital was within the ten mile  
3 evacuation zone.

4 A number of very valid concerns were raised during  
5 the question and answer period, February 24, 1982,  
6 meeting referred to above.

7 A member of the audience questioned the Ohio law  
8 that says that school buses cannot transport anyone but  
9 school children. Colonel Williams admitted this is an  
10 unresolved issue and is now before the Attorney General  
11 of Ohio.

12 Many people are concerned that there is no provision  
13 to test a general evacuation of the public, since actual  
14 movement of the people is the only truly accurate method  
15 of testing.

16 A number of people expressed concern about matters  
17 relating to the 50 mile ingestion zone, which I will now  
18 briefly address. Although the 50 mile ingestion zone is  
19 not considered in the Voorhees study, it must be  
20 considered in the event of an accident at the plant. The  
21 planning for the 50 mile zone has been left practically  
22 to chance.

23 At the above cited February 24th meeting, Colonel  
24 Williams admitted that there are no formal plans to carry  
25 out the emergency measures in the 50 mile zone and

1 encouraged communities to begin storing non-perishable  
2 foodstuffs. Deputy Sheriff Noble of Trumbull County  
3 asked where the money will come from for the 50 mile  
4 zones since his office is already suffering severe budget  
5 problems. Colonel Williams responded that the State has  
6 severe budget problems, too, which it does. It's now one  
7 billion dollars in debt. Williams mentioned the  
8 Price-Anderson Act which limits liability for nuclear  
9 plant accidents to 560 million dollars even though  
10 projected costs in the billions, even -- but it was never  
11 resolved.

12 Councilman Bill Chinock of Lakewood, who served on  
13 council for eight years had never heard of the State plan  
14 before the February 24th meeting and was told by Williams  
15 that only 350 copies of the plan had been made available  
16 because of the prohibitive cost of reproducing the 400  
17 pages.

18 Over two million people in seven counties, Lake,  
19 Ashtabula, Geauga, Trumbull, Summit and Portage, live  
20 within 50 miles of Perry. an awesome amount of  
21 organization would be required to implement the necessary  
22 emergency measures in the 50 mile zone, would include  
23 controls on milk and dairy products, cattle feed, water  
24 supply and food and produce.

25 The Perry plant is located oh Lake Erie, which is

1 the source of potable water for most of Northern Ohio.

2 The most productive farmland, especially dairy  
3 farms, lie to the east and south of Perry, such as Geauga  
4 and Portage.

5 Since the following would have to be undertaken in  
6 the 50 mile zone, nothing can be left to chance. Warning  
7 and education of the user public, monitoring for  
8 radiation, quarantining rationing, destruction of  
9 contaminated supplies by burning and burial and  
10 replacement of these supplies from sources outside the 50  
11 mile zone.

12 Now, it was requested that I limit this to 5 limits,  
13 so I am not going to go on with the next part of this  
14 presentation except to mention what it deals with.

15 I would like to know and I would like some type of a  
16 reply on this, what the current status is of the citizens  
17 task force petition, that's docket No. P. R. M. 50-31,  
18 which proposes extending the E. P. Z. from ten miles to  
19 20 miles?

20 Thank you.

21 MR. RAY: Thank you, Miss Klein.

22 Even though you haven't completed reading the whole  
23 document, it will be entered into the record.

24 I would have one question.

25 MS. KLINE: Yes.

1                   MR. RAY: You realize, do you, that FEMA is an  
2 agency that has responsibility of approval for such  
3 plans?

4                   MS. KLINE: Yes.

5                   MR. RAY: Have you made a copy of this available  
6 to them?

7                   MS. KLINE: No.

8                   MR. RAY: I would suggest you do it.

9                   MS. KLINE: Thank you.

10                  MR. RAY: We will now have a 15 minute break and  
11 I would like to commend everyone who has been concerned  
12 with the practical up to this time with observance of the  
13 schedule. We are right on the ball. That is unique.

14  
15                   (Whereupon a recess was had,  
16                   after which the meeting was  
17                   resumed as follows:)     .

1 MR. RAY: Before our session gets back into  
2 formal procedure, I would like to address several things  
3 with respect to statements by the members of the public.

4 First, for Subcommittee procedures we do not need 15  
5 copies. However, we had no idea -- no one communicated  
6 with the A. C. R. S. office -- to indicate they would be  
7 here, and so, therefore, we couldn't communicate with  
8 them.

9 If there is a problem from a personal cost  
10 viewpoint, you are paying for the copies whether A. C.  
11 R. S. makes them or whether you obtain them, because if  
12 A. C. R. S. makes them, it comes out of taxes; and we  
13 will be glad to reproduce as many copies as are going to  
14 be needed, either by the full Committee, which is 15, or  
15 fewer than that for the Subcommittee proceedings, if you  
16 will send us copies far enough in advance; but we can't  
17 be receiving today a copy and reproduce it. We don't  
18 have the facilities here. So we are not -- we certainly  
19 do not intend in any way -- I am talking now about A. C.  
20 R. S. and I think the same feeling could be expressed for  
21 the N. R. C. Staff -- to impose a burden on any members  
22 of the public in that respect. We couldn't be serving  
23 the public adequately if we did.

24 I would like, also, to say that we have been told by  
25 five other members of the public that they would like to

1 make statements. I am going to schedule time tomorrow  
2 for that purpose, and in order to keep things within the  
3 realms of practicality, each person will be allowed five  
4 minutes, no more than Miss Kline had; and that will be  
5 the period in tomorrow's program when that will be  
6 scheduled -- excuse me -- will be at tentatively 1:00  
7 o'clock tomorrow afternoon.

8 As of now, I know of no one else that wishes to  
9 participate in that respect. Therefore, that will be the  
10 program. Okay?

11 We will now hear a presentation by Cleveland  
12 Electric Illuminating Company representatives and I would  
13 like to call on Mr. Edelman.

14 MR. EDELMAN: Before I begin, my name is Murray  
15 Edelman.

16 Do I need the mike?

17 (No response.)

18 MR. EDELMAN: My name is Murray Edelman. I am  
19 Division Manager of Nuclear Engineering Construction  
20 Division for the Cleveland Electric Illuminating Company.

21 Before I start my formal presentation, I would like  
22 to clarify a few issues.

23 One, it is the intent of the Illuminating Company to  
24 complete our licensing process prior to fuel load of  
25 Perry 1. Therefore, we believe there will be no

1 outstanding issues that will exist at that time. We are  
2 therefore hopeful that a full power A. C. R. S. letter  
3 would be appropriate.

4 We believe the purpose of a 5 percent license is to  
5 allow those plants with outstanding issues to load fuel  
6 and perform low-power testing prior to the issuance of a  
7 full-power license. We hope and we anticipate not  
8 needing this option but we will see as time progresses.

9 In addition, there were a number of issues raised or  
10 questions raised by the A. C. R. S. with respect to  
11 specific technical issues. We would like to respond to  
12 those tomorrow as part of our formal presentations during  
13 our technical presentations tomorrow.

14 MR. RAY: Very good.

15 (Slide.)

16 MR. EDELMAN: As outlined in our S. E. R., we  
17 are presently heading towards our final organization that  
18 will support the Perry plant operation of Unit 1 as well  
19 as construction of Unit 2.

20 You heard a presentation from Mr. Davidson which  
21 described the system engineering construction group. I  
22 am a division manager. We have two managers, one which  
23 the staff met this morning, and that's the manager of  
24 nuclear construction that conducted our tour, which was  
25 Mr. Klein.

1           The second manager is Mr. Frank Stead, who is in the  
2 audience. Now, his appointment as manager will become  
3 effective July 1st. Therefore, I have not imposed on him  
4 today to make any presentations.

5           Mr. Stead -- however, I would like to give you a  
6 brief resume of Mr. Stead's background.

7           Mr. Stead has been with the Illuminating Company for  
8 17 years. He has a Bachelor of Mechanical Engineering  
9 from Cleveland State University and a Masters from Ohio  
10 State University, in Nuclear Engineer. He has worked in  
11 the fossil plant equipment and testing for our company  
12 for six years. He worked for eight years on the Perry  
13 project in both licensing and fuel as well as equipment,  
14 balance of plant equipment in the plant, and for the last  
15 two years we have had him on a semi-training program in  
16 our power supply group, which is our fossil plant group,  
17 where he has been serving as general supervisor of  
18 maintenance and operations of various fossil plants in  
19 the company, to give him a background of operating  
20 experience as well as the engineering background.

21           In addition to that, one of the questions that I  
22 would like to address at this time is the issue of the  
23 degrees of some of our people.

24           In our organization that I will describe to you we  
25 have over 15 engineers with nuclear engineering degrees

1 as well as five or I think six people with physics  
2 degrees in our project organization as well as  
3 mechanical, electrical and civil disciplines.

4 MR. RAY: Mr. Edelman, when you say project  
5 organization, you mean onsite and at headquarters or all  
6 onsite?

7 MR. EDELMAN: There is no headquarters with  
8 respect to Illuminating Company. All project people  
9 assigned to the project, Illuminating people, are located  
10 onsite and will remain onsite throughout the life of the  
11 plant.

12 MR. RAY: Thank you.

13 MR. EDELMAN: As a snapshot in terms of  
14 experience of the company.

15 (Slide.)

16 I am putting up a chart here of the number of  
17 degrees and science degrees of people in the various  
18 divisions throughout our company.

19 As you will note, presently we have 101 people with  
20 engineering degrees, 25 with related science degrees, for  
21 a total professional experience in man-years of over 1550  
22 man-years of experience.

23 The experience with respect to nuclear is over 850  
24 man-years of nuclear experience, which most of it is  
25 related to Perry plant experience, which directly relates

1 to the heavy involvement of our company in the design and  
2 construction of the Perry plant as well as commercial  
3 experience received from other nuclear plants and Nuclear  
4 Navy experience.

5 Mr. Waldron, who will describe the Perry plant  
6 organization later on this afternoon, will elaborate on  
7 our experience in terms of operating experience with  
8 respect to the operations staff.

9 (Slide.)

10 We talked about the ultimate organization or the  
11 organization that we are committed to at the time of six  
12 months prior to fuel load.

13 As you presently can see, we will have a vice  
14 president of nuclear, who will be directly responsible  
15 for the engineering, construction, operations and quality  
16 assurance of the Perry project.

17 He will have four managers reporting to him. Those  
18 managers are all now in place in terms of nuclear  
19 engineer, nuclear construction, the Perry Plant  
20 Department and the quality assurance effort, as well as  
21 our support and critical support areas of the Perry  
22 Project Services Department will report to the  
23 administrative services.

24 Everyone below the vice presidential line will be  
25 onsite full time and will remain there for the life of

1 the project.

2 (Slide.)

3 I would like to translate this into manpower that is  
4 committed to each one of the departments.

5 The Nuclear Engineering Department will have 96  
6 people assigned to it. We presently have those people  
7 onsite in terms of the manager, our licensing and fuels  
8 element, our administrative and special projects, and  
9 that's basically cost control, and of the project as well  
10 as records administration and our design and analysis  
11 section, from which the members of the independent safety  
12 engineering group will become members and I will  
13 elaborate on that a little further on.

14 MR. RAY: These 96 are not all technically  
15 qualified?

16 MR. EDELMAN: No. They are part of the 101  
17 people that have degrees. The 96 includes some  
18 technicians and clerical help, but I would guess that  
19 about 80 of those are degreed people.

20 The Nuclear Construction Department, which will be  
21 assigned to complete the construction of Unit No. 2, will  
22 include a test section of 72 people, construction  
23 engineering, nuclear construction administration, as well  
24 as outage engineering. We show zero at the time of fuel  
25 load for Unit 1.

1           We do recognize the important function to be  
2 prepared as soon as Perry 1 starts for the first  
3 refueling outage to make sure that is coordinated both  
4 from an engineering and operating prospective.

5                           (Slide.)

6           The Perry Plant Department will have 297 people  
7 assigned to it, and Mr. Waldron will elaborate on the  
8 functions and responsibilities, as well as the heavy  
9 emphasis on training and qualification of all of these  
10 people.

11                           (Slide.)

12           The Nuclear Quality Assurance Department will have  
13 73 people at the time of fuel load for Unit 1. It's  
14 important to note -- we will elaborate further -- that  
15 all of these people are Illuminating Company people,  
16 dedicated to support our quality assurance program both  
17 in construction as well as in the operation of the plant.

18           Mr. Ferrell will elaborate on the functions and  
19 responsibilities and qualifications of these people  
20 further on in our presentation.

21                           (Slide.)

22           The Perry Project Services Department will also be  
23 located onsite supporting us in the purchasing area as  
24 well as the backup of our computer system capabilities,  
25 facilities and services and will form the very important

1 section of the overall training coordination for the  
2 site.

3 (Slide.)

4 I would then like to elaborate slightly on each one  
5 of the departments, both the Perry Project Services  
6 Nuclear Engineering, as well as nuclear construction.

7 The people will be broken down into the following  
8 administrative areas, procurement, data systems,  
9 facilities and training. I would like to concentrate on  
10 the training aspects.

11 (Slide.)

12 We have --

13 MR. RAY: Mr. Edelman, body count is good from a  
14 viewpoint of commitment of resources; but I think we are  
15 more impressed if you tell us whether or not they are  
16 professionally qualified for the role they are playing.  
17 Certainly, those who follow you I would like to get that  
18 kind of a message.

19 MR. EDELMAN: When I get into the details of the  
20 Nuclear Engineer Department, the independent safety  
21 engineering group people, we will describe their  
22 professional qualifications that will be in those  
23 particular functions.

24 MR. CATTON: I would like to hear in particular  
25 about the qualifications of the personnel in training,

1           namely, this group here.

2                   MR. EDELMAN: Okay. The question related to the  
3           qualifications of our training people.

4                   The part I will talk about now is everything but the  
5           last box, which is the Nuclear Operations Training  
6           section. We will have a separate presentation today with  
7           respect to the qualifications of the trainers as well as  
8           the people that we have in the training section now, who  
9           are past trainers in our simulator training. We will  
10          elaborate on that point very specifically.

11                   As you noted onsite today, we have broken ground for  
12          our combined training center and emergency center, which  
13          will be located onsite. It will house the Perry  
14          simulator as well as training classroom facilities.

15                   The current activities of these four areas of the  
16          section involve the coordination of the non-Perry  
17          departments. What I am talking about are the  
18          non-operating departments training onsite. That is  
19          specifically handled by the Nuclear Operations Training  
20          Department, which Mr. Silakoski will elaborate on later.

21                   The training that we do involves the Q. A. and  
22          assessment as well as the training for long-term  
23          development of our people in terms of their professional  
24          development in both nuclear and non-nuclear aspects of  
25          the project.

1           At the time of fuel load the training element which  
2 is responsible for the operational training will be  
3 translated into this section with its own supervisor, and  
4 that's the portion that will be elaborated on  
5 specifically to answer the question posed by the  
6 committee.

7                           (Slide.)

8           I would like to now describe the Nuclear Engineering  
9 Department as it will be constituted to support the  
10 operations of the plant. These will all be Illuminating  
11 Company employees and each one of the sections of the  
12 plant -- of the department in terms of nuclear analysis  
13 and design, nuclear licensing and fuel and the records  
14 administration.

15                           (Slide.)

16           The first section is the Nuclear Design and Analysis  
17 Section, will be broken up into two units, headed by a  
18 senior project engineer.

19           The plant design element will be responsible for the  
20 operations modifications, licensing backfits,  
21 environmental and radiological monitoring. It will house  
22 our corporate health physics as well as our ALARA program  
23 interface, it will program our P. R. A. type work, our  
24 human factors engineer.

25           From it we will draw the people to form our

1 independent safety engineering group as well as plant  
2 water chemistry, N. D. E., I. S. I. work and rad waste  
3 engineer.

4 The support engineering work, the support  
5 engineering element, will look at our system elementary  
6 diagrams, our system P & D itself, auxiliary power  
7 systems responsible for the interface of our ERA system,  
8 which is our emergency response system, as well as  
9 tracking cost trends, insurance for fire protection,  
10 insurance coordination, equipment lists, as-builts and  
11 relay settings.

12 (Slide.)

13 MR. CATTON: Does C. E. I. have the capability  
14 of doing fuel reload analysis?

15 MR. EDELMAN: Yes, we do, and I will get into  
16 that aspect.

17 MR. CATTON: Thank you.

18 MR. EDELMAN: From this group we will form our  
19 independent safety engineering group. The five members  
20 of this group will have staggered terms of service to  
21 ensure continuity of experience. It is staffed by  
22 engineers and our technically qualified people who are  
23 committed for the qualifications of these people to meet  
24 ANSI and A. N. S. 3.1, Section 4.1 and 4.2 of Revised  
25 1981.

1           The I. S. E. G. chairman will report directly to the  
2 manager of nuclear engineering. Even though they are  
3 part of this section, the chairman of this report -- will  
4 report directly, to get upper level involvement, to the  
5 manager of the Nuclear Engineering Department.

6           I. S. E. G. will be a permanently standing group  
7 whose members are dedicated to these activities to insure  
8 safety of our project and plant on an ongoing basis and  
9 will be represented by disciplines both mechanical,  
10 electrical and quality assurance and bring in other  
11 disciplines as necessity, such as chemical and  
12 environmental engineering. We are committed to have this  
13 group in place and staffed with our qualified people six  
14 months prior to the fuel load of Unit No. 1.

15           MR. CATTON: Some plants in the country have  
16 members of their review board who are from the outside in  
17 order to get a more objective view.

18           MR. EDELMAN: We have our review boards besides  
19 the independent engineering group. We have our nuclear  
20 safety review board and our plant operating review  
21 committee.

22           Our nuclear safety review board is committed to  
23 bring in outside expertise beyond that of our own project  
24 where appropriate.

25           MR. CATTON: Thank you.

1 MR. RAY: To whom does that board report?

2 MR. EDELMAN: The Nuclear Safety Review Board  
3 will report to the vice president of nuclear.

4 The independent safety engineering group which is  
5 independent will use such tools now available to us from  
6 the industry, such as the INPO SEE-IN program and the  
7 INPO NOTEPAD program, which we are presently using with  
8 our staff now. They review agency licensing bulletins,  
9 N. R. C. bulletins and issues as they affect the safety  
10 design parameters of our plants. They will make design  
11 evaluations and recommendations to improve plant safety.

12 In addition, they will have the capability and will  
13 periodically review our operational quality assurance  
14 program to make sure it's being effectively implemented.

15 (Slide.)

16 Supplementing our -- supplementing these people we  
17 will use our architect engineer, Gilbert Associates, to  
18 provide engineering design services for Unit 1 during  
19 startup and operations for C. E. I. needs, their  
20 capability to assist us in our work.

21 We are committed to have General Electric assist us  
22 in the -- any area of nuclear steam supply system as well  
23 as our startup capability and the startup assistance that  
24 will be provided by General Electric will be elaborated  
25 by Mr. Waldron in his presentation.

1           In addition, we have Kaiser Engineering integrated  
2 into our construction management organization and we will  
3 use their expertise as required.

4           We also have an environmental consultant on board,  
5 that is N. U. S. Corporation, and they will assist us in  
6 our environmental monitoring program as well as our  
7 off-site environmental monitoring program and we will use  
8 our consultants as required.

9                           (Slide.)

10           The second section in the Nuclear Engineering  
11 Department is the Nuclear Licensing and Fuel Management  
12 Department.

13           The first part is fuel management. It's  
14 specifically addressing to your question.

15           This group will review the Perry fuel contracts,  
16 warranties, fuel performance, reload bids and fabrication  
17 schedules.

18           We will have the capability of doing our own thermo  
19 hydraulic analysis to analyze transients and safety  
20 analysis review.

21           We are developing our own computer programs with  
22 RETRAN and EPRI with our own capability to do the work  
23 ourselves.

24           We do have the capability of core nuclear analysis,  
25 in terms of core simulation and rod patterns.

1           In addition, Cleveland Electric Illuminating serves  
2 as the coordinator for all capital fuel contracts.

3           Mr. Davidson indicated that CAPCO was presently  
4 involved in three nuclear power plants, Perry,  
5 Davis-Besse and Zimmer. For all the U-30-0-8 contracts,  
6 all the conversion -- well, as well as all the capital  
7 fuel contracts, are all done by our C. E. I. fuel  
8 management people.

9           In the licensing area, these people will follow the  
10 F. S. A. R. modifications. They will have the  
11 responsibility to coordinate N. R. C. bulletins and  
12 orders to all the proper disciplines and organizations  
13 onsite. They will have the responsibility to file the  
14 Licensing Event Reports and filing the N. R. C. monthly,  
15 yearly, quarterly reports as required by our license.

16           In addition, they will supply the licensing support  
17 for the Unit 2 operation and, therefore, be able to  
18 coordinate any activities, its effects, from Unit 1 into  
19 Unit 2 licensing effort as well as Unit 2 back into Unit  
20 1.

21           MR. RAY: Mr. Edelman, please, on fuel  
22 management, you said that C. E. I. personnel are going to  
23 coordinate.

24           All three plants?

25           MR. EDELMAN: We do that presently.

1 MR. RAY: Did you from the onset of those other  
2 two plants?

3 MR. EDELMAN: There was at the onset a CAPCO  
4 coordination committee for which the Illuminating Company  
5 took over the staff and technical expertise from the  
6 onset of those three plants.

7 MR. RAY: So you have in house now the people  
8 that gained the experience on those plants?

9 MR. EDELMAN: Yes, we do.

10 MR. RAY: Thank you.

11 MR. EDELMAN: In addition, the licensing group  
12 will coordinate all our offsite emergency planning and  
13 drills that will take place according to what is required  
14 by our license.

15 (Slide.)

16 The last section of the Nuclear Engineering  
17 Department is the records and administration area, and  
18 this area handles the cost administration in terms of  
19 cash control, outage contracts, as well as the records  
20 management tracking systems and managing our records  
21 management program.

22 They in addition have an operational review function  
23 which reviews our contracts, reviews our contracts  
24 administration, similar to a -- I guess the closest  
25 analysis would be a Price, Waterhouse internal auditing

1 of ourselves in terms of managing of our own contract  
2 activities.

3 (Slide.)

4 The next department is the Nuclear Construction  
5 Department, and the Nuclear Construction Department will  
6 have -- has four sections in terms of construction  
7 engineering, test, construction management as well as  
8 outage engineering.

9 It is significant to note on Perry that the testing  
10 activity is done by the owners. Contractors are building  
11 it but the entire testing program is coordinated by the  
12 owners, both for Perry 1 and will be done for Perry 2,  
13 such as such that when the construction work is done, we  
14 take over the testing phase, both for the construction  
15 phase and pre-op testing and then turn it over to  
16 operations for the final testing program. We find this  
17 is a very effective way to coordinate the work onsite.

18 (Slide.)

19 The Nuclear Construction Section has a general  
20 supervisor headed by Illuminating Company people,  
21 construction manager onsite, which reports to him, which  
22 is a Kaiser man, as well as contract administrators and  
23 area superintendents who get the expertise from outside.  
24 Kaiser has hired people for us on their payroll which  
25 quote "were not long-term Kaiser employees," but rather

1 had extensive experience in building boiling water  
2 reactors that were employed on our site.

3 For example, our area superintendent in the reactor  
4 building area, which is the critical heart of the  
5 construction of the plant, was a man who worked for 23  
6 years as a construction superintendent for General  
7 Electric and built a number of General Electric boiling  
8 water reactors. He is on our site as quote "a Kaiser  
9 employee," but in effect he had many, many years of  
10 General Electric experience in building boiling water  
11 reactors.

12 (Slide.)

13 Our nuclear test section is responsible for the  
14 testing both on Perry 1 and will be responsible for the  
15 testing on Unit 2. We have this broken down with system  
16 test engineers responsible for each system in the testing  
17 phase, as well as test support in terms of calibration of  
18 instruments, as well as turn-over coordination in terms  
19 of the records management and the records program that  
20 has to be accompanying each system turn-over.

21 (Slide.)

22 MR. RAY: This is a coordinated effort by the N.  
23 S. S. S. supplier and your own personnel and so on?

24 MR. EDELMAN: We presently have in this area --  
25 the general supervisor of our testing program is an

1 Illuminating Company employee, who has been with us for  
2 ten years and prior to that he was a Senior Reactor  
3 Operator testing for General Electric. He now works for  
4 the Illuminating Company.

5 All of these key people under this are Illuminating  
6 Company employees supplemented by specialty consultants  
7 in each area, such that our test section now to support  
8 Unit 1 has 150 people in it, of which 50 people are  
9 Illuminating Company employees and 100 are specialty  
10 consultants in each particular area of expertise  
11 integrated into our organization under Illuminating  
12 Company management.

13 (Slide.)

14 In addition to the construction area, we have our  
15 people in a construction engineering section supporting  
16 the construction activities of each one of our 19 major  
17 contractors onsite. Perry is unique, and there is no one  
18 general contractor.

19 We have major contractors in piping, electrical,  
20 civil, N. S. S. S., such as General Electric, Pullman  
21 Power, Comstock, Newport News; and each one of those has  
22 their own program to implement in the field and  
23 construction.

24 Our people are here to interface and respond to  
25 questions that these people have with respect to any

1 field activities and they are there to support the  
2 construction, the completion of Unit 1 and will be  
3 available for Unit 2.

4 These engineers will be separate from the engineers  
5 in the Nuclear Engineering Department, which are  
6 dedicated fully for the support of Unit 1 during its  
7 operation.

8 (Slide.)

9 Finally, we have established the section, we haven't  
10 manned it but we recognize its importance, and that is  
11 the Operations Engineering Section, which will be  
12 handling the scheduling, the contracts administration as  
13 well as maintenance coordination for the first refueling  
14 outage of Perry 1. It will have heavy operator  
15 involvement to make sure it's properly designated what  
16 work has to be done at that time.

17 That concludes my remarks with respect to the  
18 organization of Perry.

19 I would like, however, to address one other specific  
20 issue.

21 Mr. Cordell Williams gave you a resume of the  
22 activities from the N. R. C. perspective of what was  
23 taking place as well as the Illuminating Company and our  
24 organization of quality assurance in 1978. At that time  
25 I was made manager of quality assurance and I would like

1 to give you the owner's perspective of what activities  
2 were taking place at that time.

3 Perry received, as you saw in Mr. Stefano's list,  
4 our full construction permit in May of 1977. Work prior  
5 to that time was performed under limited work  
6 authorizations onsite with very little safety work  
7 performed.

8 In the late fall of 1977, the N. R. C. Region 3 sent  
9 in a team of inspectors to Perry to review the work in  
10 our Quality Assurance Program.

11 As it turned out, the work performed at that time,  
12 mostly civil, was being performed correctly; but the  
13 project Quality Assurance Program was lacking in several  
14 areas.

15 After meeting with upper C. E. I. management  
16 personnel, the N. R. C. accepted our stop work on the  
17 activities with a program outlined to strengthen our  
18 corporate Quality Assurance Program.

19 At that time our project quality assurance force  
20 numbered about 50 people. That was one of the questions:  
21 How many people we had in quality assurance at that time?  
22 That included about 20 C. E. I. people.

23 We completely re-drafted our Quality Assurance  
24 Program, strengthening it in all areas.

25 The company made the commitment to move our entire

1 management team to the site, thus in 1978 we were  
2 probably the first utility to make the move which has  
3 since been emulated by many utilities around the country.  
4 We organized the site into major departments reporting  
5 directly to the vice president, with the Quality  
6 Assurance Department at the same level of authority as  
7 engineering and construction.

8 We specifically created a section in the Engineering  
9 Department at that time labeled Procedures and Records,  
10 and its total responsibility was to participate in the  
11 Quality Assurance Program redevelopment and  
12 implementation.

13 In addition to the line organization as we  
14 described, we created matrix responsibilities within this  
15 organization with respect to each safety-related  
16 contractor. By this I mean we assigned from the  
17 construction end a contract administrator.

18 From the engineering end we assigned a responsible  
19 engineer and from quality assurance we assigned a quality  
20 engineer to each one of our 14 safety-related contracts  
21 onsite.

22 This team reviews the total performance of each  
23 contract monthly and provides input into our quarterly  
24 assessment of our Quality Assurance Program performed  
25 site-wide.

1           In addition, we established an independent quality  
2 assurance advisory committee to provide assessment of our  
3 program as well as its implementation.

4           This advisory committee used outside consultants to  
5 review our program and its implementation.

6           During the last four years evaluations by this group  
7 as well as the Sauk reviews, as elaborated on by Mr.  
8 Williams, indicated good implementation of our overall Q.  
9 A. program.

10           This doesn't mean that we have not had quality  
11 assurance issues to contend with over the last four  
12 years. We have replaced several contractors because they  
13 did not have or demonstrate the ability to effectively  
14 implement their Quality Assurance Program.

15           Our audit program continues to give us an assessment  
16 of our performance.

17           We have started our organization to what I described  
18 as under 50 in 1978 to over 190 people today, including  
19 68 C. E. I. people in our quality assurance  
20 organization.

21           This manning level has given us the capability to  
22 address construction issues as they arise, as well as  
23 preparing us for the operational phase of Perry.

24           Mr. Ferrell will continue after I am done and  
25 describe our organization for quality assurance in the

1 operational phase.

2 In summary, the N. R. C. Staff has reviewed our  
3 activities in 1978 and accepted our course of action as  
4 sufficient to allow construction to continue and closed  
5 out all of their concerns in subsequent inspection  
6 reports in 1978 and early 1979.

7 Continued evaluation of our program by our advisory  
8 committee, our audit programs as well as the N. R. C. are  
9 ongoing activities.

10 The entire Perry Project is dedicated to  
11 implementing an effective Quality Assurance Program and  
12 we believe that results since 1978 have substantiated  
13 this commitment.

14 If there are no further questions, I would like to  
15 turn the meeting over then to Mr. Ferrall to address our  
16 organization for quality assurance for the operational  
17 phase.

18 MR. RAY: Mr. Edelman, before you leave the  
19 podium, I think you said your Q. A. organization had been  
20 expanded from 50 in September to 150 today.

21 MR. EDELMAN: 190 today, of which -- of the 190  
22 today, 68 of those are Illuminating Company employees.

23 MR. RAY: Okay. I was reaching for this,  
24 because it seemed to be on one of these other charts,  
25 that you had 73 people.

1 MR. EDELMAN: That's what we said we would be  
2 committed to have, an additional five people in our  
3 organization at the time of fuel load, all C. E. I.  
4 people. We have 68 today and we will have 73 by our  
5 budgeting processes by the end of next year.

6 MR. RAY: I am facing a situation where I am  
7 having trouble reconciling the 68 and 190.

8 MR. EDELMAN: 68 is Illuminating Company  
9 employees. The charts I showed of 73 will be  
10 Illuminating Company employees. The 190 includes  
11 consultant employees.

12 MR. RAY: Contractor.

13 MR. EDELMAN: Contractor people integrated into  
14 our organization as we have done in the construction and  
15 engineer areas.

16 MR. RAY: Those 68 are C. E. I.'s?

17 MR. EDELMAN: All C. E. I.

18 MR. RAY: Thank you.

19 Are there any other questions?

20 MR. EBBERSOLE: May I ask just a brief question?

21 It doesn't come quite clear to me to what extent C.  
22 E. I., just apart from the bookkeeping function of Q. A.,  
23 actually what corporate personnel perform design reviews  
24 of what they were being given by Gilbert Associates?

25 MR. EDELMAN: The review function of the

1 architect engineering design is both an engineer and a  
2 quality assurance responsibility, and we have first as  
3 part of our Quality Assurance Program run audits on the  
4 Gilbert design activities.

5 In addition, with the heavy involvement of our  
6 people, we have since 1972 reviewed P. and I. D.  
7 diagrams, flow diagrams, et cetera, for both operability  
8 to include in our design as well as constructability, and  
9 we feel this has helped in our construction as well as  
10 getting the plant done.

11 The next step is, we have as a project with our  
12 design people from the nuclear analysis and design  
13 section done a specific design verification of one very  
14 small aspect in terms of the electrical area of our  
15 people looking through, besides an audit function, an  
16 engineering reviewing of their calculations, their  
17 methodology, their approaches in terms of their design of  
18 the electrical system of our plant.

19 MR. EBBERSOLE: How many people did you have  
20 performing this engineering review on the average as the  
21 project evolved?

22 MR. EDELMAN: I would say our engineering staff  
23 never numbered under 100 people involved in various  
24 aspects of it.

25 MR. EBBERSOLE: Thank you.

1 MR. EDELMAN: The key to that is that the  
2 Illuminating Company prior to this had been a utility  
3 heavily involved in the engineering design of our own  
4 part before nuclear and used the expertise of these key  
5 people into the nuclear.

6 MR. CATTON: What kind of role do the  
7 consultants play?

8 MR. EDELMAN: Which consultants?

9 MR. CATTON: You said there were 190, of which  
10 68 were C. E. I. employees. I am referring to the 130 or  
11 so, 122.

12 MR. EDELMAN: They performed -- the bulk of  
13 those people are second level surveillance inspectors  
14 provided to us.

15 In our program the contractor provides the first  
16 level inspection in terms of his Quality Assurance  
17 Program.

18 Take piping, for example, as a contractor.

19 Pullman Power provides their own Quality Assurance  
20 Program, their own Q. A./Q. C. programs. Our inspectors,  
21 which we assign, we might have 10 inspectors assigned to  
22 piping activities, are second level surveillance on top  
23 of the contractor's program with certain specific witness  
24 and hold points put in that our second level inspection  
25 people must inspect.

1           For instance, they are travelers in terms of fitup  
2 of piping. So the bulk of our consultants are in the  
3 inspection role as a surveillance, second level  
4 surveillance.

5           In addition, we have quality assurance engineers  
6 with years of experience supporting us from Gilbert  
7 Associates integrated as quality engineers into our  
8 organization with our own engineering people reviewing  
9 the design and documents and procedures of the  
10 contractors. So that integrated organization is where we  
11 are using that consultant people to supplement ours in  
12 our organization.

13           MR. CATTON: Thank you.

14           MR. EBBERSOLE: As a result of this review  
15 effort, can you cite a few outstanding examples which  
16 were really changes made to the Gilbert designs according  
17 to your preference or conservatisms or whatever you may  
18 have imposed on the design as a result of this? In  
19 short, what was the product of this design review?  
20 Certainly it must not always have been confirming that  
21 Gilbert was right every time.

22           MR. EDELMAN: The answer to that question is no,  
23 it is not always.

24           I think the first area that would come to my mind is  
25 in our balance of plant area where we insisted on a lot

1 more water-treatment facilities than were basically  
2 incorporated in terms of demineralizer, et cetera,  
3 concerning our fossil boilers, we insisted on a lot more  
4 water treatment capability than was originally put in the  
5 design.

6 In addition, I am just trying to follow the plan  
7 around and I will give you some more examples. We  
8 insisted on an open de-aeration system in our feedwater  
9 system, which was not in the basic design.

10 MR. EBBERSOLE: Before you go further, you are  
11 talking about commercial type things. Talk about safety  
12 things.

13 MR. EDELMAN: In addition, there are a number of  
14 aspects of the control room design in terms of safety of  
15 operation that were included because we included our  
16 operations people in the review so that it would be a  
17 control room that would be more operable so that the  
18 safety of the plant would be enhanced.

19 I would like to defer some specific examples to our  
20 people tomorrow in their presentations that can elaborate  
21 on the specifics for you.

22 MR. EBBERSOLE: Thank you.

23 MR. CATTON: Can I just ask one more question  
24 before you leave?

25 In one of these types of operations you can bring

1 people in to kind of guide you through the morass of  
2 getting these things done or you can have your own people  
3 play the leadership role.

4 I did ask the question before and I didn't really  
5 understand the question, but that's what I was trying to  
6 get at.

7 MR. EDELMAN: In the quality assurance area or  
8 in the --

9 MR. CATTON: I am interested in all areas, but  
10 quality assurance.

11 MR. EDELMAN: In quality assurance we tried to  
12 bring in people with lots of experience and we would use  
13 their expertise to develop our expertise so we would be  
14 prepared for the operation of the plants. This is not  
15 something that we did over the last two years, this is  
16 something for ten years. Bring the expertise to given  
17 areas to develop our younger engineers, they grew up with  
18 the design, they relied on the consultants who had gone  
19 through it before, so we would be ready.

20 MR. CATTON: Have you begun to move the  
21 consultants out yet?

22 MR. EDELMAN: At this point I have to honestly  
23 say no, the consultants have not been moved out yet but  
24 we are about at that apex where we will probably be  
25 moving consultants out over the next several years,

1 specifically in the construction end of it, not so much  
2 in the engineering support.

3 MR. FERRELL: Good afternoon. My name is Ron  
4 Farrell and I am the manager of Nuclear Quality  
5 Assurance.

6 Many of the questions that you asked are contained  
7 in my presentation so, hopefully, we can go through those  
8 and I will pick up some of the time.

9 I would like to make a couple of remarks before I  
10 start the organizational presentation.

11 I would like to review with you this afternoon our  
12 organization for the operation of Unit 1.

13 I would first like to make the point that Perry, as  
14 you have heard this morning from some of the other  
15 speakers, is not a turn-key project. Our people have  
16 been involved since 1978 heavily in the project  
17 organization in total, and that concept has run through  
18 the Q. A. organization.

19 This organizational concept that we are using has  
20 impact on the way our Quality Assurance Program is  
21 implemented, and I would like to review that quickly,  
22 perhaps to aid in understanding.

23 (Slide.)

24 If you look at our Quality Assurance Program, it  
25 operates in a three-tiered concept. At the bottom is the

1 safety-related contractors presently doing construction  
2 onsite.

3 There are 15 safety-related contractors doing work  
4 at Perry. These 15 safety-related contractors each have  
5 their own Quality Assurance Program that has been  
6 approved and is monitored by the Nuclear Quality  
7 Assurance Department.

8 These contractors employ -- again, not to confuse  
9 you with numbers -- but these contractors employ  
10 approximately 240 people doing quality-related work.  
11 That work is associated with first level Q. C.  
12 inspection, audits, ready work procedure and the  
13 implementation of that work procedure. This is in  
14 addition to the 190 people that we spoke of earlier, of  
15 which 68 are C. E. I. employees.

16 The second tier is the one I just finished  
17 discussing, which is the Cleveland Electric Illuminating  
18 Company Project Organization Quality Assurance Program,  
19 and, obviously, at the very top is the Nuclear Regulatory  
20 Commission and their review of all the programs  
21 underneath them.

22 I would like to go through a couple of other and  
23 make a couple of other comments that I think are germane,  
24 is that the organization that's in place at Perry in  
25 quality assurance and I, as the manager, have total

1 responsibility for the Quality Assurance Program and its  
2 implementation.

3 As the manager of the Nuclear Quality Assurance  
4 Department, I presently report to the vice president of  
5 system engineering and construction and will report to  
6 the vice president of the nuclear group. In that  
7 capacity, in that reporting relationship I have an equal  
8 status with the manager of nuclear construction  
9 engineering presently and will have equal status and the  
10 same reporting relationship as the manager of the Perry  
11 Plant Department.

12 One other point I would like to make before we go  
13 through the detailed organization is that the Q. C.  
14 function under the operational organization, that is the  
15 first level surveillance and inspection, is a Quality  
16 Assurance Department responsibility. That is not totally  
17 unique but it is a difference if you look around the  
18 country. Sometimes that Q. C. inspection is within the  
19 operations group and our company under our program for  
20 operations, that will be a Q. A. responsibility.

21 I would like to go through the organization and  
22 point out that --

23 (Slide.)

24 -- these numbers that are indicated in the  
25 organizational blocks are, indeed, C. E. I. employees.

1           The basic premise under which this organization was  
2 developed is that those people associated with the  
3 operational Q. A. side, once Unit 1 goes operational,  
4 will all be C. E. I. employees, as well as all the  
5 people that are in the procurement and administration  
6 section. Those will all be company employees. That  
7 explains the differences in the numbers in the block.

8           You will notice that a very minor part of the 73  
9 total that we are planning to have after operational will  
10 be assigned to constructing Unit 2. The separation that  
11 is implied in this organization is that those people  
12 associated with the construction of Unit 2 will be  
13 separate. Those people having to do with the operation  
14 of Unit 1 and the common facilities will be in their own  
15 self-contained groups.

16           I would like to quickly review the functions of  
17 these individual organizations.

18                   (Slide.)

19           The construction quality section basically continues  
20 the functions as presently constituted, and that is, they  
21 will build Unit 2. In that capacity they will provide  
22 the quality engineering support for the contractors,  
23 which includes second-level inspection and surveillance,  
24 procedure review and approval, contractor related  
25 non-conformance, dispositions, review and approval of the

1 work procedures, the contractors' use, and, finally,  
2 process audits.

3 In addition, once Unit 1 goes operational, this  
4 group will provide the support for turn-over and  
5 pre-operational acceptance testing, which Mr. Edelman  
6 talked about earlier.

7 In this capacity they will approve systems and  
8 subsystems for turn-over, they will provide first-level  
9 inspection, they will provide test procedure review and  
10 approval. They will also work off non-conformances and  
11 they will have in-plant test surveillance programs and  
12 also they will provide the turn-over for coordination.

13 MR. RAY: Mr. Ferrell, if I may interrupt you.

14 MR. FERRELL: Yes, sir.

15 MR. RAY: On your first chart, the organization  
16 line of responsibility, line of reporting, it isn't clear  
17 from this where your engineering review design is. Mr.  
18 Ebbersole discussed this and while I thought I understood  
19 the questions, now I am not clear as to how that fits in  
20 with your overall organization.

21 MR. FERRELL: Presently that support comes out  
22 of our auditing function and is conducted in conjunction  
23 with our engineering people, and under our new -- that  
24 would be under the audit element.

25 MR. RAY: Well, doesn't your audit organization

1 audit all of these other functions?

2 MR. FERRELL: Yes, they do.

3 Under our present organization we have two separate  
4 audit functions, one which has to do with program review  
5 and that which is separated into construction audits  
6 primarily right now.

7 We are going to combine those into one audit  
8 function.

9 The design review activity is done in conjunction  
10 with the engineering people. I am not --

11 MR. RAY: Well, I think there is something  
12 missing in the message this chart gives and I would  
13 suggest that you give consideration to expanding in some  
14 respects what is audited --

15 MR. FERRELL: Okay.

16 MR. RAY: -- to indicate it includes engineering  
17 design.

18 MR. FERRELL: All right, very good.

19 MR. RAY: Either that or show somewhere on this  
20 chart the function of engineering getting Q. A.  
21 consideration.

22 MR. FERRELL: Okay.

23 MR. EBBERSOLE: Excuse me. I have something on  
24 that.

25 I might comment to the Staff that when you pick up

1 the S. E. R. and turn to Section 17, quality assurance,  
2 you immediately learn that the only thing in there is  
3 operations quality assurance, that there is virtually  
4 nothing in there about this important aspect that we are  
5 talking about of what is the operations assurance -- I  
6 mean what is the assurance in the bookkeeping context,  
7 but the design and construction phase, which would  
8 include some statements made about the engineering review  
9 and what it did or did not do or what it found out and  
10 what its results were. There is nothing whatsoever in  
11 the S. E. R. about this.

12 MR. RAY: You get the impression it's basically  
13 scorekeeping?

14 MR. EBBERSOLE: Yes, that's right, that's the  
15 problem.

16 MR. STEFANO: Mr. Ebbersole, this principally is  
17 a Region 3 evaluation of the staffing and that's why it's  
18 generally covered in Chapter 13 of the S. E. R.

19 You are correct in Chapter 17 we talk about the Q.  
20 A. as a program only, and where we get into the  
21 management that has been separated out as part of the  
22 overall Applicant's organization, which includes Q. A.,  
23 and you will find in Chapter 13 they did discuss that.

24 MR. EBBERSOLE: In conduct of operations?

25 MR. STEFANO: Yes, sir.

1 MR. EBBERSOLE: A strange section.

2 MR. STEFANO: I can't disagree with you.

3 MR. FERRELL: Are there any further questions or  
4 just go on?

5 MR. RAY: You may proceed.

6 MR. FERRELL: The second --

7 (Slide.)

8 -- major responsibility I would like to review is  
9 the operations quality section.

10 This group will provide maintenance and modification  
11 support and they will review and approve maintenance work  
12 authorization. They will provide first-level inspection  
13 and surveillance, planning and implementation, coordinate  
14 nondestructive examination and I. S. I. support, they  
15 will resolve and approve any non-performances and these  
16 inspectors are qualified in accordance with a REG-GUIDE  
17 1.58. The operations people will be contained within  
18 this section. They will refine and maintain the  
19 operational Q. A. program, making modifications as  
20 necessary, keeping it up-to-date.

21 In addition, they will provide quality support for  
22 the plant operations and in the startup test program.

23 This group will plan and conduct surveillance of  
24 plant operations and surveillance testing of such things  
25 as fire protection, health physics, security, emergency

1 planning, they will verify the deficiency corrective  
2 actions, participate in safety reviews and review  
3 procedures and instructions as required.

4 The last section --

5 (Slide.)

6 -- of this will be called procurement and  
7 administrative services.

8 This group will serve the dual role of providing  
9 support for not only the construction that is still  
10 taking place for Unit 2 but also for the operational  
11 here.

12 Here we have combined functions that tend to support  
13 both sides of the house, the operational and the  
14 construction side. Non-destruct examination support for  
15 both constructions and operations will hear. These  
16 personnel are in accordance with the American Society for  
17 Nondestructive Testing and A. S. M. E. Section 11  
18 requirements.

19 There will be an administrative and records activity  
20 which will collect, review and temporarily store quality  
21 records. They will coordinate and assist project  
22 personnel in N. R. C. reporting and maintaining the  
23 status of tracking those documents, and they will refine  
24 and maintain the construction program which will still  
25 stay in place for the balance of the construction

1 activity.

2 Finally, the procurement group will provide quality  
3 support for the procurement and manufacturing activities,  
4 and this will perform receipt and inspection planning and  
5 implementation, source inspection planning and  
6 implementation, it will review and approve procurement  
7 documents, they will conduct the vendor audits and  
8 evaluation, and they will approve and review the vendor  
9 non-performances and in this process, support the spare  
10 parts procurement.

11 The last group is an audit function. We are going  
12 to pull together the auditing activities of the Q. A.  
13 Department and the supervisor of that group will report  
14 to the manager to insure available of audit results.

15 Finally, I would like to take a look at the present  
16 staff already on our payroll.

17 (Slide.)

18 Of the 68 presently employed C. E. I. people in the  
19 Quality Assurance Department, 30 are degreed  
20 professionals, 28 are technical personnel. This  
21 represents 575 years of professional experience, 150  
22 years of Perry Project experience and 65 years of other  
23 nuclear experience.

24 That, then, in summary, is the organization for  
25 after Unit 1 goes operational.

1 MR. RAY: I don't want to split hairs or seize  
2 straws, but you talk about 58 and show 68.

3 MR. FERRELL: The other remaining. These are  
4 degreed professional or technicians. The other ten are  
5 clerical and we didn't count them.

6 Mr. Waldron then will cover the operational Perry  
7 Nuclear Power Plant.

8 MR. WALDRON: My name is John Waldron, Perry  
9 Plant Manager for Cleveland Electric Illuminating Company  
10 since 1974. My responsibilities include operation and  
11 maintenance of the Perry plant upon the completion of  
12 system pre-operational testing which is now under the  
13 Nuclear Construction Department.

14 I also have the Plant Training Unit reporting to me  
15 at this time with the intention of moving the training  
16 unit over to the Perry Project Services Department at  
17 fuel load as was described earlier.

18 (Slide.)

19 As shown on this chart, there are three sections,  
20 operations, maintenance and technical section reporting  
21 to the superintendent of plant operations and two  
22 additional sections, radiation protection and nuclear  
23 services, which report directly to me.

24 (Slide.)

25 The functions performed by these elements of the

1 Perry Plant Department are shown on this chart. The  
2 Nuclear Services Section includes security. Presently  
3 they include the training function, administration and  
4 plant helpers.

5 The radiation protection section has health physics,  
6 chemistry, rad waste operation, and emergency planning.

7 Although rad waste operation is frequently an  
8 operations function and would be over in the operations  
9 section, at Perry we feel that the 24-hour responsibility  
10 for the operation and handling of all radioactive waste,  
11 including preparation for shipment or temporary storage  
12 onsite, is better handled by a separate element.

13 This work is conducted from a separate control room  
14 in the building and requires the close attention that  
15 only a dedicated operating crew can give it.

16 This approach is as a result of advice from most  
17 operating B. W. R.'s we visited and we did extensively  
18 pick the brains of the operating plants to approach the  
19 staffing and qualifications of our people.

20 MR. CATTON: The training seems kind to be  
21 buried in your organization.

22 Will it eventually have a more prominent place or is  
23 this a permanent position for it?

24 MR. WALDRON: No. As I say, training function  
25 at fuel load will be under the Perry Project Services

1 Department. It will be a section in that department.

2 MR. CATTON: All right.

3 MR. WALDRON: The technical section has  
4 instrument and control technicians, we have reactor  
5 engineers, they have the operations engineers, including  
6 the Shift Technical Advisors, and they have the  
7 day-to-day engineering support for the operating staff,  
8 performance engineering, et cetera.

9 In the operations section we have the shift  
10 operations at the Perry plant, we have a goal of six  
11 operating shifts, allowing us one shift full time to be  
12 in training.

13 All licensed operators on our staff are management  
14 personnel, both the Reactor Operator and Senior Reactor  
15 Operator levels.

16 In the maintenance areas, we have mechanical  
17 electrical maintenance function, maintenance planning and  
18 stores operation.

19 (Slide.)

20 This gives you a summary of our staffing for the  
21 Perry plant. Currently, we have 195 employees reporting  
22 to me with a projected year end total of 289.

23 Unit 1 staffing is to be 297, not including  
24 training, which we talked about, which will be moved over  
25 to the Project Services Department and does not include

1 the security guards other than the guards' supervision.

2 Recently our hiring success has been excellent and  
3 we do not envision any difficulty in meeting the  
4 projected goal this year. To date the attrition has been  
5 quote low. I show about 6 percent for the department in  
6 the last 12 months, with about 2 percent in operations.

7 We do have on-board or job acceptances for all the  
8 licensed operator positions we require to staff Unit 1  
9 with allowance for reasonable attrition.

10 (Slide.)

11 MR. RAY: Mr. Waldron, I would like to come back  
12 to Dr. Catton's comment of a few moments ago to the  
13 effect that training seems to be buried down deep.

14 I don't look on that as a nuclear service. I look  
15 on things like security, administration, plant helpers,  
16 clerical, you name it.

17 I think training is a much, much more important  
18 activity in itself and should be a section in itself.

19 I would like to hear your philosophy as to why you  
20 are subordinate to this extent.

21 MR. WALDRON: Currently, training reports  
22 directly to me at the time.

23 MR. RAY: That's the way I think it should be.

24 MR. WALDRON: We do not have in place a general  
25 supervisor in that section. As a result both training

1 and security report directly to me.

2 MR. CATTON: That's an accident. If you had a  
3 fall, you would report through him.

4 MR. WALDRON: We intend to staff the position  
5 later on within the existing operation.

6 MR. RAY: The very fundamental quality of the  
7 performance of your organization is going to depend on  
8 that role.

9 MR. WALDRON: That's my primary function, is the  
10 training and staffing of the plant department and this is  
11 what we have embarked on. The majority of our time has  
12 been spent in that activity, you are right.

13 MR. RAY: And it's going to be that way  
14 permanently. You are going to have to train and train  
15 and train and re-train and re-train. You know that.

16 THE WALDRON: We understand that and there will  
17 be a separate section at fuel load time in the other  
18 department.

19 MR. RAY: Why don't you maintain it as such?

20 THE WITNESS: I am sorry. Why don't --

21 MR. RAY: Why don't you maintain it as a  
22 separate section in your primary organization beyond fuel  
23 load?

24 THE WITNESS: It will be. It will be a separate  
25 section.

1 MR. RAY: Take me back to the chart that shows  
2 the plant department, the plant manager, and under  
3 nuclear services it says training.

4 When is this going to be effective? It's not their  
5 reporting to you. It's reporting to the section head of  
6 nuclear services, if I read the chart correctly.

7 MR. WALDRON: That is correct.

8 MR. RAY: You say it's going to be, it's going  
9 to report directly to you.

10 Does that mean --

11 MR. WALDRON: It does currently report directly  
12 to me, because as Dr. Catton stated, I do not have a  
13 general supervisor heading that section up at the report.

14 MR. CATTON: That means it's reporting to you by  
15 accident not through a plan?

16 MR. WALDRON: Strictly by accident.

17 MR. RAY: What you are saying is this chart, the  
18 line of reporting indicated, you are going to pull  
19 training out of the Nuclear Services Section and  
20 establish a training section itself?

21 THE WALDRON: There is a training section for  
22 the project which will incorporate at fuel load the  
23 nuclear planning for the operations.

24 MR. RAY: And when you can get an appropriate  
25 head for that section, you will maintain it that way?

1 THE WALDRON: There is a general supervisor at  
2 the present time for the project training, and that will  
3 come under his responsibility at the fuel load.

4 MR. RAY: I think the two are chasing each other  
5 around the circle, head and tail. I am talking about  
6 this chart.

7 MR. WALDRON: I understand.

8 MR. RAY: Down under Nuclear Services Section  
9 you have training. That's not a section responsible for  
10 training. It's one of the sub-elements of that section.

11 Is this going to be your permanent arrangement after  
12 fuel loading or is this temporary?

13 MR. WALDRON: This is a temporary arrangement up  
14 to fuel load.

15 MR. RAY: This is a temporary arrangement?

16 MR. WALDRON: Up to fuel load.

17 MR. RAY: So this is current?

18 MR. WALDRON: This is current, except this one  
19 position is not current, so these functions report  
20 directly to me as a result --

21 MR. RAY: I see. Now, what happens after fuel  
22 loading with respect to training? Will it stay in this  
23 section with a supervisor or in there -- or will it be in  
24 --

25 MR. WALDRON: No. There is a section onsite

1 that will incorporate -- I think this chart was already  
2 up on the board.

3 (Slide.)

4 It's the director of training with a general  
5 supervising engineer. This position is currently filled  
6 onsite. They do not have the Nuclear Operations  
7 Training. I have that in my department right at the  
8 moment.

9 This is in my department. That will move over into  
10 the project training organization at fuel load, at which  
11 time they will have all of these functions under one  
12 head.

13 MR. CATTON: Could I try?

14 MR. RAY: Yes, please.

15 MR. CATTON: Do you happen to have a diagram  
16 that is going to show your permanent structure after fuel  
17 load?

18 MR. RAY: A diagram equivalent to this?

19 MR. CATTON: Showing how I can trace this all  
20 the way up to the V. P. of Nuclear Engineering.

21 MR. WALDRON: We have that.

22 MR. CATTON: Nuclear Operations.

23 (Slide.)

24 MR. WALDRON: The training element will be the  
25 Perry Project Services Department. You saw on the other

1 chart the functions included in that. It will be  
2 reporting to the Vice President of Administrative  
3 Services.

4 MR. CATTON: And the training is two levels down  
5 within that bottom block?

6 MR. WALDRON: No, it's one level down from this  
7 bottom block. It reports to the manager.

8 MR. CATTON: Who --

9 MR. RAY: Where are you on that chart?

10 MR. WALDRON: Right here.

11 (Indicating.)

12 MR. RAY: So the training isn't going to stay  
13 with you?

14 MR. WALDRON: No, it is not, due to the  
15 attention required for operating the plant, the training  
16 is too important a function to allow it to be  
17 subordinate, the day-to-day responsibilities that that  
18 entails.

19 We are, in fact, building a simulator training  
20 center at the site, which will handle our  
21 re-qualification training, as you mentioned before, the  
22 various skills training for technicians and so on, plus  
23 coordinate all the training that is required for the  
24 project organization.

25 MR. CATTON: On your various review records, I

1 think I saw one -- I don't remember what the letters were  
2 --

3 MR. RAY: S. E. G. or something --

4 MR. WALDRON: Safety Engineering Group.

5 MR. CATTON: Then you indicate that there was a  
6 review board that reported to your V. P. nuclear.

7 MR. WALDRON: Station Nuclear Review Committee.

8 MR. CATTON: Are any of the people that make up  
9 these two groups going to come from your training arm?

10 MR. WALDRON: No, sir.

11 MR. CATTON: Don't you think that might not be a  
12 good area? Perry operators are the ones that run the  
13 plant.

14 MR. WALDRON: It could well be an important  
15 consideration.

16 MR. CATTON: I would think it might be.

17 Is what you have just told us consistent with what  
18 we are going to hear next on training?

19 MR. WALDRON: Yes.

20 (Slide.)

21 MR. WALDRON: This is a similar diagram to what  
22 you saw earlier for the project as a whole.

23 Primarily, it details the experience of the degreed  
24 professionals in the Perry Plant Department, of which we  
25 currently have 27 people with a total nuclear experience

1 of 161 man-years, about half of which is from the  
2 participation in Perry Project, about 10 percent  
3 commercial nuclear experience and the remainder is  
4 primarily from the non-commercial Navy nuclear programs.

5 Project Unit 1 staff will include an additional ten  
6 degreed professionals prior to fuel load. Some of these  
7 are currently participating in the pre-operational fuel  
8 testing program and will come back into our plant  
9 department.

10 (Slide.)

11 MR. CATTON: In that previous chart that you  
12 have, how do you classify nuclear experience?

13 MR. WALDRON: Experience in three qualifications  
14 that I broke down the 161 man-years, about half of that  
15 is participation in the Perry Project, about 10 percent  
16 is commercial nuclear power plant experience, other  
17 operating plants, and the remainder is the non-commercial  
18 Nuclear Navy experience primarily.

19 MR. CATTON: All right.

20 MR. WALDRON: Overall both the degreed and  
21 non-degreed professional -- operating plant experience  
22 for the Perry Plant Department totals about 925 man-years  
23 for the supervisors and management and technicians and  
24 operators.

25 (Slide.)

1           And this breaks down into non-commercial nuclear as  
2 a primary source, which is the Navy nuclear power plant,  
3 commercial nuclear and Perry Project there.

4           With minimal commercial nuclear power plant  
5 experience we have committed to having on each shift an  
6 experienced startup engineer to 100 percent power for one  
7 year following fuel load. The Staff's position noted in  
8 the S. E. R. is that the startup engineer is required  
9 until attainment of nominal 100 percent power or for one  
10 year, whichever occurs later. We are very concerned  
11 about this license condition because of the open-ended  
12 format. We do have contractual agreements for startup  
13 support from General Electric Company through the 100  
14 percent warranty run and G. E. has committed to providing  
15 the qualified, experienced personnel on shifts which do  
16 not meet the commercial operating experience with our own  
17 people. We expect to have a couple of shifts that will  
18 have that.

19           We believe the operating staff will have attained  
20 the intended experience by the end of a full year's  
21 operation. We believe it would be more appropriate to  
22 evaluate the situation at the end of one year's operation  
23 in the event the power level is reached that is less than  
24 100 percent, would unconditionally require the extra  
25 startup support indefinitely.

1           At the present time we have provided many of the  
2 operating plant personnel who have had previous  
3 non-commercial nuclear experience with training and  
4 operating plants. The operations general supervisor  
5 spent a total of six months in Millstone Station,  
6 participating in refueling outage, including restart, and  
7 at Dresden during power operation and startup following  
8 one of their refuelings.

9           A shift supervisor is currently on loan to  
10 Mississippi working on shift at the Grand Gulf, going to  
11 be on there full load until 100 percent. Eight other S.  
12 R. O.'s, certified S. R. O.'s, are currently at or  
13 scheduled to go to one of several operating B. W. R.'s  
14 this year for operating experience in accordance with  
15 INPO. These tours are from six weeks to six months in  
16 duration and are designed to meet most of the A. N. S.  
17 3.1 1981 guidance for operating plant experience.

18           Plants which have afforded us access for extensive  
19 commercial experience --

20                           (Slide.)

21           -- include Brunswick, Davis-Besse, Dresden,  
22 Monticello, Grand Gulf, Millstone, Hatch, LaSalle, Peach  
23 Bottom.

24           All of these are boiling water reactor plants,  
25 except Davis-Besse, of which we are a part owner and have

1 utilized since the initial construction and operation of  
2 that plant for experience in training.

3 (Slide.)

4 Individual experience for the key plant staff  
5 individuals is shown on this picture here. I have a  
6 Bachelor's Degree in Mechanical Engineering, ten years on  
7 the Perry Nuclear Power Plant project, completed S. R.  
8 O. certification on the Perry simulator at G. E.  
9 training center and prior to that had 18 years in our  
10 commercial fossil plants.

11 Plant operations superintendent is currently  
12 unfilled. However, we are committed to having a  
13 qualified individual with commercial nuclear power plant  
14 experience to fill this position at least one year prior  
15 to fuel load.

16 The operations general supervisor has a Bachelor's  
17 and Master's Degree from the Naval academy in applied  
18 mathematics, completed nuclear power, nuclear officer  
19 training program in the Navy for the nuclear submarines.  
20 He has been on the Perry Project eight years, certified  
21 S. R. O. on the B. W. R. simulator and was also assigned  
22 to our commercial -- large commercial operating plants  
23 for experience in that regard.

24 Our maintenance general supervisor has a Bachelor of  
25 Mechanical Engineering Degree, four years on the Perry

1 Project, he is currently R. O. certified at the Perry  
2 simulator and had ten years in commercial fossil plants.  
3 The nuclear services general supervisor position is  
4 currently unfilled.

5 The technical general supervisor has a Bachelor of  
6 Electrical Engineering Degree and M. B. A. He has been  
7 six years in the Perry Project. He is S. R. O.  
8 certified on the Perry simulator and had three years in  
9 our system operations and test department prior to  
10 assignment to this job.

11 Radiation protection general supervisor has a  
12 Bachelor of Science Degree in Chemical Engineering, six  
13 years in the Perry Project. He worked four years at the  
14 Davis-Besse plant during the startup and had four years  
15 in our large super-critical generating stations prior to  
16 the Perry Project.

17 Shift supervisors, of which we have currently five  
18 designated, as I mentioned, are primarily from the  
19 Nuclear Navy, one of whom has six years commercial  
20 nuclear power plant experience, S. R. O. licensed. They  
21 have 28 years in the Perry Project, all are S. R. O.  
22 certified, with five years commercial fossil plant  
23 experience.

24 We cycle these people into our large commercial  
25 fossil plants when they first came aboard to get

1 experience with handling the large generating units.  
2 Their average power plant experience is over 13 years.

3 The unit supervisors, which report to the shift  
4 supervisor, are S. R. O.'s, primarily again from the Navy  
5 nuclear program. They have 14 years' commercial fossil  
6 experience, all are S. R. O. certified on the B. W. R.  
7 simulators and average power plant experience is about 11  
8 years.

9 (Slide.)

10 Supervising operators, which are the R. O. licensed  
11 individuals, we have 12 designated at this time,  
12 likewise, primarily from the Navy nuclear program, 26  
13 years' experience at the Perry Project, which means they  
14 have been here about two years on the average of each.

15 You have some commercial fossil plant people  
16 involved in that group. Currently eight are S. R. O.  
17 certified and eight are R. O. certified on simulators.  
18 Their experience is 10 years.

19 To round out our licensed operator candidates of  
20 which we expect to have about 40 for the -- go up for  
21 licenses ultimately, we have 23 in the training program,  
22 representing about 150 years of Navy nuclear experience,  
23 some minimal commercial and some minimal Perry Project  
24 experience. Their average power plant experience for  
25 these people, which would be the training for the R. O.

1 positions for Unit 1, would be currently about  
2 seven-and-a-half years.

3 As mentioned earlier, all licensed positions are in  
4 management.

5 Selection for these jobs is based solely on  
6 qualification. Seniority is not a factor. As a result,  
7 we have been readily able to fill these positions with  
8 high performance individuals who are able to keep up with  
9 a fast paced training program.

10 The non-licensed operators are bargaining unit  
11 employees. Here, each job candidate is carefully  
12 selected and tested with one criteria for acceptance  
13 being the probability that the individual will be  
14 ultimately able to license as a Reactor Operator.

15 Presently, we are using General Physics  
16 Corporation's basic math and science test along with  
17 psychological examinations, plus interviews for selection  
18 into the training program.

19 Selection test performance is only one of the  
20 criteria for entry into the operator line of progression.  
21 However, a validated selection process has been our goal  
22 from the start.

23 One of the key developmental efforts which is  
24 important in bringing the staff up to speed to take over  
25 the operation of the plant is participation in startup

1 activities.

2 At Perry the plant staff is currently involved with  
3 --

4 (Slide.)

5 -- the operating procedure development, surveillance  
6 procedure development, emergency plan preparation and  
7 implementation, control room human factors study, system  
8 walk down and turnovers, fire protection plan  
9 preparation, system operating description preparation,  
10 and, of course, the daily operations of the plant and the  
11 startup procedure development. Experience gained from  
12 these assignments ensures a greater depth of  
13 understanding of plant functions and limitations.

14 Continuous on-shift involvement with plant operation  
15 was begun starting early this year.

16 If there are no questions further on this, I would  
17 like to introduce Tony Silakoski, our training  
18 supervisor.

19 MR. AXTMANN: I do have a question, Mr. Waldron.

20 MR. WALDRON: Yes.

21 MR. AXTMANN: Going back about three slides, I  
22 think I saw that the total commercial nuclear power plant  
23 experience of your staff was something like 68 years.

24 Does that sound right to you?

25 MR. RAY: 68. It's the second column on that

1 slide.

2 MR. AXTMANN: Commercial nuclear. Perhaps my  
3 memory is poor but the last few plants we have looked at  
4 were numbers we will over 200, 270 being a typical one.

5 I am just wondering whether you have considered what  
6 a tiny number that looks like.

7 MR. WALDRON: We are recruiting in that area to  
8 the extent that they are available. It's a very  
9 difficult task to bring aboard people with qualifications  
10 that meet the needs in this area. There is a lot of  
11 demand. There is a lot of demand to keep them in the  
12 plants where where they are presently. Most plants are  
13 expanding dramatically.

14 MR. RAY: Do you have anybody in your  
15 organization who are licensed from previous assignments  
16 or organizations?

17 MR. WALDRON: Yes.

18 MR. RAY: How many?

19 MR. WALDRON: Two.

20 MR. RAY: I think I agree with Dr. Axtmann.  
21 This looks very, very slim.

22 MR. AXTMANN: We have reviewed four or five  
23 plants in the last six or seven months where the utility  
24 was starting up their first nuclear plant and that number  
25 looked very, very tiny.

1 MR. RAY: The 207 man-years on P. N. P. P., I  
2 have a respect for but, that's different from operations.

3 Has the Staff given any consideration to requiring  
4 on shift qualified contractor personnel with proper  
5 operating experience and licensing and so on in their  
6 past histories for any period of time?

7 MR. SCHWENCER: Mr. Ray, I attempted to allude  
8 to that very generally earlier today on 13-6.

9 MR. RAY: I guess I wasn't listening hard  
10 enough. I am sorry.

11 MR. SCHWENCER: I will briefly indicate the  
12 Staff's position, is each operating shift should have  
13 assigned to it a person who has commercial B. W. R.  
14 startup-slash-operating experience for a period of one  
15 year from fuel load date until attainment of nominal 100  
16 percent power, and we have also identified that as one of  
17 the license conditions as of right now.

18 MR. RAY: I wasn't listening hard enough. My  
19 apologies.

20 How about an advisor of those qualifications for the  
21 plant manager?

22 MR. STEFANO: Let me introduce, Mr. Chairman,  
23 Mr. Eric Peterson, from our license qualifications  
24 branch.

25 MR. PETERSON: Yes, we have all -- excuse me.

1 We have also required that the operating staff, staff  
2 management, has a person with operating experience on  
3 commercial nuclear power plants in their management.

4 MR. WALDRON: We have committed to that.

5 MR. PETERSON: And Perry has committed to meet  
6 that.

7 MR. RAY: For how long a period?

8 MR. PETERSON: Up to one year.

9 MR. RAY: After what?

10 MR. PETERSON: After --

11 MR. RAY: After commercial operation.

12 MR. PETERSON: Yes, after commercial operations.

13 MR. RAY: Do the shift people for one year --  
14 they are required for one year after the commercial  
15 operation, after commercial?

16 MR. PETERSON: Yes, up to 100 percent or one  
17 year.

18 MR. AXTMANN: 100 percent of what?

19 MR. RAY: Rated power.

20 MR. PETERSON: Power. We brought it up at our  
21 audit meeting in January where teams from N. R. C. and I.  
22 E. audited Perry. We had several concerns about the lack  
23 of operating experience, both at the management level and  
24 at the operations level and that's why these requirements  
25 were set up, and they have been met, they all have been

1 met by Perry.

2 MR. RAY: Well, it's obvious if an organization  
3 hasn't operated nuclear plants in its history, then it's  
4 going to be slim in this respect; but as Dr. Axtmann  
5 said, some others have been much more successful in their  
6 recruiting program in obtaining past experience than you  
7 have.

8 I don't know what the secret of their success is and  
9 there are limitations on the availability within the  
10 industry. You might talk to some of them.

11 MR. WALDRON: Yes.

12 MR. RAY: You are recruiting, you say.

13 Through what media? How are you going about this to  
14 get the right people available?

15 MR. WALDRON: We are advertising in  
16 publications. We send people to the sources.

17 MR. RAY: Do you find people with experience  
18 qualified in operations with other plants come to you?

19 MR. WALDRON: Occasionally, yes.

20 MR. RAY: Voluntarily?

21 MR. WALDRON: Yes, come to us, yes.

22 MR. RAY: Job shopping?

23 MR. WALDRON: Yes.

24 MR. RAY: It's a shame that's the source you  
25 have to go to.

1 MR. WALDRON: We look very carefully at the  
2 individual other than the fact that he has the operating  
3 experience. We look at high-quality people that will do  
4 the job. You can buy the experience.

5 MR. RAY: Well, this is something into which you  
6 can expect the full Committee to sink its teeth into real  
7 hard.

8 MR. WALDRON: We are utilizing the INPO offices  
9 to get our people into the operating plants for the  
10 experience at those other stations that I showed on the  
11 chart. That's no problem with doing that. It's between  
12 doing this that they are doing this instead of starting  
13 up the plant but it is a critical function that we are in  
14 fact embarked upon.

15 MR. RAY: Okay. Any other questions?

16 (No Response.)

17 MR. WALDRON: I would like to introduce Tony  
18 Silakoski, the training supervisor. Mr. Silakoski is a  
19 1974 graduate of the Naval Academy, with B. S. Degrees in  
20 aerospace and mechanical engineering. He served five  
21 years in the Navy nuclear power planning. He has  
22 received S. R. O. certification in the Perry simulator  
23 and has been with C. E. I. in the Perry Project for three  
24 years. He will describe the training program as it now  
25 stands with present staff.

1 MR. SILAKOSKI: Since 1972 when formal training  
2 began for the first person assigned to the Perry Plant  
3 Department, training has been viewed as an invaluable  
4 tool in the evolvement of a capable operating experience.  
5 Since the occurrence of T. M. I., training has received  
6 increased emphasis with the establishment of a formal  
7 training unit with major responsibilities in the areas of  
8 N. R. C. licensed operator training, auxiliary operator  
9 training, instrument and control technician training,  
10 maintenance mechanical training, staff training and shift  
11 technical advisor training.

12 Additionally, the unit also provides administrative  
13 services to other training organizations with regard to  
14 activities with regard to training scheduling and  
15 training record keeping.

16 The development of health physics technician and  
17 chemistry technician training and qualification programs  
18 are being conducted by radiation protection section  
19 personnel currently. This will become a training unit  
20 responsibility prior to fuel load.

21 Security officer training and fire brigade training  
22 will continue to be conducted by professional fire  
23 protection personnel and security people in the security  
24 unit.

25 MR. EBBERSOLE: Pardon me just a minute.

1 In that connection, there is a general problem.

2 When you turn over a security training function to a  
3 security specialist or fire protection function to a fire  
4 specialist, in most cases they know virtually nothing  
5 about what they are trying to protect both in the  
6 security and fire protection sense unless they have some  
7 strong interface with nuclear design and the nuclear  
8 weaknesses in the plant.

9 How do you accomplish that? Do you follow me?

10 MR. SILAKOSKI: I understand what you are  
11 looking for.

12 The security officer training will be conducted by  
13 an officer which is specifically designated for that.

14 The fire brigade training will be conducted by the  
15 fire marshal. Each one of those individuals will receive  
16 and will have an interface with the operations training  
17 department where they can draw on personnel.

18 We will also provide familiarization training with  
19 the plant to those individuals.

20 The fire brigade training, for example, requires  
21 that one of our S. R. O. candidates be trained as the  
22 fire brigade leader, and so this interplay will come into  
23 effect where the S. R. O. candidate helps the fire  
24 brigade, the fire marshal conducts what is important.

25 MR. EBBERSOLE: You will do that through the

1 operating people?

2 MR. SILAKOSKI: That is correct. We will do it  
3 through the people that are being trained, and as a  
4 feedback function we will also provide services through  
5 the actual training unit into the security unit where  
6 they actually will have as the operations side of the  
7 training unit providing training services to the  
8 specialist in the security area as far as what he has to  
9 be worried about protecting.

10 MR. EBBERSOLE: When you train, for example, a  
11 particular group of fire protection people, who will  
12 inform them what they are not to do when they come in to  
13 actually to put out a gross fire? In general, you may  
14 face the problem of being highly selective in how they  
15 put out that fire.

16 MR. SILAKOSKI: The fire brigade leader is an S.  
17 R. O. licensed individual, who will be normally the unit  
18 supervisor in the case of a fire.

19 MR. RAY: He will be an S. R. O.

20 MR. SILAKOSKI: Licensed individual.

21 The way the fire brigade is currently set up is that  
22 the unit supervisor in the case of the activation of the  
23 fire brigade will assume the lead duties, the fire  
24 brigade leader duties.

25 MR. RAY: Let's assume we have a fire and the S.

1 R. O. is on shift as an S. R. O. Is he yanked out of  
2 that assignment to head the brigade and put that fire  
3 out?

4 MR. SILAKOSKI: That is correct.

5 MR. RAY: Who takes over?

6 MR. SILAKOSKI: The shift supervisor is  
7 available there and I believe we also have an additional  
8 -- well, we have two S. R. O.'s on shift.

9 MR. RAY: So there are some in the same role  
10 there, to back him up in the operations room?

11 MR. SILAKOSKI: That is correct, that is  
12 correct.

13 MR. CATTON: Could you put that slide back for a  
14 moment?

15 MR. SILAKOSKI: Yes, sir.

16 (Slide.)

17 MR. CATTON: You told us what you were going to  
18 do about the security officer and fire brigade.

19 Why don't you tell us a little bit about what you  
20 are going to do with the first column?

21 MR. SILAKOSKI: The first column, in this area,  
22 sir?

23 (Indicating.)

24 MR. CATTON: Yes. I can't see where you are  
25 pointing, but --

1 MR. SILAKOSKI: This is the licensed operator,  
2 and -- but I will get into that a little later.

3 MR. CATTON: All right, fine.

4 Is this the old or the new?

5 MR. SILAKOSKI: This is the current.

6 Currently, there is the Perry Plant Department  
7 Manager, the Nuclear Services Section General Supervisor,  
8 which is unfilled. The training unit itself is headed by  
9 a supervisor responsible for directing overall training  
10 activities and acting as the contact point for other  
11 training organizations and activities. He is S. R. O.  
12 certified and possesses a baccalaureate described as  
13 indicated by the S. R. O. supervisor and the C for  
14 college degree.

15 An engineer will report to the training supervisor.  
16 He is normally S. R. O. certified and provides  
17 instruction in theoretical and academic areas.

18 Five nuclear training instructors will also -- are  
19 assigned to provide scheduling, delivery of training for  
20 those topics specific to the N. R. C. licensed operator  
21 training and associated non-licensed topics.

22 MR. CATTON: Is the training unit supervisor  
23 yourself?

24 MR. SILAKOSKI: Yes, sir.

25 Training coordinators assigned to provide scheduling

1 continuity and coordination of efforts among the nuclear  
2 training instructors.

3 MR. CATTON: Do you intend to use the RETRAN  
4 code, R-E-T-R-A-N?

5 MR. SILAKOSKI: No, sir.

6 MR. CATTON: You don't?

7 MR. SILAKOSKI: No, sir.

8 MR. CATTON: Don't you think it might be a good  
9 idea to use that code?

10 MR. SILAKOSKI: I can't answer that question,  
11 sir.

12 MR. BECK: We are developing in-house capability  
13 for use of RETRAN right now and there is no reason why  
14 that couldn't include operators.

15 MR. CATTON: You understand why I think it might  
16 be a good idea?

17 MR. BECK: Yes, transient help.

18 MR. SILAKOSKI: Training of technicians and  
19 maintenance mechanics is conducted by four skills  
20 training coordinators -- instructors and one skills  
21 training coordinator. These instructors are chosen  
22 specifically for the expertise and specialty areas  
23 required to support the dedicated skills training  
24 programs.

25 MR. RAY: I feel -- before you take that down, I

1 feel I should know, but I don't what is the C means in  
2 the block.

3 MR. SILAKOSKI: I mentioned that the C means a  
4 person has a baccalaureate degree, a college degree.

5 MR. RAY: Thank you.

6 MR. SILAKOSKI: Of the positions which were  
7 shown, 11 are currently filled. Of these, three are  
8 temporarily filled by operations section personnel.  
9 Seven persons within the unit have -- have been  
10 identified for the Senior Reactor Operator qualified  
11 positions. Five are presently S. R. O. certified and two  
12 are in a training status.

13 Three skills instructors and one training  
14 coordinator are also currently assigned, the positions  
15 are filled.

16 When training requirements exceed the capabilities  
17 of the training unit staff, an additional assistance is  
18 obtained from qualified personnel, usually from the  
19 operations section or from the Perry Project Services  
20 training section.

21 As mentioned before, the training units at fuel load  
22 will become part of the Perry Project Services Department  
23 and as such will become part of the Perry Project  
24 Services section, and all of these people will be  
25 absorbed into that section.

1 MR. CATTON: Are you the only one in this  
2 training group that has any college training or are some  
3 of those seven up there who have college training?

4 MR. SILAKOSKI: The --

5 MR. CATTON: In particular, mechanical  
6 engineering.

7 MR. SILAKOSKI: Out of these right now, I have two  
8 baccalaureate degrees. The skills training coordinator  
9 has college course work with regard to metallurgical  
10 sciences, although he does not have a degree.

11 A number of the nuclear training instructors have  
12 the basic math and some of the science that goes along as  
13 prerequisites for the engineering degrees. They have not  
14 gotten into specialty courses.

15 MR. CATTON: Is there anybody who has any  
16 training in things like fuel mechanics, heat transfer,  
17 how steam generators work, things like that?

18 MR. SILAKOSKI: The training background for --  
19 well, myself from the Navy Nuclear Power Program and my  
20 college background.

21 The skills training coordinator with approximately  
22 12 years' experience with Babcock & Wilcox.

23 MR. CATTON: At what level?

24 MR. SILAKOSKI: He was in training program  
25 development primarily.

1 MR. LIPINSKI: Pre-T. M. I. or post-T. M. I.?

2 MR. SILAKOSKI: Both, both.

3 MR. LIPINSKI: Post-T. M. I.

4 MR. RAY: There has been a bigger emphasis in  
5 terms of the hydraulic training and heat transfer  
6 training.

7 MR. SILAKOSKI: He has been involved in both.

8 The nuclear training instructors of which I  
9 indicated we have seven people currently working in those  
10 positions, all of them have previous Navy experience in  
11 the nuclear power program, various amount of years. Most  
12 of them are qualified to the watch supervisor positions.

13 MR. CATTON: Is there anybody in that program  
14 who has a background in training? The reason I ask this  
15 is that you talk to some of the groups who are faced with  
16 the problem of training operators, particularly when it  
17 comes to experience about things like thermal hydraulics  
18 and so forth, that they are not particularly included in.  
19 It's a real challenge.

20 MR. SILAKOSKI: When we talk about the thermal  
21 sciences, I will get into the fact that we do have a  
22 university providing many of those services for us.

23 With regard to the specific skills, the majority of  
24 the nuclear instructors which I mentioned came from the  
25 Navy also spent at least two years as a prototype at the

1 classroom and in-hall in Davis.

2 MR. CATTON: This is not the Navy.

3 MR. SILAKOSKI: I agree.

4 MR. CATTON: The guys are going to work eight to  
5 five and go have a beer.

6 MR. SILAKOSKI: I understand.

7 The person I mentioned, training coordinator, was  
8 with Babcock & Wilcox, in training and development.

9 MR. CATTON: Do you plan to run this on company  
10 time or their time?

11 MR. SILAKOSKI: Company time.

12 MR. CATTON: Good.

13 MR. SILAKOSKI: While instruction is conducted  
14 primarily by training unit personnel, the expertise of  
15 professional organizations is utilized to augment the  
16 development of certain instructional programs where the  
17 singular utilization of Perry personnel would be  
18 insufficient.

19 Specifically, C. E. I. commissioned Ohio State  
20 University to develop a nationally accredited college  
21 program which provides operators with onsite college  
22 courses in calculus, chemistry, physics and thermal  
23 sciences, which can be applied toward an engineering  
24 degree.

25 Ohio State University is also the prime contractor

1 providing the initial development of the general employee  
2 training programs and radiological controls programs.

3 Another local educational institution utilized  
4 extensively is Lakeland Community College. It provides  
5 the basic -- the calculus and the sciences instruction  
6 onsite to the operators in concert with Ohio State  
7 University.

8 The N. S. S. S. supplier, General Electric Company,  
9 maintains a standing contract with Perry to provide  
10 specialized training services. These services include  
11 certification of personnel through an N. R. C. approved  
12 training program on the leased Perry control room  
13 simulator and other programs including topics such as the  
14 station nuclear, chemistry technicians training,  
15 radiological rod drive mechanism training, maintenance  
16 training to name a few.

17 Other vendors have been utilized periodically.

18 The University of Wisconsin has been used for  
19 instructor training on a seminar basis.

20 The General Physics Corporation provides both basic  
21 academic training materials for the licensed operator  
22 training programs as well as licensed candidate testing  
23 and evaluation.

24 (Slide.)

25 While training facilities include sufficient

1 classroom space to accommodate, permanent training  
2 facilities are under construction.

3 The completion of this training facility in mid-1983  
4 will provide approximately 29,000 square feet of space  
5 devoted specifically to training.

6 Located in this building will be the Perry control  
7 room simulator which will be installed at a date to be  
8 determined some time between building completion and  
9 mid-1986.

10 Additionally, vendor facilities, such as General  
11 Electric's Vallecitos, California, facilities are  
12 utilized to support specialized equipment training.

13 However, whenever possible and available, onsite  
14 equipment and laboratories are utilized.

15 MR. AXTMANN: Mr. Silakoski, if I remember,  
16 almost all of the S. R. O.'s if not all of the S. R.  
17 O.'s qualified on a simulator; is that right?

18 MR. SILAKOSKI: Yes, sir.

19 MR. AXTMANN: Was that a Perry specific  
20 simulator or was that somebody else's simulator?

21 MR. SILAKOSKI: Approximately one-third, I would  
22 say, of the people who are qualified right now are  
23 qualified on the Dresden simulator, with subsequent work  
24 on the Perry simulator. The remaining people are  
25 qualified on the Perry control room simulator.

1 (Slide.)

2 Perry Reactor Operator and Senior Reactor Operator  
3 candidates are directly hired and will not generally have  
4 experience as lower grade operators at Perry prior to the  
5 initial licensing process. However, they have been  
6 specifically chosen for their positions by virtue of  
7 there previous Naval or commercial experience and their  
8 successful completion of the minimal training  
9 requirements specified for their positions.

10 The chart shows the progression pattern which would  
11 be from the Reactor Operator position, supervisor  
12 operator, to the unit supervisor senior position, then to  
13 the shift supervisor position.

14 The supervising operator position normally consists  
15 of a minimum of about 1,900 -- excuse me -- 1,696 hours  
16 of training, of which approximately 1,400 are contact  
17 hours, have been completed and the remaining will be  
18 completed prior to the initial licensing process.

19 The unit supervisor would complete all of the  
20 supervising operator requirements, plus an additional 416  
21 contact hours of training to insure intimate knowledge of  
22 the duties and responsibilities of the unit supervisor as  
23 well as fostering increased understanding of plant  
24 equipment and phemonena.

25 Similarly, the shift supervisor normally completes a

1 minimum 272 hours of training in addition to that of the  
2 supervising operator and unit supervisor.

3 Since the inception of the Perry simulator training,  
4 this program has been used as the major post-interview  
5 screening tool to eliminate personnel which are not  
6 likely to successfully complete the licensed operator  
7 training program.

8 MR. CATTON: How many have you eliminated?

9 MR. SILAKOSKI: Successful -- I will explain the  
10 chart here, if I can.

11 Successful completion of the minimum position  
12 training requirements is necessary prior to taking the N.  
13 R. C. license examination. To date, 46 personnel have a  
14 attended G. E. simulator training. Of these additional  
15 -- not of these, but an additional 15 are currently in  
16 training at this time.

17 Of the personnel, 46 which have completed the  
18 simulator training, 9 R. O., 30 at S. R. O. level, for a  
19 total of 39 with a certification success rate of  
20 approximately 85 percent.

21 So to answer your question, we would have weeded out  
22 15 percent at this time.

23 Of these --

24 MR. RAY: Excuse me. Do you have any head  
25 counts on how many people have entered the program at

1 Ohio State's courses and so on?

2 MR. SILAKOSKI: Yes, I will get into that, sir,  
3 on a succeeding slide.

4 Of the personnel which have certified, 12 engineers  
5 have completed the simulator, 12 S. R. O., 2 R. O. are  
6 certified. Approximately 10 engineers from these are  
7 expected to be represented for the N. R. C. license  
8 exam.

9 Also not shown on this slide but of significant  
10 mention is that Perry has completed Perry control room  
11 simulator training for several Illuminating Company  
12 executives, one executive vice president, two vice  
13 presidents and four department managers. One department  
14 manager is certified as a Senior Reactor Operator.

15 (Slide.)

16 Finally, for the senior operator candidates  
17 accredited college courses in calculus, chemistry,  
18 physics and thermal sciences totaling approximately 70  
19 quarter hours are presented onsite in cooperation with  
20 Lakeland University and Ohio State. This training  
21 provides instruction in the plant thermal sciences to  
22 meet the need for upgraded knowledge in this area to  
23 assist the operator to mitigate the effects of potential  
24 accidents and transients.

25 To date, 13 operators have completed at least 66

1 quarter hours and a number of these will be enrolled in  
2 additional courses this summer for the remaining 70, and  
3 another ten operators have completed at least ten quarter  
4 hours.

5 MR. CATTON: This is over what period of time?

6 MR. SILAKOSKI: This is over a period of time  
7 starting the beginning of -- the end of 1980, so it's  
8 approximately a year-and-a-half.

9 MR. CATTON: That's something less than two  
10 courses in a year-and-a-half?

11 MR. SILAKOSKI: No. Well, I am sorry. This ten  
12 operator candidates down at the bottom have just started  
13 that following their simulator training which ended in  
14 April, so these ten people have come back from simulator,  
15 began courses in April. These 13 have started their  
16 courses either the end of 1980 or the beginning of 1981.

17 At the inception of this program here it amounted to  
18 almost up to four courses a quarter. We normally run  
19 about two courses a quarter here.

20 I might point out that this program here is being  
21 run on the operators own time and it has been rather  
22 well received at this point. We do provide some overtime  
23 basis.

24 MR. CATTON: Do you pay their tuition and so  
25 fourth?

1 MR. SILAKOSKI: Yes, we do.

2 MR. RAY: Where are the courses taken  
3 physically?

4 MR. SILAKOSKI: Onsite at Perry. We provide the  
5 classrooms.

6 (Slide.)

7 Non-licensed operator training provides the  
8 necessary skills and knowledge for the plant operator to  
9 perform his duties and also to provide for a succession  
10 path to the licensed operators position. These three  
11 positions would dove-tail into the supervising operator,  
12 Reactor Operator positions shown on the previous slide.

13 The progression would start as the plant assistant,  
14 as the entry level position, to plant attendant, and then  
15 to plant operator. The contact hours training are  
16 progressive, so the plant assistant to move to the plant  
17 assistant must complete 360 hours and the plant operator  
18 to 884 hours. The plant operator receives enough  
19 training to allow him to take independent action under  
20 the circumstances, receive sufficient training to sharpen  
21 their skills to act under supervision of the plant  
22 operator.

23 (Slide.)

24 Providing advisory support to the shift supervisor  
25 is the S. T. A. Although a degreed individual, he

1 receives an additional 744 contact hours of training in  
2 system construction and operations, transient and  
3 accident analysis, procedures and technical  
4 specifications, degraded core training, emergency plan,  
5 reactor physics and thermal sciences and control room  
6 simulator instruction.

7 This training establishes his credibility on shift.

8 His training is of such intensity that completion of  
9 the G. E. station nuclear engineer course and final  
10 simulator senior operator certification would complete  
11 the prerequisite training for a station nuclear engineer.

12 MR. CATTON: Who supplies this training?

13 MR. SILAKOSKI: The technology training is  
14 either supplied by General Electric as part of the front  
15 course to go into simulator or provided by C. E. I.; the  
16 transient and accident analysis is to be developed and  
17 will be provided by C. E. I. The -- actually, who will  
18 provide the materials may be contracted out.

19 Procedure and specifications, technical  
20 specifications, the training unit, degraded, will be by  
21 the training unit; emergency plan by the training unit;  
22 reactor physics and thermal sciences will either be made  
23 by a college, O. S. U. or Lakeland Community College or  
24 the training unit and control simulator instruction will  
25 be by the training unit.

1           The G. E. station nuclear engineers course is, of  
2 course, supplied by G. E. as is the simulator S. R. O.  
3 certification.

4                           (Slide.)

5           For other jobs in the plants such as maintenance  
6 mechanics and technicians, weak skill areas are  
7 identified and training criteria then assigned to upgrade  
8 their skills prior to assignment to a higher-level  
9 position.

10           The hours displayed are typical of the training  
11 completed by an entry-level person for the maintenance  
12 mechanics or the instrument control or chemistry and  
13 health physics technicians.

14           I would like to point out here that for an entry  
15 level mechanic would start out as a mechanics assistant,  
16 and again the chart is progressively -- it shows 390,  
17 progressing to Grade 2 Mechanic, 605 and finally to a  
18 Grade 1 Mechanic, additional 634, plus a secondary skill.

19           For these positions, staffing has proceeded from the  
20 higher-level positions down.

21           At this time almost all of the plant's staff  
22 presently on board are experienced personnel fully  
23 qualified in their basic craft skill. These people have  
24 been receiving better training on better equipment and  
25 instrumentation installed in the plant, either in school

1 onsite or in other parts of the country.

2 Basic training programs for the beginning employees  
3 are being developed at this time, that will allow  
4 qualified and experienced employees to train and advance  
5 to higher-level jobs.

6 All training programs are being prepared based on  
7 detailed position descriptions which have been prepared  
8 for each job in the plant department.

9 The training will also cover specific needs  
10 identified by supervision which address the requirement  
11 for familiarity with installed equipment.

12 Job and task analyses as developed by INPO will be  
13 used when available for developing the adequacy of these  
14 training programs. Personnel will be required to  
15 complete the proscribed minimal training requirements for  
16 the position prior to being assigned duties in the  
17 position to which the requirements apply. The goal is to  
18 provide sufficient pertinent training to all Perry plant  
19 personnel, to provide assurance that they will be capable  
20 of performing the tasks associated with their positions  
21 under both normal and abnormal conditions.

22 I will take any questions.

23 MR. RAY: Any questions?

24 (No Response.)

25 MR. RAY: Thank you, Mr. Silakoski.

1 MR. DAVIS: Excuse me, I have one.

2 MR. RAY: Yes.

3 MR. DAVIS: There are no B. W. R. Mark 6  
4 reactors operating in the United States at which you  
5 could get on-line training for people, but there is one  
6 in operation in Japan, as I understand it.

7 Has there ever been any consideration of using that  
8 experience to help train some of your people or is that  
9 not feasible?

10 MR. SILAKOSKI: To send people to Japan?

11 MR. DAVIS: That would be one way, or trying to  
12 get feedback from their experiences on how the plant was  
13 behaving.

14 MR. SILAKOSKI: I would consider sending  
15 somebody to Japan as being not feasible.

16 With regard to receiving feedback, we have received  
17 feedback through channels, through General Electric, with  
18 regard to various problems or design considerations and  
19 development of computer displays with regard to what may  
20 be being used at the Japanese station.

21 MR. COLEMAN: Excuse me. My name is Bill  
22 Coleman.

23 In addition to what he mentioned, we have an  
24 agreement with Thai Power, the K'oshan plant, which is  
25 the B. W. R., and that agreement is more of an

1 information exchange agreement, where they have agreed to  
2 share their experience both in engineering and operations  
3 with us and we have agreed to share that same experience,  
4 maybe some of the expertise that we have here as far as  
5 engineering and different things with them. So that  
6 agreement is in place.

7 MR. DAVIS: Very good. Thank you.

8 MR. RAY: Thank you, Mr. Silakoski.

9 Does that complete the C. E. I. presentation for  
10 today?

11 MR. COLEMAN: Yes, sir,

12 MR. EDELMAN: Yes, sir.

13 MR. RAY: The meeting will adjourn until 8:30  
14 tomorrow morning in this same room; and once again I  
15 would like to commend you for having kept very, very,  
16 very closely under trying circumstances with our  
17 schedule, and I would hope that we can do as well  
18 tomorrow.

19 MR. EDELMAN: Thank you.

20 MR. COLEMAN: Thank you.

21 (Whereupon the meeting  
22 was adjourned until the hour  
23 of 8:30 o'clock A. M.)  
24  
25

NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the  
Advisory Committee on Reactor Safeguards

in the matter of: Cleveland Electric Illuminating Company

Date of Proceeding: June 28-29, 1982

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

Place of Proceeding: Cleveland, OHIO

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

Gary L. Sonntag

Official Reporter (Typed)

Gary L. Sonntag

Official Reporter (Signature)