

ORIGINAL  
UNITED STATES  
NUCLEAR REGULATORY COMMISSION

---

IN THE MATTER OF:

METROPOLITAN EDISON COMPANY

DOCKET NO:

50-289-SP  
(Restart Remand on  
Management)

LOCATION: HARRISBURG, PENNSYLVANIA

PAGES: 30,109 - 30,347

DATE: WEDNESDAY, DECEMBER 5, 1984

TR-01 0/1

Add 1 copy to ASUBP, E/W-439

ACE-FEDERAL REPORTERS, INC.

Official Reporters  
444 North Capitol Street  
Washington, D.C. 20001  
(202) 347-3700

8412100152 841205  
PDR ADOCK 05000289  
T PDR

NATIONWIDE COVERAGE

Sim 1

1 UNITED STATES OF AMERICA  
2 NUCLEAR REGULATORY COMMISSION  
3 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD  
4

5 ----- X  
6 In the Matter of: :  
7 METROPOLITAN EDISON COMPANY : Docket No. 50-289-SP  
8 (Three Mile Island Nuclear : (Restart Remand on  
9 Station, Unit No. 1) : Management)  
10 ----- X

10 The Library, Richards Hall  
11 University Center  
12 2986 North Second Street  
13 Harrisburg, Pennsylvania 17110

14 Wednesday, December 5, 1984

15 The hearing in the above-entitled matter resumed,  
16 pursuant to notice, at 10:00 a.m.

17 BEFORE:

18 JUDGE IVAN W. SMITH, Chairman  
19 Atomic Safety and Licensing Board  
20 Nuclear Regulatory Commission  
21 Washington, D. C. 20555

22 JUDGE SHELDON J. WOLFE, Member  
23 Atomic Safety and Licensing Board  
24 Nuclear Regulatory Commission  
25 Washington, D. C. 20555

JUDGE GUSTAVE A. LINENBERGER, JR., Member  
Atomic Safety and Licensing Board  
Nuclear Regulatory Commission  
Washington, D. C. 20555

Sim 2

## APPEARANCES:

On Behalf of the Licensee:

ERNEST BLAKE, ESQ.  
DAVID R. LEWIS, ESQ.  
Shaw, Pittman, Potts & Trowbridge  
1800 M Street, N. W.  
Washington, D. C. 20036

On Behalf of Three Mile Island Alert:

LYNNE BERNABEI, ESQ.  
Government Accountability Project  
1555 Connecticut Avenue, N.W.  
Washington, D. C. 20036

JOANNE DOROSHOW, ESQ.  
The Christic Institute  
1324 North Capitol Street  
Washington, D. C. 20036

On Behalf of the NRC Staff:

JACK R. GOLDBERT, ESQ.  
LOIS R. FINKELSTEIN, ESQ.  
Office of the Executive Legal Director  
U.S. Nuclear Regulatory Commission  
Washington, D. C. 20555

On Behalf of the Commonwealth of Pennsylvania:

THOMAS Y. AU, ESQ.  
WILLIAM DORNSIFE, ESQ.  
Department of Environmental Resources  
101 South Second Street  
503 Executive House  
Harrisburg, Pennsylvania 17120

SueTraylor 1

I N D E XWITNESSESDIRECT CROSS REDIRECT RECROSS BOARD

2 Gary Paul Miller

3 By Ms. Bernabei 30,123

4 By Judge Linenberger 30,157

5 By Mr. Au 30,224

6 By Ms. Finkelstein 30,227

7 By Mr. Blake 30,229

8 By Judge Linenberger 30,253

9 By Judge Wolfe 30,260

By Ms. Bernabei 30,270

John G. Herbein

By Ms. Bernabei 30,298

Afternoon Session - Page 30,212

E X H I B I T S

TMIA Exhibit 21

IDENTIFIED

30,196

RECEIVED

Sim 1-1

P R O C E E D I N G S

JUDGE SMITH: Good morning, ladies and gentlemen.

We have a preliminary matter. Yesterday I spoke with Ms. Bernabei about Mr. Gamble's appearance. My concern was that since Mr. Gamble had requested that his subpoena be suspended, and since that he had written to me saying that he wished to have me communicate with him directly on that matter because no party represented his interests, I suggested to Ms. Bernabei that there may be some question about Mr. Gamble's appearance here absent some communication from us that his appearance is requested.

She informed me that he either has or is in the process of writing us. I observed that written correspondence would not be timely. So we agreed that we would talk with him by telephone.

Subsequently Judge Wolfe did talk with Mr. Gamble and yesterday sent him a letter confirming the telephone conversation in which Judge Wolfe states "In response to my query whether NRC General Counsel's letter of December 3, 1984 had satisfied your concerns about testifying in this proceeding, you stated that you had written a letter today to the Board indicating you were willing to testify. I replied that in light of this statement, the Board lifts its suspension of the subpoena and that as soon as possible you should contact Ms. Bernabei of TMIA to arrange for your

Sim 1-2

1 appearance at the hearing."

2 So that is the status of Mr. Gamble's subpoena.

3 Is there any other preliminary business?

4 MR. BLAKE: Yesterday for the Board's purposes  
5 in terms of scheduling of witnesses, we talked about  
6 Mr. Gamble with Ms. Bernabei and asked whether or not we  
7 would oppose his coming in this week because he has some  
8 schedule complications and I have been informed here this  
9 morning, after looking at the testimony, that that would  
10 be fine with me, and at least Ms. Bernabei and I have agreed  
11 that he would appear on Thursday after Mr. Herbeing is  
12 completed assuming that the weather doesn't goof him up  
13 on his abilities to get here.

14 JUDGE SMITH: Any other business?

15 MR. GOLDBERG: A couple of matters. On  
16 Mr. Gamble's appearance, Ms. Bernabei also spoke to me  
17 yesterday about that and I don't have any objection to  
18 the schedule insofar as Mr. Gamble's appearance on Thursday  
19 is concerned after Mr. Herbein.

20 A couple of other matters. I think it is  
21 important early in this week for the Board and the parties  
22 to discuss the remaining schedule for this hearing and  
23 estimates on the beginning of the training portion of the  
24 hearing. Because this portion of the hearing is taking  
25 longer than originally was anticipated, I believe the

Sim 1-3

1 original estimate was two weeks, there is beginning to be  
2 an impact on the availability of staff personnel who will  
3 be involved in the training portion of the hearing, and  
4 it is important I think to get some kind of estimate now  
5 as to what kind of schedule the Board might have in mind,  
6 especially with respect to the holiday season.

7 Also, I would like to renew my request to the  
8 Board for as early a determination as possible on the  
9 licensee's suggestion that the Board may want to ask the  
10 staff to produce additional witnesses on the training  
11 issue. And as soon as the Board has had an opportunity  
12 to consider that, the staff would appreciate notification of  
13 the Board's thinking so that if there is further testimony  
14 required we can have the proper people begin working on that.

15 JUDGE SMITH: These discussions about the  
16 scheduling and the substance of the training issue should  
17 be made with UCS's participation, too. It may be desirable  
18 to schedule a session in Bethesda on the scheduling and  
19 reach of the training issue.

20 MR. GOLDBERG: Also, there is pending I guess  
21 TMIA's request for a staff witness which will, depending  
22 upon how the Board views that, may impact on our schedule  
23 for this portion of the hearing.

24 Finally, I have distributed this morning ---

25 JUDGE SMITH: When is that going to be right

Sim 1-4

1 for us to view?

2 MR. GOLDBERG: I think it is right now. TMIA has  
3 made the request ---

4 JUDGE SMITH: There is no request peinding before  
5 us.

6 MR. GOLDBERG: No, but the staff has yet to  
7 state its position on that request. I have briefly informed  
8 TMIA what our position is. I guess unless they want to pursue  
9 it then there is nothing pending. I was under the impression  
10 when it first came up that there would be some further  
11 consideration of it at an appropriate time.

12 MS. BERNABEI: My request was actually to the  
13 Board and the Board suggested I speak directly to the staff  
14 prior to its consideration.

15 Other than Mr. Goldberg telling me that the  
16 staff will oppose the request, I don't know the basis for that.  
17 I think perhaps we could have this discussion in a discussion  
18 of witnesses generally. I think that might be appropriate  
19 especially since we have witnesses here.

20 I would concur with Mr. Goldberg. I think it  
21 would be a good idea to talk about what other witnesses are  
22 to appear.

23 MR. GOLDBERG: The final matter. I have distributed  
24 to the parties this morning a document that is responsive to  
25 TMIA's document request to the staff in this proceeding. It

Sim 1-5

1 is a document which we identified yesterday for the first  
2 time and we made it available to TMIA and the other parties  
3 this morning.

4 There is an additional document that we identified  
5 yesterday as responsive to the document request. On that  
6 document we have to do some further checking with the staff  
7 in Bethesda to determine whether there is any objection to  
8 producing that document. As soon as I have a determination  
9 on that, if indeed it is that there is no objection to  
10 producing it, I will make it available to the parties.

11 JUDGE SMITH: We are not expected to have this  
12 document, are we? We don't have it.

13 MR. GOLDBERG: No. At this point it is just  
14 part of discovery which has been made available now.

15 JUDGE SMITH: Have all the parties had a chance  
16 to see the General Counsel's letter? I put copies on the  
17 counsel table this morning and also I think I have provided  
18 for everyone a copy of ALAB 791 which is the memorandum and  
19 order denying the motion for directed certification with  
20 respect to the testimony of Commissioners Bradford and  
21 Gilinsky. Has everyone had a chance to see a copy of that?

22 (No response.)

23 JUDGE SMITH: All right, anything further?

24 MS. BERNABEI: I had one further matter. I

25 would like to move into evidence a portion of Mr. Abramovici's

Sim 1-6

1 deposition that was used both by Mr. Goldberg and by myself  
2 in questioning of Mr. Kunder.

3 JUDGE SMITH: Has this been agreed upon by the  
4 parties?

5 MS. BERNABEI: I think I have Mr. Goldberg's  
6 concurrence. I spoke to him yesterday if he would have any  
7 problem with it. Mr. Blake does not concur. I would move  
8 it into evidence as a TMIA exhibit.

9 MR. GOLDBERG: I would like to accurately state  
10 my position. I told Ms. Bernabei that I would not object  
11 to working out a stipulation as to the admission of certain  
12 portions of that deposition, but I think at this point there  
13 has been no agreement on what portions ought to be stipulated  
14 into evidence and I am waiting to see the proposed  
15 stipulation.

end Sim  
Sue fols

#2-1-SueT

1 MS. BERNABEI: I specifically did state to Mr.  
2 Goldberg those portions on which Mr. Kunder was questioned.  
3 I would propose as a TMIA exhibit a stipulation if the other  
4 parties agree.

5 The Abramovici deposition --

6 JUDGE SMITH: What, you propose as a TMIA  
7 exhibit --

8 MS. BERNABEI: If the other parties agree, I  
9 would agree to stipulation in that --

10 JUDGE SMITH: Oh, I see.

11 MS. BERNABEI: Yes. I'm not fixed to one form.  
12 Given Mr. Blake's apparent opposition, I have proposed  
13 this as a motion for a TMIA exhibit at this time. It  
14 would be the portion of Mr. Abramovici's deposition taken  
15 on October 15, 1984, Page 42, Line 19 through Page 50, Line  
16 13.

17 And I believe that covers the discussion about  
18 the meeting in the afternoon of March 29th, the hydrogen  
19 recombiners and the discussion on that, including the --  
20 not dangerous, but the problems with hooking up the hydrogen  
21 recombiner, and the discussion on core damage at that meet-  
22 ing.

23 JUDGE LINENBERGER: Would you give us again the  
24 date of that Abramovici deposition, please?

25 MS. BERNABEI: October 15, 1984.

#2-2-SueT

1 JUDGE LINENBERGER: Thank you.

2 MS. BERNABEI: And I believe it would be TMIA  
3 Exhibit 20 if it were considered in that form.

4 JUDGE SMITH: You are making the offer right  
5 now?

6 MS. BERNABEI: That's correct.

7 JUDGE SMITH: All right. Are there objections?

8 MR. BLAKE: I object, Mr. Smith. Ms. Bernabei  
9 alerted me this morning that -- just before we went on the  
10 record -- in response to my question whether or not she  
11 had any preliminary matters, that she would move this in.  
12 And I wasn't certain at that point what portions, although  
13 I think they are the same portions she had talked about  
14 earlier as we discussed the variety of stipulations, pro-  
15 posed stipulations, which I had offered. So, I'm not  
16 surprised by the portion that she recommends.

17 I -- we can discuss this particular one now, or  
18 we can wait and set a time to talk about the witnesses that  
19 Mr. Goldberg has proposed, the number of proposed stipula-  
20 tions which I have put on which Ms. Bernabei and I have not  
21 resolved our differences about. But there is a lot on the  
22 table, and I really think we ought to get on with the wit-  
23 nesses, try to set a time either at the end of Mr. Miller's  
24 and before Mr. Herbein is here and sitting and waiting later  
25 today, or set a time where we don't have a witness sitting

#2-3-SueT 1

2 I think a good deal of argument.

3

4 We have been over this ground before back at the  
5 prehearing conference.

6

7 MS. BERNABEI: This has to do not with whether or  
8 not we want to call Mr. Abramovici as a witness. This has  
9 to do specifically with Mr. Kunder's questioning. And I  
10 think it's appropriate it be addressed with regard to the  
11 witness.

12

13 It was originally brought up because we requested  
14 the Board call Mr. Abramovici as a witness. However, I  
15 think given Mr. Kunder's testimony and the use of that  
16 deposition in questioning Mr. Kunder, it would be appropriate  
17 for the Board to consider it in that context as well. I  
18 think it stands different from the other things that we  
19 have discussed.

20

21 JUDGE SMITH: The difficulty, however, is offer-  
22 ing a deposition as an exhibit received into evidence over  
23 the opposition of opposing counsel, it is a very large  
24 burden for you to meet. You know, I think that you are  
25 really going to have to try to work out something.

26

27 MS. BERNABEI: Well, we proposed to call Mr.  
28 Abramovici. That's the only alternative.

29

30 JUDGE SMITH: All right. So, you are saying that  
31 if they oppose, successfully oppose, your offer of his

#2-4-SueT

1 deposition you wish to renew your request to produce him  
2 as a witness?

3 MS. BERNABEI: Yes, sir.

4 JUDGE SMITH: We will have to hear arguments on  
5 it I guess. I understand. I guess we want a better con-  
6 text of why you feel he would be necessary.

7 MS. BERNABEI: Well, we've had -- if I could just  
8 remind the Board, the reason Mr. Kunder was called to  
9 testify was because of a concern about the March 29th after-  
10 noon meeting. In fact, Mr. Kunder was called because the  
11 Board wished to have -- or, the Staff wished to have Mr.  
12 Kunder's recollection of this afternoon meeting.

13 Now, that was brought up because we offered  
14 Mr. Abramovici's testimony in this deposition. It appears  
15 if we can't have Mr. Abramovici as a witness, that would  
XXXX 16 sort of obviate the whole purpose or the whole basis of  
17 Mr. Kunder's testimony, as I understood it. The whole  
18 reason Mr. Kunder was asked to testify was not upon our  
19 request. It was upon --

20 JUDGE SMITH: Oh, no, no. Mr. Kunder's name  
21 was first proposed in a letter by you --

22 MS. BERNABEI: Not with regard to this meeting.  
23 We asked for his testimony with regard to another matter,  
24 not this meeting.

25 In the context of the prehearing conference,

#2-5-SueT

1 we suggested either having Abramovici come testify or --

2 JUDGE SMITH: Right.

3 MS. BERNABEI: -- portions of his deposition --

4 JUDGE SMITH: Did we limit the purposes for  
5 which Mr. Kunder would appear?

6 MS. BERNABEI: No.

7 JUDGE SMITH: So, you didn't ask for him. I  
8 don't see why you didn't get what you -- you received  
9 everything you wanted.

10 MS. BERNABEI: No, that's not true.

11 JUDGE SMITH: Except Mr. Abramovici.

12 MS. BERNABEI: We didn't ask for his testimony  
13 on this matter; the Staff did.

14 JUDGE SMITH: Let's do set it aside for now.  
15 You have made your point. Let us think about it and give  
16 the parties an opportunity to consider your point. It  
17 does seem to me that there should be a possibility of  
18 stipulating his deposition into evidence.

19 All right. Anything further before we proceed  
20 with the witness?

21 (No reply.)

22 You are obliged to discuss a stipulation.

23 MS. BERNABEI: We have. We understand.

24 JUDGE SMITH: If it can't be done, it can't be  
25 done. But you are obliged to make the effort. All right.

#2-6-SueT

1 Who is the witness? Mr. Miller?

2 MR. BLAKE: Mr. Miller.

3 JUDGE SMITH: All right, Mr. Miller, would you  
4 come forward, please?

5 Mr. Miller, you have testified before in this  
6 proceeding, right?

7 MR. MILLER: Yes, sir.

8 JUDGE SMITH: All right. Are you aware you are  
9 still under oath?

10 MR. MILLER: Yes, sir.

11 JUDGE SMITH: Be seated, please.

12 Whereupon,

13 GARY PAUL MILLER

14 is called as a witness and, having previously been duly  
15 sworn, is examined and testified as follows:

16 JUDGE SMITH: State your name.

17 WITNESS MILLER: My name is Gary Paul Miller.

18 JUDGE SMITH: You may inquire.

19 CROSS EXAMINATION

20 BY MS. BERNABEI:

21 Q Mr. Miller, would you state your current posi-  
22 tion?

23 A My current position is, I'm employed by  
24 Metropolitan Edison. My position at this time is Director  
25 of Generation Operations for Fossil Plants at Met Ed.

INDEXXXX

#2-7-SueT

1 Q What was your position at the time of the  
2 accident, March 28th, 1979?

3 A TMI Station Manager.

4 Q How long had you held that position?

5 A In the two months prior to that, I had the  
6 title of TMI Superintendent, which was essentially the  
7 same function. I had held that position since I believe  
8 1977.

9 Q Would you briefly describe your educational  
10 background?

11 A Briefly, I graduated from the United States  
12 Merchant Marine Academy with a degree in engineering, a  
13 license to operate merchant vessels, and a reserve com-  
14 mission. And from that point on, I worked in acceptance  
15 test programs on naval nuclear vessels for a period of  
16 about eight years.

17 Subsequent to that, I came to TMI.

18 Q What positions did you hold at TMI?

19 A Initially -- I am not have the titles exact,  
20 but initially I was in charge of the acceptance test pro-  
21 gram for TMI Unit 1. Following completion of TMI-1's  
22 test program and its initiation of commercial operation  
23 in 1974, I was appointed Unit 2 TMI Superintendent.

24 Following that, in around May of '77 I became  
25 TMI Station Superintendent.

#2-8-SueT

1

2

3

4

5

6

7

END #2

8

Joe flws

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Q Generally, what were your duties and responsibilities in your last position as Station Superintendent?

A Overall responsibility for the operations and maintenance of TMI Units 1 and 2.

Q On March 28, 1979 you were Emergency Director; is that correct?

A That's correct.

1 Q In that position, what were your duties and  
2 responsibilities?

3 A In the position of emergency director, I was again  
4 in overall charge of both units, with the specific responsi-  
5 bilities that are outlined in the radiological control  
6 plan, which is essentially in charge of the emergency.

7 Q On March 28th you arrived at the site at approxi-  
8 mately 7 or 7:05 a.m., is that correct?

9 A From my review of previous testimony, I think it  
10 is documented as 7:05.

11 Q At the time you arrived, what is your memory now  
12 as to the status of the reactor at that time?

13 A I can't honestly separate what I remember as the  
14 status of the reactor. And what I mean by that is I have  
15 answered that question a lot of times.

16 My testimony has been, and I still think that is  
17 valid, that the status of the plant when I arrived, and I had  
18 been in phone conversations which I testified to previously,  
19 the status of the plant was that the reactor was shut down.  
20 That there was not temperature indication, and that we were  
21 beginning to receive radiation alarms. I am sure when I  
22 arrived I was briefed on other parameters, but that is  
23 essentially what I can remember today, and mainly from what  
24 I previously testified to.

25 Q What cooling mode was being employed to stabilize

1 the reactor at that time?

2 A Again, from my review of my previous testimony,  
3 I believe the operators felt they were utilizing decay heat  
4 removal via the steam generators.

5 Q Now referring you specifically to the morning  
6 period, you gave an instruction to Mr. Ross during that  
7 period, did you not, to keep the high pressure injection on  
8 unless he was specifically authorized by you to do otherwise?

9 A Again, from my review of previous testimony, I  
10 believe that somewhere in the period of eight o'clock in the  
11 morning, I directed that Mr. Ross not secure high pressure  
12 injection without my personal knowledge.

13 Q And did he, in fact, follow your directions  
14 throughout the day?

15 A To my knowledge, yes.

16 Q So it is fair to say that on March 28th, to your  
17 knowledge, HPI was not secured after that point?

18 A To my knowledge, that is true.

19 Q Generally, decisions about the reactor were  
20 made in so called, 'think tank' discussions, is that  
21 correct?

22 A Generally, yes.

23 Q Can you describe in brief form who was involved  
24 in the think tank, and how decisions were made?

25 A When I arrived at the site at 7:05, and in a very

1 short period we received radiation indications which mandated  
2 that I initiate the emergency plan.

3 Following that initiation, I assembled what I  
4 considered to be my senior most qualified people, and  
5 labeled that subsequent to the accident the think tank.

6 They -- basically, I have listed those in written  
7 testimony, but I will go through some people, and if I miss  
8 somebody it is an oversight.

9 Mr. Ross was put in charge of operations. Mr.  
10 Kunder was put in charge of the engineers. Mr. DeBiel was  
11 put in charge of the radiological aspects. Mr. Logan was  
12 requested to go back through the procedures, and assure me  
13 I did not miss any requirements. Mr. Shevelen was put in  
14 charge of maintenance. Mr. Seelinger was, I believe, sent  
15 to TMI-1. He was, at that time, the TMI-1 superintendent,  
16 and basically to be in charge of what we call the backup  
17 emergency control center. I believe it was called the ECS.

18 And I selected those people based on the fact  
19 that their functions related to the areas I listed, and they  
20 were my senior people, and my intention was at periodic  
21 intervals to sit with that group in a room and discuss  
22 indications and strategy.

23 I don't believe I labeled it the think tank that  
24 day, although I believe I subsequently attached that label  
25 to that group.

1 Q Now, it is fair to say that others entered into  
2 that discussion on a somewhat intermittent basis, if not a  
3 consistent basis, throughout the day? Others in the control  
4 room?

5 A It is fair to say that those individuals discussed  
6 plant items with other individuals in the control room. It  
7 is also fair to say that I attempted to keep that group  
8 at various times alone in that room to have a minute or two  
9 to think. But the answer is yes, with the background I  
10 gave you.

11 Q And those other individuals who might enter at  
12 times into the discussions would include the shift  
13 supervisors, is that correct?

14 A That is true.

15 Q And on March 28th that would include Mr. Zewe,  
16 Mr. Mehler and Mr. Chwastyk, is that correct?

17 A Yes. There might have been one or two other  
18 shift supervisors around also.

19 Q Now, at some point in the think tank discussions  
20 in the morning, there was discussion, was there not, about  
21 the core possibly not being covered.

22 A I really can't remember that kind of a discussion  
23 today. I reviewed what I previously testified to. I believe  
24 in the very early morning hours, and I mean by that eight-thirty  
25 or nine o'clock, we had attempted to start reactor coolant

1 pumps, we had realized from the fact that the pumps were running  
2 at a much lower amperage than normal that there was steam  
3 in various portions of the reactor coolant system, and we were  
4 trying to assure ourselves that the core was covered more  
5 than talking about core uncoverage.

6 Q Do you remember testifying in a prior time  
7 that core uncover -- possible core uncover -- besides the  
8 emergency plan, possibly the greatest item of discussion in  
9 the control room on March 28th? In the morning of March 28th?

10 A I think I remember previously testifying many times  
11 the fact that cover coverage was a concern, and assurance of  
12 that was a concern.

13 Q And it was also a part of the think tank discussions,  
14 a good part of the think tank discussions on the morning of  
15 March 28th?

16 A I don't think I can honestly say a good part.  
17 There were -- it is hard to articulate. There were hundreds  
18 of items occurring, and therefore to say a good part I don't  
19 think would be proper.

20 I think it was a portion of it, and an important  
21 portion.

22 Q Mr. Miller, I would like to refer you to what  
23 has been admitted as Joint Mailgram Exhibit 83, page 19.  
24 The question and answer that begins on Line 3. We will  
25 provide that to you. This is your September 20, 1979 interview

3-6-Wal

1 with the special inquiry group.

2 (Witness provided copy of document)

3 A Can you tell me which line to look at?

4 Q Yes. The question starting on Line 3. And the  
5 answer which follows. I will read it for the Board.

6 Question: I think if not you, other members of  
7 that group have testified before that periodically over the  
8 morning you got together and said in substance, okay, now  
9 do we all think the core is covered? Do you remember that?

10 Answer: I remember. I think I remember the  
11 core coverage was probably the biggest thing I could -- you  
12 know, the single issue among the group other than the  
13 emergency plan, which we took on each time.

14 That is what you so testified to the special  
15 inquiry group on that date, is that correct, Mr. Miller?

16 A That is correct.

17 End 3.  
18 MS fols.  
19  
20  
21  
22  
23  
24  
25

Sim 4-1

1 Q Do you have any reason to believe that is  
2 incorrect, your answer at that time?

3 A No.

4 Q In fact, you had running discussions, did you  
5 not, on whether the core was covered on the morning of  
6 March 28th?

7 A I think it is important to make a distinction,  
8 and I made through all these testimonies.

9 Q Okay. Mr. Miller, my question to you is where  
10 there running discussions on whether or not the core was  
11 covered on the morning of March 28th?

12 A There were running discussions on assuring the  
13 core was covered.

14 Q There were also discussions, where there not,  
15 about whether or not cooling was bypassing the core, that  
16 is the method of cooling was in fact bypassing the core and  
17 not cooling the core?

18 A There were discussions of possibilities of that,  
19 yes.

20 Q Now in this same time frame, specifically in  
21 the 8 to 9 a.m. time frame on March 28th, you requested  
22 that Ivan Porter take incore thermocouple readings; is that  
23 correct?

24 A I really can't remember the timing, but I  
25 believe that was requested earlier on by me when I first

Sim 4-2

1 arrived.

2 Q Okay. It was sometime shortly after you arrived;  
3 is that fair to say?

4 A I think shortly after I arrived in the initial  
5 assessments or attempt to gain the status.

6 Q And you were aware at that time, were you not,  
7 that there were incore readings from the computer that were  
8 offscale high; that is they were reading question marks?

9 (Pause.)

10 Mr. Miller, do you understand the question?

11 A I can't honestly remember being aware of that.  
12 I believe when I asked for those readings, I asked for those  
13 without any of that information. But I really can't remember  
14 today.

15 JUDGE LINENBERGER: Excuse me, Ms. Bernabei. Let  
16 me get one point settled in my own mind here. Irrespective  
17 of your memory with respect to the answer to to counselor's  
18 question, if the thermocouple printout yielded a question  
19 mark, what would the significance of that question mark be?

20 THE WITNESS: Attempting to take myself back  
21 to March 28th is hard, but I don't believe Gary Miller knew  
22 the computer program well enough to know what a question  
23 mark would mean, except that it would give me a number.

24 JUDGE LINENBERGER: I see. In other words, as  
25 you now recall events on that date, you were unable to

Sim 4-3

1 interpret a question mark in terms of either an off-scale  
2 reading or a non-functioning thermocouple or something else?

3 THE WITNESS: That is true, but I must most  
4 candidly tell you when I looked at the panel there was no  
5 temperature indication on scale when I arrived.

6 JUDGE LINENBERGER: Thank you.

7 THE WITNESS: It had no high temperature  
8 indication.

9 JUDGE LINENBERGER: Thank's.

10 BY MS. BERNABEI:

11 Q Mr. Miller, have you testified at a prior time  
12 that you were aware in this early morning period of core  
13 temperatures and hot leg temperatures offscale high?

14 A I believe I have testified that when I arrived  
15 that the TH's were offscale high and that the TC was offscale  
16 low.

17 Q How about the core temperatures, the so-called  
18 hot spot temperatures? Have you testified that those two  
19 were offscale high and you knew that in this morning period?

20 A I can't recall that.

21 Q Okay. I would like to refer you to Joint  
22 Mailgram Exhibit 83, September 20, 1979, the testimony you  
23 have before you, specifically page 14, your answer which  
24 starts on line 16.

25 For the Board, the answer beginning on line 16,

Sim 4-4

1 "Again, I could contradict myself, but my memory  
2 of that, I may have said some thing previously, my memory of  
3 that is that I was aware very early that the temperatures  
4 on the normal demand panels were offscale high, the hot leg  
5 temperatures, the hot spot temperatures. So, therefore, we  
6 didn't have, to my knowledge, indication of temperature."

7 That is in fact what you testified to, is it not?

8 A Yes.

9 Q Okay. And that would indicate that you had an  
10 awareness on the morning of March 28th that the core tempera-  
11 tures were offscale high?

12 A There were not core temperatures. It just indicates  
13 that I had no temperature indication that was on scale on the  
14 normal demand meters, which is TH, T hot leg.

15 Q You knew, according to your testimony here, did  
16 you not, that there were offscale high readings for core  
17 temperatures from the computer? Isn't that what your answer  
18 here indicates?

19 A I really don't know, but I don't think so.

20 Q Let me read it again. "My memory of that is that  
21 I was aware very early that the temperatures on the normal  
22 demand paneels were offscale high, the hot leg temperatures,  
23 the hot spot temperatures."

24 Those are core temperatures, are they not, the  
25 hot spot temperatures?

Sim 4-5

1           A       I don't know what I meant by hot spot sitting  
2 here today.

3           JUDGE SMITH: Excuse me. When you say there  
4 are not temperatures onscale, is that the same as saying  
5 that temperatures were offscale?

6           THE WITNESS: Yes, sir. When I say the normal  
7 demand meters, I mean when you look at the control room  
8 panels and you look at the temperature indications you run  
9 the plant by, there were none onscale. They were offscale  
10 high and the cold leg were offscale low.

11          JUDGE LINENBERGER: But to take this clarifica-  
12 tion one step further, it was my understanding, and correct  
13 me if I am wrong, that no thermocouples located in fuel  
14 element outlets indicated directly on meters on the control  
15 panel; is that correct, or am I wrong about that? In  
16 other words, I thought that fuel element thermocouples had  
17 to be interrogated to get a reading that they did not  
18 continually and normally display on the panel. Am I wrong  
19 about that?

20          THE WITNESS: If you had asked me that five  
21 years ago, I would have had a lot more technical confidence  
22 in my answer, and I don't mean that to be funny. I haven't  
23 been in that control room for a lot of years. I believe  
24 you had to interrogate them through the computer.

25          JUDGE LINENBERGER: Thank you.

1 BY MS. BERNABEI:

2 Q Mr. Miller, in fact, in follow up to Judge  
3 Linenberger's question, isn't that in fact what you stated  
4 in your statement of April 1979, and I would like to refer  
5 you now to the Joint Mailgram Exhibit 10. I think it is an  
6 April 14, 1979 statement that you and others prepared.  
7 It is specifically what is marked as Page 15.

8 A Is the title of that "TMI Station - March 28th  
9 Event - Unit No. 2"?

10 Q Yes.

11 A And not labeled April.

12 Q That is correct. I think at least between the  
13 company and ourselves we believe it is mid-April 1979.

14 A That is true. It was arrived at at that time or  
15 written by me at that time.

16 Q Now, Mr. Miller, referring you to line 15, you  
17 state, do you not, ---

18 A Would you give the page again?

19 Q Oh, I am sorry, page 15, under Item 3, midway  
20 down that paragraph.

21 (Pause.)

22 MR. BLAKE: For the page, I believe it says  
23 0830 to 1200.

24 THE WITNESS: Yes, I have found it.

25 BY MS. BERNABEI:

Sim 4-7

1 Q Midway down, Item 3, it says, does it not,  
2 "Incore thermocouple readings were taken on the computer"?

3 A Yes.

4 Q It also stated that the computer put out a  
5 question mark, which means that we were not in its program;  
6 is that correct?

7 A That is correct.

8 Q And then you continue, "Therefore, we sent  
9 instrumentation personnel to take readings at the penetration";  
10 is that correct?

11 A That is correct.

12 Q And that means prior to their input into the  
13 computer, is that correct, the penetration?

14 A That is correct.

15 Q Okay. And this is in fact your direction to  
16 Mr. Porter to take incore thermocouple temperature readings  
17 prior to their input into their computer?

18 A That is correct.

19 Q Now is it fair to say that a part of your  
20 reason for thinkings of this method of taking incore  
21 temperatures was your prior experience in the Navy?

22 A In my prior experience in acceptance test  
23 programs on naval vessels, yes.

24 Q And you had used thermocouples as direct indi-  
25 cators of core temperatures; is that correct?

Sim 4-8

1           A       I believe in previous testimony I have stated  
2 that that was a test we ran as a part of the test program and  
3 that is where my familiarity came from.

4           Q       Okay. And in those tests thermocouples were used  
5 as direct indicators of core temperatures; is that correct?

6           A       That is correct.

7           Q       Now Mr. Porter did instruct instrument men to take  
8 the temperatures you requested, did he not?

9           A       I believe he did, yes.

10          Q       If you know, how did the instrument men take the  
11 temperatures?

12          A       I think on March 28th I didn't know that. I just  
13 knew that he would get me some readings.

14          Q       Do you today know how those readings were taken?

15          A       I think I asked Mr. Porter that question in  
16 subsequent events to March 28th and I believe he described  
17 to me what kind of instruments they used down at the  
18 penetrations, but I today don't have a total familiarity with  
19 it exactly, but they used a temporary set of connections with  
20 an instrument.

21          Q       Okay. A millivolt meter; is that correct?

22          A       I am not really sure of that.

23          Q       Now Mr. Porter, after having these readings  
24 taken, relayed them back to you, did he not?

25          A       Yes.

Sim 4-9

1 Q And I think it is your understanding that he  
2 relayed four to five temperatures back to you in the range  
3 of 200 to 24 or 25 hundred degrees; is that correct?

4 A I think I have said he relayed four to five  
5 readings from zero to 200 to 400 to 2000. That is memory  
6 of previous testimony.

7 Q Okay. Do you remember testifying that at least  
8 one was in the range of 24 or 25 hundred on several occasions?

9 A I don't specifically remember, but that is  
10 possible.

11 Q I would like to refer you to your May 7, 1979  
12 interview. It would be tape 159 at 51. Unfortunately, it  
13 is not yet a part of the joint stipulation. It was inadver-  
14 tently omitted by all the parties.

15 Do you have that tape 159, Mr. Miller?

16 A Yes.

17 MR. BLAKE: Judge Smith, it actually is in  
18 yours. We located this tape. It came up last week and  
19 it had been omitted from the stipulation. We only had  
20 one tape out of this particular interview and we have  
21 located copies and we brought some here today and stuck  
22 them in people's books. I neglected this morning to  
23 say that and we will take care to get them out to the other  
24 copies of the stipulation as well. It is actually in there  
25 now.

Sim 4-10

1 JUDGE LINENBERGER: Is it filed under a specific  
2 index?

3 MR. BLAKE: Yes. It is Item No. 23, and  
4 evidently that one particular interview of Mr. Miller had  
5 several different tapes, and all that was in there under  
6 Item 23 was the first tape and the other tape transcript  
7 from the second tape hadn't been in there and we located  
8 it and we put it in. It doesn't require any change in the  
9 stipulation. It was a goof.

10 JUDGE SMITH: We provided for this in such  
11 other additions that might come up for our other copies?

12 MR. BLAKE: Yes. I will take care of it.

13 MS. BERNABEI: It is at page 51, Mr. Miller, of  
14 the tape 159, if I could share it with you for the moment.

15 (Pause.)

16 BY MS. BERNABEI:

17 Q It is tape 159 of May 7, 1979, specifically  
18 page 52.

19 Mr. Miller, this indicates, does it not ---

20 MR. BLAKE: Wait, Ms. Bernabei, if you would.  
21 What you are using is a draft, I take it, to refer to the  
22 page number.

23 MS. BERNABEI: No. This is an official trans-  
24 cription which was later transcribed into an interview. We  
25 have the tape here and this is as it appears in the form

Sim 4-11

1 of an interview.

2 MR. BLAKE: I just can't follow you by page  
3 number.

4 MS. BERNABEI: 51 and 52. We provided this to  
5 you, Mr. Blake.

6 MR. BLAKE: I agree, but what I have here  
7 just physically in front of me is the official version of  
8 that interview.

9 MS. BERNABEI: We were not provided that until  
10 this morning by you.

11 MR. BLAKE: I know that. I don't have any quarrel.  
12 I don't have a quarrel with the words. I am just trying to  
13 locate the place. That is all.

14 MS. BERNABEI: Okay. Well, I will refer  
15 Mr. Miller to the place that we have in the tape.

16 Mr. Miller, do you want to read ---

17 MR. BLAKE: I want to see it, too, at the same  
18 time. You will just have to wait a second, if you would.

19 MS. BERNABEI: I have no problem. I am just  
20 going to ask him the question and he can think about it and  
21 review it.

22 MR. BLAKE: Okay.

23 BY MS. BERNABEI:

24 Q Now I would like you to review your answer on  
25 pages 51 and 52 of tape 159. It indicates, does it not,

Sim 4-12

1 that Mr. Porter gave you some readings that were 2500  
2 degrees?

3 A In that testimony I state the numbers 200 to 400  
4 to 2500. It is also fair to say that you can find a lot  
5 of places I have been asked this.

6 In my own statement made in April I said zero  
7 to 200 to 2000, but that number is in there.

8 Q Haven't you said in other testimony that you  
9 took 2500 as your indication, rounded it off to 2500 and  
10 took that as your indication?

11 A I have been asked an awful lot of times about  
12 these thermocouples and I think I have clear said I treated  
13 them as unreliable, but I have said that I took them as  
14 meaning we were hot.

15 Q Now what did Mr. Porter tell you at the time he  
16 gave you these readings?

17 A And I have to go back to previous testimony.

18 Q And what did he say?

19 A The biggest single thing was he considered them  
20 unreliable. There is some technical discussion in most  
21 of my testimony relative to them being hot and the possibility  
22 of them melting. That is the best I can recall, but it  
23 is from earlier testimony review. It is not from today.

24 Q Okay. Now did you know on March 28th what  
25 thermocouples were made of?

Sim 4-13

1 A I think I did.

2 Q Okay. And that is Alumel-chrome, or something  
3 of that sort, if I am pronouncing it correctly?

4 A You are close.

5 Q Okay. What is it?

6 A I think it is alumel-chrome.

7 Q Okay. Now on March 28th did you know the melting  
8 temperature for that metal?

9 A I don't believe I did.

10 Q Now on March 28th did you know the range in  
11 which thermocouples were intended or designed to work or  
12 function?

13 A I honestly don't believe I thought about it.

14 Q Do you know of Mr. Porter knew on March 28th  
15 the range in which thermocouples, these thermocouples were  
16 designed to work?

17 A I don't know, but I guess I would have to believe  
18 that he did from my confidence in him as an engineer, but  
19 I don't know that.

20 Q Okay. And it is fair to say that apparently the  
21 readings you were getting were readings coming off the  
22 thermocouples, that is those thermocouples were reading  
23 in those ranges of up 24 and 25 hundred degrees?

24 A It is fair to say that I had readings that went  
25 from zero to 24 to 25 hundred and that I considered them

Sim 4-14

1 unreliable. That is the best I can do.

2 Q Okay. I would like to read you a part from  
3 Mr. Porter's deposition. This is a deposition of Ivan  
4 Porter taken on September 27, 1934 in this proceeding.

5 "Question: So the thermocouple itself, and  
6 we can get on to this, I have no problem with any of that,  
7 the thermocouple itself is designed to operate up to 2200  
8 degrees?"

9 "Answer: A Type K thermocouple, yes."

10 "Question: And is this the type in fact that  
11 was used at TMI-2 at the time of the accident?"

12 "Answer: Yes."

13 And did Mr. Porter inform you on March 28th that  
14 the thermocouples being used to read out incore temperatures  
15 were in fact designed to operate up to 2200 degrees?

16 A I can't remember, but I think that conversation  
17 took place over a period of seconds.

18 Q Is your answer no, you don't remember?

19 A My answer is I don't believe we did.

20 Q Did you ask Mr. Porter given that he had said  
21 that the thermocouples may not be functioning and they may  
22 be melting or forming new junctures, did you ask him the  
23 design range for the thermocouples?

24 A I don't remember today. I can say that I think  
25 I have had extensive discussions in many testimonies about

Sim 4-15

1 this, and the best I can do is I don't believe I paused and  
2 evaluated it. I went on.

3 Q Now it is true, is it not, that you obtained  
4 thermocouple readings over a period of time on March 29th;  
5 is that correct?

6 A I can't tell you March 29, but it is fair to say  
7 that the thermocouples were extensively used after the 28th  
8 starting at some point that I am not sure of.

9 Q Do you remember testifying at a prior time that  
10 on March 29th thermocouple temperature readings were obtained  
11 on a frequent basis on that day?

12 A I don't remember the testimony, but it is possible.

13 Q I would like to refer you to the Joint Mailgram  
14 Exhibit 85 at page 22. There would be an exhibit number in  
15 the top left-hand corner.

16 A No. 9?

17 Q 85.

18 A The page?

19 Q Page 22.

20 (Pause.)

21 Did you find it, Mr. Miller?

22 A Yes.

23 Q You state, do you not, in that interview with  
24 the Senate Subcommittee that "Incore thermocouple readings  
25 were obtained on March 29 on a frequent basis"?

Sim 4-16

1           A       I state "I think on March 29th," and I also  
2 state on the next page that I am not sure of separating out  
3 the 29th and the 30th.

4           Q       Okay. Assuming for the moment that in fact there  
5 are indications that such incore temperatures were taken and  
6 there was discussion with the NRC about such temperatures,  
7 those temperatures were at that point, real time point, they  
8 were below 2200 degrees, were they not?

9           A       I would speculate they were, but I can't remember.

10          Q       Okay. Now assuming for the moment, and there  
11 is evidence in the record to this, assuming for the moment  
12 that they were and that those readings were taken or assumed  
13 to be accurate at that time, that would indicate that the  
14 thermocouples were functioning properly at that time, would  
15 it not?

16          A       I think, to be honest with you, there has been  
17 a whole world of analysis on those thermocouples and what  
18 they were reading on the 29th and the 30th and today, and  
19 Gary Miller isn't the guy to ask that question.

20          Q       Okay. What I am asking you is if you assume  
21 for the moment that incore thermocouples were taken by the  
22 same method as they were taken on the 28th, prior to input  
23 in the computer, assuming there was discussion about those  
24 thermocouples that was valid, that would indicate, would it  
25 not, that they had not been damaged in the prior day?

Sim 4-17

A I really can't answer that question without an examination of all the post analyses which tells you that there could have been reading out -- I mean I have read some of that stuff and I just don't think it is a question I can answer usefully other than to tell you they could be reading out and not be the same thermocouples they were the day before.

end Sim  
Sue fols

#5-1-SueT

1 Q So you think they could have been damaged on  
2 the 28th and still read accurate on the 29th; is that  
3 correct?

4 A I think that based on all the material that  
5 I've read.

6 JUDGE SMITH: Well, there was a disconnecting  
7 thought there somewhere along the line. You paraphrased  
8 his previous answers -- and incorrectly I thought, but he  
9 seems to agree with your paraphrasing of it. You used  
10 as a premise of your last question, a premise that thermo-  
11 couples damaged on the 28th read out correctly on the 29th  
12 and thereafter. That premise was assertedly based upon  
13 his prior testimony, which I did not hear him say. But  
14 he seems to agree with your premise.

15 But I think you have an unreliable record on  
16 this point.

17 MS. BERNABEI: I think his prior testimony,  
18 which we will draw the Board's notice to, indicates his  
19 understanding from Mr. Porter the status of the thermo-  
20 couples on the 28th.

21 JUDGE SMITH: Well, what he said in the answer  
22 immediately before then was that different thermocouples  
23 may be read, and you said: Well, therefore, it's your  
24 testimony that thermocouples which were damaged on the 28th  
25 were reading out accurately on the 29th. And that is not

#5-2-SueT

1 a fair characterization of his testimony unless I've missed  
2 something. That's what I'm concerned about.

3 MS. BERNABEI: I think there was a feeling that  
4 all the readings were unreliable. I mean, I don't want to  
5 press the point.

6 JUDGE SMITH: No, it's not you pressing the point,  
7 counsellor; it's me pressing the point. And when I see  
8 what I think to be --

9 MS. BERNABEI: I guess --

10 JUDGE SMITH: I want to note for the record that  
11 after repeated admonitions, while I am discussing a matter  
12 with you you have turned to talk to Ms. Doroshaw and have  
13 a conversation with her, and I've asked you not to do  
14 that.

15 MS. BERNABEI: I was consulting with counsel --

16 JUDGE SMITH: Well, if you want to consult with  
17 counsel when I'm talking with you, then ask for a break  
18 or something. But I expect you to listen to me when I'm  
19 talking to you.

20 MS. BERNABEI: Judge Smith, I --

21 JUDGE SMITH: I expect you to give me your  
22 entire attention.

23 MS. BERNABEI: I heard every word you said.

24 JUDGE SMITH: So, therefore, I am going to  
25 strike the previous -- it will remain in the record, but

#5-3-SueT

1 I'm going to strike the previous question and answer. You  
2 may address my concern about the confusion and rebuild it.

3 MS. BERNABEI: Okay.

4 BY MS. BERNABEI: (Continuing)

5 Q Mr. Miller, is it your testimony that you felt  
6 that the incore thermocouple temperature readings were  
7 unreliable on March 28th?

8 Was that your opinion on March 28th?

9 A That's true.

10 Q Okay. And you've testified to that to the NRC  
11 many times; is that correct?

12 A I believe so.

13 Q And that was based, was it not, on Mr. Porter's  
14 statement to you at the time that perhaps the thermocouples  
15 had melted and formed new junctures; is that correct?

16 A It was really based on my confidence in him  
17 when he said they were unreliable. I accepted it.

18 Q Okay. And the reason he gave -- at least  
19 according to your prior testimony -- was that they may have  
20 melted and formed new junctures; is that correct?

21 A That has been my prior testimony.

22 Q Now, it's also your prior testimony, is it not,  
23 that incore thermocouple temperatures were taken on March  
24 29th, may have been taken on March 29th?

25 A I think I've said I think it was March 29th. I

#5-4-SueT

1 think I've clearly said I had trouble separating the days.

2 Q I'm asking you, assuming for the moment that the  
3 incore temperatures taken on the 29th were in fact consider-  
4 ed to be accurate at that time, discussed as accurate be-  
5 tween the NRC and the Licensee, would that not indicate  
6 that in fact the incore thermocouples were properly function-  
7 ing on that date, or considered to be properly functioning  
8 on that day?

9 A What I'm trying to say and --

10 Q No. Mr. --

11 A -- I'm not trying to be cute about it, is --

12 Q Mr. Miller --

13 A I'm trying to answer --

14 JUDGE SMITH: Let him answer.

15 WITNESS MILLER: I'm trying to say that following  
16 the 28th there were a multitude of discussions by a multi-  
17 tude of groups on thermocouples. And Gary Miller doesn't  
18 know how accurate they were.

19 I know that Mr. Porter considers them inaccurate  
20 today, but they were some indicator of temperature even if  
21 they had formed new junctions. That discussion was sub-  
22 sequent to the 28th, not all of which I was involved in  
23 but some of which I'm aware of.

24 And that's what I'm trying to get across.  
25 But that doesn't relate to the 28th at all.

#5-6-SueT

1 JUDGE SMITH: As he sits here today. And the  
2 assumptions again are? List them seriatim. The first  
3 assumption is what?

4 MS. BERNABEI: Incore thermocouple temperatures  
5 prior to input into the computer were taken on March 29th.  
6 They were discussed as valid --

7 JUDGE SMITH: All right. Wait. That's assump-  
8 tion number one.

9 MS. BERNABEI: Right. Assumption number two --

10 JUDGE SMITH: All right. Now, this is the one  
11 I have trouble with. Assumption number two?

12 MS. BERNABEI: They were discussed as valid and --

13 JUDGE SMITH: Discussed as valid and accurate?

14 MS. BERNABEI: Or reliable by the NRC and the  
15 Licensee on March 29th.

16 JUDGE SMITH: Now, with those two assumptions,  
17 you are asking his opinion as to what?

18 MS. BERNABEI: Whether that would cast doubt on  
19 his apparent conclusion on March 28th that in fact the  
20 incore thermocouples were not reliable indicators of tempera-  
21 ture, were not functioning properly, and had been damaged.

22 JUDGE SMITH: Now, do you understand the  
23 question?

24 WITNESS MILLER: I believe so.

25 JUDGE SMITH: And can you answer?

#5-5-SueT 1

BY MS. BERNABEI: (Continuing)

2 Q Can you answer my question?

3 A I think I have.

4 Q Okay. Let me ask the question again, because I  
5 think you haven't. And Judge Smith has asked for clarifica-  
6 tion.7 Assuming for a moment that incore thermocouple  
8 temperatures were taken by the same method prior to input  
9 into the computer, assume that they were considered and  
10 discussed as accurate and reliable on March 29th, would  
11 that not indicate to you that in fact the thermocouples  
12 were functioning properly, both on the 29th and the 28th?

13 A I --

14 Q Can you answer --

15 A I don't really remember. But I do remember that  
16 Mr. Porter even on the 29th disagreed with their accuracy.17 Q I'm asking for you, not Mr. Porter. What is  
18 your opinion?19 A Gary Miller is just not -- was not qualified to  
20 really decide that, and I knew that.21 JUDGE SMITH: As I understand the question,  
22 you are asking his opinion today as to what he believes  
23 would be the situation with the assumptions that you gave  
24 him.

25 MS. BERNABEI: That's correct.

#5-7-SueT 1

2 WITNESS MILLER: And I believe I am trying to  
3 answer in that there were different opinions in that site,  
4 all over that site. But Mr. Porter --

5 JUDGE SMITH: The difficulty is --

6 WITNESS MILLER: Mr. Porter still considered  
7 them unreliable.

8 JUDGE SMITH: Right, Mr. Miller, and I want you  
9 to have every opportunity to explain it. However, your  
10 answer suggests that you don't really understand the  
11 question.

12 WITNESS MILLER: I'm trying to say they could  
13 have read out an indication without being accurate.

14 JUDGE SMITH: Right. But she is asking you to  
15 answer the question based upon some assumptions that you  
16 don't agree with. And you don't have to agree with them.

17 WITNESS MILLER: I don't agree with them.

18 JUDGE SMITH: Right. Okay. But you don't have  
19 to agree with them to answer the question. She is asking  
20 you to -- and this is the way these hearings go sometimes,  
21 we are asking you to accept for the purposes of the ques-  
22 tion and your answer that the assumptions are true. But  
23 you certainly are free, and you should, tell us when you  
24 don't believe that the assumptions are true.

25 But if you can answer the question on the  
assumption, accepting the assumptions as being true, do it.

#5-8-SueT

1 If you can't answer it, that's another matter. But you  
2 should address the question the way it's put to you.

3 WITNESS MILLER: As I understand the question,  
4 the fact that you are asking me that they were reading out  
5 on the 29th can cast doubt on whether they should have  
6 been considered unreliable on the 28th, and the honest  
7 answer is that I never connected those two. I never  
8 thought back from the 29th to the 28th.

9 JUDGE SMITH: All right. How about today? What  
10 does that say to you; if they were being discussed as  
11 valid on that day, does that say to you today, as you sit  
12 here, that that casts some doubt on your view that they  
13 are invalid?

14 It seems to be a simplistic question, and I  
15 agree that it is, but you -- she is entitled to an answer  
16 to it.

17 WITNESS MILLER: If I accept someone else's  
18 opinion on the 29th that they are valid indicators, then  
19 the answer is that would cast doubt on their unreliability.  
20 I do not accept that opinion.

21 JUDGE SMITH: Right. That is a perfectly  
22 appropriate answer.

23 JUDGE LINENBERGER: Now, pardon me, but let me  
24 get into this little discussion here on a completely  
25 different point.

## BOARD EXAMINATION

BY JUDGE LINENBERGER:

Q I believe Ms. Bernabei characterized either for herself or in paraphrasing somebody else, brought up the possibility that there had been a sufficiently high temperature environment with respect to at least certain of these thermocouples to permit the possibility of melting and the forming of a new junction. And the word is "junction."

Now, I don't know of any good reason why the new junction that might have formed would necessarily be in the exact location of the original junction as installed in the fuel elements; and, therefore, if a new junction was formed the thermocouples are going to go ahead and try to tell somebody what is the temperature at the location of the new junction.

If the new junction is not where the original junction was when the thermocouples were installed, the thermocouple may appear to be -- and I'm leading up to a question here -- functioning properly but the person who is interrogating it may have no idea where in the -- exactly -- whole assembly that thermocouple is measuring temperature because a new junction has formed.

Now, let me ask you, having made that little speech there that was foundation for the following question, to your knowledge as you recall things then, not from

#5-9-SueT

DEXXXXX

#5-10-SueT 1

postmortems that have instructed you, did you or Mr.

2

Porter on the 29th consider the possibility that even

3

though readings were coming from thermocouples that they

4

may be coming from -- they may be indicating temperatures

5

at different locations than was originally intended for

6

them to indicate?

7

Are you in a position to recall that?

8

A The best I can do on recall is that after the

9

28th, Mr. Porter and I did discuss what you discussed. In

10

addition to that, we discussed with post knowledge after

11

the 28th the possibility that the junctions may not have

12

been between the same two metals.

13

And Mr. Porter, as an electrical engineer,

14

considered them to be suspect as far as their validity,

15

accuracy I mean by that.

16

Q If indeed the new junction might be between

17

different metals than the chrome-alumel original junction,

18

do you know of your own knowledge whether that would in-

19

validate the voltage to temperature conversion that would

20

have to be made in order to derive a temperature reading

21

from a millivolt meter reading?

22

A To my knowledge, it would mean that the calibra-

23

tion that was run on those was invalid, and you wouldn't

24

really know millivolt to volt temperature relationships

25

anymore.

#5-11-SueT 1

JUDGE LINENBERGER: Thank you.

2

BY MS. BERNABEI: (Continuing)

3

Q Did you consider the things that Judge

4

Linenberger brought out in your short conversation with

5

Mr. Porter on March 28th?

6

That is, what would happen if the junctions

7

had melted?

8

A I've stated -- and I can't remember the day --

9

that that conversation occurred over a very few seconds,

10

and I've been asked that many times. And I don't believe

11

I ever went back on the 28th and talked about those thermo-

12

couples again.

13

Q Okay. And you didn't have any discussions such

14

as the discussion you just had with Judge Linenberger;

15

that's fair to say?

16

A On the 28th of March?

17

Q That's right.

18

A No.

19

Q And, to your knowledge, did Mr. Porter have

20

that kind of discussion with anyone other than yourself?

21

That is, consideration of what would happen if

22

the junctions did melt and form new junctions?

23

A I really don't know that.

24

Q Now, it's fair to say you drew a conclusion

25

from the incore temperatures that in fact the core was

#5-12-SueT 1

hot; is that correct?

2

A It's fair to say that.

3

Q In fact, they were hot and they scared you;

4

is that correct?

5

A Those are words of mine out of a previous

6

testimony.

7

Q And it's fair to say at that time you considered

8

the incore temperatures the only direct indicator of what

9

was going on in the core?

10

(Pause.)

11

A We went through this in my deposition. It's

12

hard for me to forget that discussion, but it's fair to

13

say that we were hot. I just think it's unfair to say

14

they were the only temperature indication that I utilized.

15

Q No, I'm not asking you that. I'm asking you,

16

didn't you use, or didn't you consider using, incore

17

thermocouple temperature readings as the only direct indi-

18

cator of what was going on in the core?

19

A At the risk of being admonished for not answer-

20

ing the question, I think it's fair if you go back and

21

remember when I came into that control room I had none.

22

And I looked for anything. And that was one thing I looked

23

at.

24

So, the answer is yes, but you can't isolate it

25

from the fact that I had no temperature indication and at

#5-13-SueT 1 the same time Mr. Porter was hooking up temporary instru-  
2 ments to other indications. That's the problem I've had  
3 separating this.

4 Q Okay. But it was the only direct indicator?  
5 You so testified.

6 A I said those words.

7 JUDGE SMITH: I think the emphasis on the  
8 question is the word "direct." You've picked that up,  
9 haven't you?

10 WITNESS MILLER: Yes, and I accept that. I just  
11 think it's hard for you to separate -- it's not fair to  
12 separate that as the only thing I had to look at. I had  
13 nothing to look at.

14 That's where I came with this from.

15 JUDGE SMITH: Okay. But she is entitled to  
16 build her point of view, step by step, block by block, and  
17 you, of course, are entitled to have your testimony to be  
18 accurate and understood. And the other lawyers, of course,  
19 have an interest in having a complete record.

20 But you should not be too sensitive to the  
21 fact that a lawyer might ask a question in a way that you  
22 would not ask it. You don't have to worry; you are the  
23 witness.

24 WITNESS MILLER: I think if you read that whole  
25 set of testimony where she got that word "direct" you

#5-14-SueT

1 would come away with the impression that I just gave you,  
2 that I was looking at that but it wasn't -- it's like that  
3 was the only thing. I think that's -- not to get emotional,  
4 but I think that's an unfair characterization.

5 And you are right, I should answer it by saying  
6 I said those words. I have a hard time doing that without  
7 giving the whole --

8 JUDGE SMITH: I'm not telling you to answer it  
9 by saying those words or yes or no. The explanation is  
10 appropriate.

11 Just recognize that Ms. Bernabei has a right to  
12 develop a case in her way in the manner that she wants to.  
13 And so she is entitled to the best answer you can give to  
14 her question. Listening to it, the best answer you can  
15 give, and then you are entitled to make an explanation, as  
16 are the other lawyers are entitled to have the matter  
17 cleared up.

18 BY MS. BERNABEI: (Continuing)

19 Q Okay. Didn't the incore temperatures that we  
20 have just discussed indicate to you that you were out of  
21 control?

22 Have you used those words in prior testimony?

23 A Could I see the prior testimony?

24 Q Yes. I would like to refer you to your May 7,  
25 1979 testimony. It's Tape 159 at Page 59. It's in the

#5-15-SueT

1 portion Mr. Blake has recently distributed, May 7th, 1979,  
2 Tapes 159 and 160 at Page 56.

3 I will read this into the record since all the  
4 parties don't have this at this point. Okay. Starting on  
5 Line 20 on Page 55 of the formal transcription.

6 "Our concern was fourfold from time one in  
7 maintaining core coolant. The other thing is that I had  
8 Ivan Porter read out the thermocouples on the incores which  
9 were not a device that are extremely accurate. They are  
10 an indicator. It came out question mark on the computer.  
11 He sent an instrument tech down. The instrument tech came  
12 back and Ivan told me that some read 200, some read 400,  
13 and some read 2,500, and some didn't read. Then, he  
14 explained to me that if they were really hot they would  
15 melt and form other junctions and that the calibration  
16 wouldn't be good anymore. So, you know, the bottom line  
17 here was that they were hot. They were hot enough that  
18 they scared you as far as what you are looking for. He had  
19 told me the reason the computer was off scale at 700 degrees.  
20 So I came in at 15 after 7. TH was pegging high. TC was  
21 pegged low. The incores were reading anywhere from 2,500  
22 or so, and I picked 2,500. It could have been higher than  
23 that. But that, you know, I was looking for a gross indi-  
24 cator and I had it. Our goal was to maintain HP injection,  
25 maintain steaming core cooling and attempt to go solid. I

#5-16-SueT 1

"know that we were super heated and all that sort of thing.

2

I don't know -- I don't think we tumbled to that kind of

3

logic but we just knew we didn't have a control. We were

4

out of control. We knew that the situation was one we

5

hadn't anticipated too many times."

6

Didn't the incore temperatures indicate to you

7

that you were out of control?

END #15 8

Joe flws 9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1           A     I can do no better than the testimony you read  
2 into the record. I gave a lot of things that told me where  
3 I was.

4                     I don't change that today.

5           Q     Did you discuss the incore thermocouple temperatures  
6 with Mr. Herbein?

7           A     On March 28th?

8           Q     Yes.

9           A     I can't really remember today. I think I  
10 previously stated in testimony I don't believe we did.

11          Q     Are you familiar with testimony of Mr. Herbein  
12 that, in fact, you did discuss such temperatures with him,  
13 -- that he was told of such incore thermocouple temperatures.

14          A     I have not personally saw that testimony. I am  
15 familiar with what you just told me as a general thing, that  
16 that has been said, but I have not read it.

17          Q     To your knowledge, would anyone other than  
18 yourself have interface with Mr. Herbein to provide him with  
19 such temperatures?

20          A     I don't think so, but I really can't answer that.  
21 He didn't just talk to me, but I was his primary point.

22          Q     There will be testimony that, in fact -- you are  
23 familiar, are you not, with the GPU Service Corporation  
24 engineers that were sent to the site on the first day of the  
25 accident -- familiar today?

1 A I am familiar today. I was not familiar that  
2 day.

3 Q There was Mr. Broughton -- do you know his name?

4 A Pardon me?

5 Q Gary Broughton. Are you familiar with him?

6 A Yes, I know him.

7 Q He was one of the GPU Service Corporation  
8 individuals sent to the site, is that correct?

9 A I know that today. I did not know that then.

10 Q And at that time -- if you know today, he was  
11 head of the accident or transient analysis group, is that  
12 corre t? On March 28th?

13 A I accept that.

14 Q Okay. Do you know Mr. James Moore?

15 A I know James Moore.

16 Q And he was sent to the site in the same group  
17 of service corporation engineers, was he not, on March 28th?

18 A I am told that today.

19 Q Now, assuming for the moment -- and there will be  
20 testimony to this effect -- that these engineers -- GPU  
21 Service Corporation Engineers were provided information  
22 of incore temperatures reading greater than 2,500 degrees.  
23 Did you or your organization provide them with that  
24 information?

25 A Could you ask that slowly, and are you talking

1 about March 28th?

2 A Yes.

3 Q I will ask the question again. Did you or your  
4 organization provide the GPU Service Corporation individuals  
5 with any information about incore temperature readings greater  
6 than 2,500 degrees on March 28th?

7 A Not to my knowledge, but that doesn't exclude  
8 people that might have talked to them that I don't know  
9 about.

10 Q Did you, or any of the people under your  
11 control as emergency director, brief the GPU Service  
12 Corporation individuals at or near the time they arrived at  
13 the observation center on March 28th?

14 A I don't know the answer to that question. I  
15 didn't know that March 28th.

16 Q So you did not direct or instruct anyone to  
17 brief those engineers, is that your testimony?

18 A It is possible someone asked for me to send people  
19 over there, and I don't remember, but I don't remember today.

20 You are talking about thirty to fifty people that  
21 I would have had control over that somebody else could have  
22 given permission, and I wouldn't even have known it.

23 Q You were the emergency director throughout the  
24 day, were you not?

25 A Yes, I was.

1 Q Are you aware of the emergency core -- emergency  
2 core cooling system criteria?

3 A I believe I am.

4 Q And you were aware on March 28, 1979, were you  
5 not?

6 A I think I was aware of an interim number. That  
7 is the best I can recall today.

8 Q That interim number was 2300, something of that  
9 nature, is that correct?

10 A For some reason, I remember 2200, but it could  
11 have been 2300.

12 Q Well, 2200-2300. And that would indicate, and  
13 I believe these were your words, that the fuel was -- those  
14 kind of temperatures would indicate that the fuel was  
15 beyond what it should be temperature wise in terms of  
16 these criteria, is that correct?

17 A Would indicate we were beyond the interim ECCS  
18 criteria, yes.

19 Q You knew that on March 28th, is that correct?

20 A I was aware of that number, yes.

21 Q Did you also know that the ECCS criteria provide  
22 that no single point in the core should exceed that  
23 temperature?

24 A Talking today, I can't remember exactly. I think  
25 I was aware that under condition of high pressure injection

1 that was the number you shouldn't exceed in the core, but  
2 I don't really remember if I knew that exactly the way I just  
3 said it that day.

4 Q Haven't you testified at a prior time you were so  
5 aware on March 28th?

6 A And I may have, is what I am trying to say.

7 Q And the regulations provide that no point in the  
8 core should exceed 2200 degrees, is that correct? No single  
9 point?

10 A That is true. I believe the analysis says the  
11 system is designed so you don't end up over that point.

12 Q At any single point in the core, is that correct?

13 A I will accept that.

14 Q Now, do you know today that a full set of 51  
15 incore thermocouple temperature readings were taken on  
16 March 28th?

17 A I know it today. Did not know it March 28th.

18 Q If you know -- how many temperature readings  
19 was that that was taken in this complete set?

20 A I think -- I don't remember this -- I think  
21 there is 52.

22 Q So, if I tell you 51, 52, that sounds about right?

23 A Yes.

24 Q And if you know a number of them, six, were  
25 greater than 2200 degrees, does that sound correct? From what

6-6-Wal

1 you know today.

2 A I don't really know that.

3 Q I would like to refer you to what would be page 31  
4 in the Udall Report, Joint Mailgram Exhibit 143. Mr. Miller,  
5 it won't be in that pile. We will give you a copy.

6 (Witness furnished document)

7 JUDGE SMITH: Will you give us that item number  
8 again?

9 MS. BERNABEI: Yes. It is Joint Mailgram Exhibit  
10 143.

11 JUDGE SMITH: 143.

12 BY MS. BERNABEI: (Continuing)

13 Q Mr. Miller, for a moment, this Figure C1-12, that  
14 appears on page 31, appears to be a core map of the thermo-  
15 couple -- complete set of thermocouple temperatures, is that  
16 correct?

17 A Yes.

18 Q And these appear to be the temperatures that were  
19 taken on March 28th, is that correct?

20 A I have to accept that that is what this says,  
21 yes.

22 Q Now, you became familiar at some time after  
23 the accident of these figures, is that correct? Figures in  
24 this range?

25 A At some point afterward, yes.

1 Q And your testimony is today that you did not  
2 know of them on the day of the accident, is that correct?

3 A That is true. In my review of previous testimony,  
4 I think I have said that when I was asked this much closer to  
5 the day of the accident, I said that my own belief and memory  
6 is reinforced by my memory of the man who took these readings  
7 was on vacation, and we didn't find the sheet with these  
8 on them, from my memory, for two weeks after the accident.

9 That is what reinforced my memory at a nearer time  
10 to the events of that day.

11 Q Okay. Now, I am not -- did you have any information  
12 about the readings, whether or not you saw a piece of paper  
13 in this form, or some other form? Were you informed of the  
14 readings?

15 A I am sure I did not on the 28th.

16 Q And it is fair to say that it would have influenced  
17 your thinking at that time if you had had a full set of  
18 readings? That is, with the range of temperatures that  
19 appears before you?

20 A And I am answering that question from the standpoint  
21 that I accept that I would be given these, and would I have  
22 done something different?

23 Q Would that have influenced your thinking and your  
24 actions on that date?

25 A I find that very hard to answer, honestly. I think

1 it would have, but that is probably an easier answer to give.

2 Q And haven't you testified at a prior time that  
3 in fact, if given a full set, you would have considered them  
4 reliable? That is, you would have taken them more seriously  
5 these high readings?

6 A I don't think, 'serious' is the right word.

7 Q Okay. How would you characterize it, Mr. Miller?

8 A Accurate or inaccurate, it is useful to the  
9 operation you are in, and I honestly don't know -- if I had  
10 a full set of readings, and I had thought more about thermo-  
11 couples, I might have concluded different things and done  
12 different things. But that -- I don't know what difference  
13 it would have made, but I think I have to answer you saying  
14 yes, it might have made some difference in what I did.

15 Q Now, I would like you to review for a moment  
16 a portion of a deposition of Richard Lentz that was given in  
17 the course of discovery in this proceeding.

18 Do you know who Mr. Lentz is, Mr. Miller?

19 A I know Mr. Lentz, yes.

20 Q He, at some point, worked at TMI-2 prior to the  
21 accident, is that correct?

22 A He worked in the test program for TMI-2, I  
23 believe.

24 Q And at some point prior to the accident, he  
25 worked as an engineer for the GPU Service Corporation, is that

1 correct?

2 A Yes.

3 Q On March 28th, he came down with other GPU  
4 engineers to the site, did he not?

5 A I don't really know that, but I have been told  
6 that, yes.

7 Q Okay. I would like you to review for a moment  
8 a portion of his deposition which was given in this case on  
9 October 15, 1984. Specifically, pages 118 through 126.  
10 You don't have that. I will provide you a copy.

11 MR. BLAKE: It is now time for a break, if the  
12 witness is going to read eight pages of testimony.

13 MS. BERNABEI: That is fine.

14 JUDGE SMITH: All right. Let's take a break.  
15 Ten minutes.

16 SHORT RECESS TAKEN.

17 JUDGE SMITH: Are you ready, Mr. Miller?

18 WITNESS: Yes, sir.

19 JUDGE SMITH: You may proceed.

20 BY MS. BERNABEI: (Continuing)

21 Q Mr. Miller, over the break you have had an  
22 opportunity to review those portions of Mr. Lentz's deposition,  
23 page 117 through page 126, is that correct?

24 A Yes.

25 Q Mr. Lentz states in those pages, does he not,

1 that he is familiar, or he learned that Ivan Porter had taken  
2 a complete set of thermocouple readings on March 28th. That  
3 he learned that a few days after the accident?

4 A I have read these pages twice. I believe he does  
5 say that, although I think he also sort of inferred that he  
6 didn't really learn it until a couple of weeks after at  
7 one place.

8 Q Okay. But at any place he did learn at some  
9 time, either a couple of days or a couple of weeks, that Ivan  
10 Porter had taken a complete set of incore temperature data  
11 on March 28th?

12 A That is what this says, yes.

13 Q And in fact, Mr. Lentz says he saw those readings  
14 in Mr. Porters handwriting, is that correct?

15 MR. BLAKE: I am sorry. Can I have a reference  
16 to that?

17 MS. BERNABEI: Yes, if I can share with Mr.  
18 Miller.

19 MR. BLAKE: Or you can share with me.

20 BY MS. BERNABEI: (Continuing)

21 Q I am referring you now to page 118, Line 21. For  
22 the Board, I will read it.

23 Question: If you can remember, how many readings  
24 were there? In other words, how many did you have to work  
25 with, approximately?

1 Answer, by Mr. Lentz: It was two or three  
2 pages handwritten that Ivan Porter had taken.

3 Question: How many thermocouple readings?

4 Answer at 119: I believe we took all of them.

5 Is that correct, Mr. Miller?

6 A Yes. And the words, 'had taken' to me don't  
7 necessarily indicate Mr. Porter personally took them. I  
8 don't know any of that.

9 Q But it does indicate that Mr. Lentz saw handwritten  
10 copies of those temperatures?

11 A It indicates he saw a set of temperatures from  
12 that day, yes.

13 Q I would like to refer you to page 124 of the  
14 deposition, Line 18. The question starting on Line 16:  
15 When you reviewed this temperature data, was it in the form  
16 that is before you? (At this point, I am showing Mr.  
17 Porter a document.) He said, no, it was -- the form I recall  
18 seeing it in was a notebook page, a page out of a notebook,  
19 two columns.

20 Is that correct, Mr. Miller?

21 A That is a correct reading of it.

22 JUDGE SMITH: You mean to say you were showing  
23 Mr. Lentz a document?

24 MS. BERNABEI: Yes, sir.

25 BY MS. BERNABEI: (Continuing)

1 Q Mr. Lentz also states, does he not, that he was  
2 informed by Mr. Porter that he passed information about this  
3 complete set of incore data to you, Mr. Miller, on March 28th?

4 A Would you repeat that question?

5 Q Yes. Doesn't Mr. Lentz also indicate Mr. Porter  
6 informed him that he passed the complete information about  
7 the complete set of incore data to you on March 28th?

8 A Mr. Lentz's answer that I read said he doesn't  
9 recall whether he told Gary Miller that, or he had the  
10 thermocouples -- I don't remember him saying what you are  
11 asking. That is my answer.

12 Q The question is about information about the  
13 complete set. Didn't he say that Mr. Porter told him that  
14 he, Porter, passed information about the complete set to  
15 you on March 28th?

16 A I guess I would like to see the reference to  
17 that?

18 Q On 122.

19 A Yes.

20 End 6.  
21 MS fols.

22

23

24

25

Sim 7-1

(Pause.)

BY MS. BERNABEI:

Q Starting on line 2, Mr. Lentz says "Pinning down the day and time, I don't know. I remember sometime during the first several days talking to Ivan Porter and there was someone from the NRC sitting there at the computer console getting a group printout of the thermocouples, and every 15 minutes he was punching them out and it was printing out all question marks. I remember asking Ivan or someone, you know, why are they doing that. It is printing all question marks. Well, he wants temperature recording or something or other. During the conversation I said did you try getting thermocouple readings down at the input to the computer and converting them? He said yes and he passed the information on to Gary, but to him it looked like they were all failed, broken."

"Question: And did he indicate that he would pass on this complete set?" I think it should have been had passed on this complete set.

"Answer: Yes, that he had given a copy of that data to Gary Miller."

That would indicate, would it not, Mr. Lentz' testimony as he understood Porter to tell him that he had passed on a complete set of incore thermocouple data or information about that data to you?

Sim 7-2

1 JUDGE SMITH: Would you put a time on your  
2 question?

3 MS. BERNABEI: I am sorry?

4 JUDGE SMITH: Would you place your question in  
5 a time reference, when?

6 MS. BERNABEI: Yes. Mr. Lentz indicated that,  
7 did he not, in his deposition of October 15, 1984.

8 JUDGE SMITH: No, that is not what I meant. When  
9 was it that Mr. Lentz testified that Mr. Porter communicated  
10 this information to Mr. Miller, or what does your question  
11 envision?

12 MS. BERNABEI: There is no time frame.

13 JUDGE SMITH: Ever? Does your question have a  
14 time frame?

15 MS. BERNABEI: Are you talking about my question  
16 to Mr. Miller?

17 JUDGE SMITH: Yes.

18 MS. BERNABEI: Yes.

19 JUDGE SMITH: You are asking him. What is the  
20 time frame of your question?

21 MS. BERNABEI: On March 28th.

22 JUDGE SMITH: All right. And then your question  
23 to him, does that testimony that you just read indicate that  
24 on March 28th -- indicate that Lentz believes that on March  
25 28th Porter communicated this information to Miller?

Sim 7-3

1 MS. BERNABEI: Right.

2 JUDGE SMITH: Do you believe that that is what  
3 that says?

4 THE WITNESS: I read it a couple times during the  
5 break and I clearly can't tell that. I can't clearly tell  
6 it says that he passed that information that Lentz says  
7 that he thinks that Porter passed that to me. I read both  
8 pages before and after ---

9 JUDGE SMITH: All right. Now let's clarify what  
10 you don't think it says. You don't think it says that Lentz  
11 says that Porter passed it on to you at any time or on March  
12 28th?

13 THE WITNESS: On March 28th.

14 BY MS. BERNABEI:

15 Q Okay. Now this conversation that Mr. Lentz is  
16 talking about took place with Mr. Porter a few days after  
17 the accident, did it not?

18 A Yes.

19 Q Okay. Therefore, in his conversation with  
20 Mr. Porter he must have been talking about whether Mr. Porter  
21 relayed that information at any time since he took the data  
22 up to the time of the conversation within a few days of the  
23 accident; is that correct?

24 A Yes.

25 Q He had to be talking about sometime prior to

Sim 7-4

that conversation.

A Sometime prior to the day of the conversation.

Q And you don't remember any such conversation either on March 28th or at any day subsequent to the accident; is that correct?

A That is correct.

Q So you would say Mr. Lentz is incorrect in his understanding of what he learned from Mr. Porter?

JUDGE SMITH: Well, now is that intended as a follow-on from the previous question and answer or is it intended to be a new question?

MS. BERNABEI: It is intended as a follow-on.

JUDGE SMITH: If you don't understand the question as you are suggesting by your expression ---

THE WITNESS: I don't.

BY MS. BERNABEI:

Q Okay. Let me start over again. Mr. Lentz indicates, does he not, that he had a conversation with Mr. Porter a few days after the accident. Mr. Porter told him I took a complete set of incore thermocouple data and I relayed that to Gary Miller; is that right? That is what he says in substance?

A That is what he says in some of these pages.

Q Okay. And you are saying that you had no such conversation in discussions with Mr. Porter either on March

Sim 7-5

1 28th or a few days thereafter about a complete set of incore  
2 temperatures he had taken; is that correct?

3 A Today I can't recall.

4 Q So you may have, but you are not certain?

5 A I am sure that in the days afterwards I became  
6 aware of thermocouple readings taken like you showed me in  
7 the earlier deposition or the Udall Report, but I can't  
8 remember when.

9 Q A few days after the accident you became aware of  
10 those readings?

11 A I think it is in terms of a couple of weeks after  
12 the accident personally.

13 Q Okay. Let me start over again. On March 28th  
14 or a few days thereafter did you have a discussion with  
15 Mr. Porter about a complete set of incore thermocouple data  
16 such as Mr. Lentz describes in his deposition?

17 A And I can't remember.

18 Q Now hasn't it been your prior testimony that  
19 you did not learn of this complete set of incore thermocouple  
20 data until several weeks later?

21 A That is true.

22 Q Is it your testimony today that you may have  
23 learned about this complete set of incore thermocouple data  
24 within a few days after the accident? That is a possibility?

25 A It is my testimony that I really can't remember

Sim 7-6

1 today.

2 Q Now at the time that you directed Mr. Porter to  
3 take incore thermocouple data, you indicated to him, did you  
4 not, there was some urgency in getting back to you with that  
5 data?

6 A I think the fact that I asked for it was all he  
7 needed. The urgency was there because I asked for it.

8 Q Right. And I assume that if he had taken other  
9 data on the 28th, other data other than the one you now  
10 remember he gave to you, there would have been some urgency  
11 with that as well?

12 A I don't know that I really understand the question.

13 Q Mr. Porter understood on March 28th that you were  
14 operating in a crisis situation; is that fair to say?

15 A He understood we were in an emergency, yes.

16 Q And he understood that the orders you gave were  
17 to be carried out expeditiously?

18 A Yes.

19 Q And I assume that if he had taken temperatures  
20 of the sort that Mr. Lentz described on March 28th he would  
21 have relayed those to you expeditiously?

22 A That is fair to say.

23 Q But you today do not remember any discussion on  
24 March 28th of a complete set of incore thermocouple data that  
25 he took on that day as described by Mr. Lentz?

Sim 7-7

1           A       No, and in fact I don't think it was anything but  
2 verbal with me that is.

3           Q       On March 28th is it fair to say that you were  
4 operating TMI outside of emergency procedures; is that correct?

5           A       It is fair to say that we were outside of the  
6 formal procedures.

7           Q       Emergency procedures?

8           A       Yes.

9           Q       And in fact you have testified at prior times,  
10 have you not, that you were outside all your procedures,  
11 emergency procedures?

12          A       I may have, yes.

13          Q       It is true, is it not, that you were also  
14 operating TMI outside of what your training would lead you  
15 to expect or understand?

16          A       I think I have previously testified to that.

17          Q       Now sometime around 11 a.m. on March 28th you  
18 were ordered by Mr. Herbein to turn off the ventilation;  
19 is that correct?

20          A       I don't recall that today, but I have been asked  
21 about it before.

22          Q       And that is substantially correct; is that right?

23          A       Yes.

24          Q       And a short time after 11 a.m. you again turned  
25 on the ventilation; is that correct?

Sim 7-8

1 A Yes, I did.

2 Q And, if you remember, it was kept on after that  
3 time period, assuming it was in the late morning time period  
4 through the afternoon; is that correct?

5 A My desire was to keep it on, yes. I can't  
6 testify that it wasn't turned intermittently on and off,  
7 but I wanted it on. We are talking about the internal  
8 ventilation?

9 Q Yes. And you gave no directions that it be  
10 turned off; is that correct?

11 A I believe I gave directions that it be kept on.

12 Q After you gave that direction did you give any  
13 subsequent direction that it be turned off?

14 A I may have. I don't believe I did, but I can't  
15 remember.

16 Q Now at about 1:50 p.m. you were preparing to  
17 go to the Lt. Governor's office or the Governor's office;  
18 is that correct?

19 A That is correct. I don't remember the exact time,  
20 but that is what we arrived at subsequently.

21 Q Okay. And you left, it is your best memory,  
22 is it not, around 2:30 p.m.?

23 A My memory, if you go back in previous testimony,  
24 is that somewhere between 2 and 2:30, but that is based  
25 on recall, which was not very good even in the short period

Sim 7-9

1 after the events of March 28th.

2 Q Now you prepared, just to pin this down a little  
3 bit, you prepared around April 14th an interview, a transcribed  
4 interview of the events of March 28th up through 8 p.m.;  
5 is that correct?

6 A On April 14th I assembled the command group, the  
7 think tank in a room and from that discussion and tape I  
8 wrote my statement which you referred to earlier which I used  
9 in subsequent testimony from the meeting of that group attempting  
10 to go through the events of the day with all of our best  
11 recollection.

12 Q Okay. And that is what is in front of you is  
13 Joint Mailgram Exhibit No. 10; is that correct, that we have  
14 referred to before I believe as State of Gary Miller?

15 A The statement that I wrote after April 14th, yes.

16 Q That is Joint Mailgram Exhibit 10. That was,  
17 if I can quote from page 1, "An attempt to use the best  
18 recall capability in a straightforward honest fashion of the  
19 parties present and to trace the events of the day from  
20 4 a.m. until 8 p.m."?

21 A Yes.

22 Q Now in that statement you state you left about  
23 2:30 p.m.; is that correct?

24 A Would you give me a page?

25 Q Yes. It is 21.

Sim 7-10

1 A Yes.

2 Q And it is fair to say that was your best memory  
3 and evidently the group's best memory on April 14?

4 A That is true. I think it is also fair for you  
5 to know that in that group we could not within three hours  
6 arrive at that time. We got there by concluding it was  
7 still light when I came back and worked our way backwards.  
8 That is how we got to 2:30.

9 Q Okay. But that was your best memory at that time?

10 A Yes.

11 Q Now you heard a thud or a noise at the time of  
12 the pressure spike at 1:50 p.m., did you not?

13 A I heard a thud which was subsequently correlated  
14 to the time of the spike.

15 Q Okay. And that would be at 1:50 p.m. from what  
16 you know now?

17 A From what I know now.

18 Q And you were standing next to Mr. Marshall,  
19 Walter Marshall and Mike Ross in the control room at that  
20 time; is that correct?

21 A I believe that is what I have testified to  
22 before.

23 Q And at the time you heard the thud you asked  
24 what is that?

25 A Yes, I asked what is that.

Sim 7-11

1 Q And if you can remember, what was Mr. Marshall's  
2 or Mr. Ross' response to that question?

3 A Today's recall is that I still recall hearing it.  
4 I can't really recall the exact words other than that I  
5 reviewed enough of my previous testimony to tell you that I  
6 think I said what is that, and I probably used possibly an  
7 expression of profanity when I said it, and Mr. Ross'  
8 answer was, to the best of my recollection from reviewing  
9 previous testimony, was don't get nervous now, boss, you are  
10 getting old, something to the effect that that is the  
11 ventilation damper.

12 Q Now you remember Mr. Ross suggesting or saying  
13 something to you about it being ventilation perhaps?

14 A The ventilation damper shifting, which made a  
15 noise.

16 Q Now it is fair to say that Mr. Ross does not  
17 remember discussion about ventilation in any of his prior  
18 testimony; is that correct, do you know?

19 A I don't know.

20 Q Let me refer you to a portion of his deposition  
21 done in this case on September 27, 1984. You don't have that  
22 before you at the moment.

23 JUDGE SMITH: What would be the purpose of this  
24 particular line, to test his memory or refresh his memory  
25 as to Ross' lack of memory?

Sim 7-12

1 MS. BERNABEI: No. Apparently Mr. Ross, and I  
2 believe I am correct that in his prior deposition similarly  
3 to his deposition in this case, does not remember a conver-  
4 sation about ventilation.

5 JUDGE SMITH: Right. So let's assume that you  
6 take Mr. Miller through several instances of non-memory by  
7 Mr. Ross, what will we have learned?

8 MS. BERNABEI: That perhaps that conversation  
9 didn't take place.

10 JUDGE SMITH: And we will have learned that  
11 from Mr. Miller?

12 MS. BERNABEI: From Mr. Ross.

13 JUDGE SMITH: That is my problem.

14 MS. BERNABEI: Well, we will request that  
15 come here and then he can adopt his prior statement.

16 JUDGE SMITH: This is the theme that we have been  
17 q here and I don't know why we have to run it  
18 b Miller, unless you think that is going to somehow  
19 cla i Ross' lack of memory or make it more reliable or  
20 unreliable or ---

21 MS. BERNABEI: It is not his lack of memory. It  
22 is his memory which differs from Mr. Miller's and contradicts  
23 Mr. Miller's. I think if Mr. Miller is standing out there  
24 alone with his memory of what happened on that day and he  
25 is contradicted by others that were standing at the console

Sim 7-13

1 with him that that is relevant to this Board's determination  
2 of whether ---

3 JUDGE SMITH: I understand relevance. My problem  
4 now is the purpose of running it through this witness.

5 MS. BERNABEI: To see if he changes his mind.

6 JUDGE SMITH: All right.

7 What is your position, that Mr. Ross testified  
8 that there was no such conversation or that he had no memory  
9 of that conversation?

10 MS. BERNABEI: He did not testify that such a  
11 discussion took place and currently he has no memory. If I  
12 am correct, he also did not have a memory of that conversation  
13 in prior interviews. I can stand corrected on that, but that  
14 is my understanding.

15 JUDGE SMITH: Can't you give that hypothetical  
16 to the witness, absent objections by other parties?

17 MS. BERNABEI: Okay, fine.

18 BY MS. BERNABEI:

19 Q Mr. Miller, assuming for the moment that the only  
20 conversation Mr. Ross recalls today with you, and I believe  
21 also in the past, is something to the effect of don't hearing  
22 things now, boss, the first portion of what you related, and  
23 he doesn't recall any conversation about ventilation, would  
24 that refresh your recollection or otherwise change your  
25 testimony as to whether that conversation occurred?

Sim 7-14

1 A It wouldn't change my testimony, no.

2 Q You are certain that that conversation occurred;  
3 is that right?

4 A I feel it did occur, yes.

5 Q Do you recall any conversation with Mr. Marshall  
6 at the time of the noise or thud?

7 A I don't today.

8 Q Do you recall stating at that time the noise sounds  
9 like a main coolant check valve shutting, something of that  
10 nature?

11 A I don't recall it at that time.

12 Q I can represent to you that Mr. Marshall in his  
13 deposition in this case at page 10, the deposition taken on  
14 October 2nd, 1984, stated that you commented or made a statement  
15 of that sort. Does that refresh your recollection of whether  
16 that occurred?

17 A No.

18 Q Are you certain it did not occur?

19 A No.

20 Q You have no memory of it; is that right?

21 A I do not.

22 Q Were you aware that at the time -- at the same  
23 time of the spray pumps actuating?

24 A Today I don't recall. I think I previously said  
25 I don't believe I was aware.

Sim 7-15

1 Q I would like to refer you to the Joint Mailgram  
2 Exhibit No. 10 at page 22, specifically the statement that  
3 begins "It should be noted that at approximately 1400 I heard  
4 a loud, deep noise."

5 Mr. Miller, I think you have it there before you.

6 A Yes.

7 Q Just to read it into the record for those that  
8 don't have it before them, starting on page 21 "It should be  
9 noted that at approximately 1400 I heard a loud, deep noise  
10 and at that time the reactor building spray pumps started and  
11 subsequent to the events of this day I learned that this was  
12 a 30 pound pressure spike which occurred in the reactor  
13 building apparently due to hydrogen."

14 Wouldn't that statement indicate, Mr. Miller,  
15 that at approximately 1400 at the time you heard the loud,  
16 deep noise you also became aware of the reactor building spray  
17 pumps actuating?

18 A No. I said earlier it doesn't necessarily  
19 because this statement was arrived at after I taped the  
20 session between all the members of that group. I don't  
21 think I was aware. I think I have testified to that before.

22 Q Doesn't the word "I" appear twice in that  
23 sentence?

24 A I don't dispute that. When I wrote this state-  
25 ment I didn't envision its use. I wrote I as a member of

sim 7-16

1 that group and I think that is why I made the point that this  
2 statement was derived from the memories of more than Gary  
3 Miller.

4 Q Wouldn't it appear that you were aware, you Gary  
5 Miller, upon a straightforward reading of that section?

6 A From reading that sentence only, yes, it could  
7 appear that way.

end Sim  
Sue fols

#8-1-SueT 1

2 Q Now, Mr. Marshall states in his deposition in  
3 this case at Page 16 that he believes you must have known  
4 of the actuation of the containment sprays from where you  
5 were standing in the control room.

6 Does that refresh your recollection as to  
7 whether or not you became aware of those on that date?

8 A That's from Mr. Marshall's deposition?

9 Q That's correct.

10 A No, it does not change my recollection.

11 Q Okay. Are you certain you were not aware?

12 A Of --

13 Q Given that Mr. Marshall believes you must have  
14 been aware of the actuation of the containment sprays,  
15 given your position in the control room?

16 A I can only go back to what I've recalled in the  
17 past, and I have no reason to change that.

18 Q Mr. Zewe was in the control room at that time;  
19 is that correct?

20 A I don't know that today. He was there that  
21 day.

22 Q Now, if you know, isn't it his prior testimony  
23 that he turned around and said to a number of people in  
24 the control room: Hey, the spray pumps have started?

25 A I would accept he may have said that in pre-  
vious testimony. I don't remember it.

#8-2-SueT

1 Q Does that refresh your recollection as to  
2 whether you heard Mr. Zewe or someone else draw your  
3 attention to the actuation of the spray pumps?

4 A It does not.

5 Q Now, assume for a moment that you had become  
6 aware of the actuation of the spray pumps at the same time  
7 you heard the thud or the noise. You might have inquired  
8 further into the event, would you not?

9 A I might have if I had heard -- if I had connect-  
10 ed those set of events the way you have described to me.

11 Q Okay. In fact, you would have asked more  
12 questions about what was going on?

13 A I think I would have had a harder time accept-  
14 ing the ventilation answer.

15 Q Now, at the time of -- on March 28th you  
16 understood the logic of actuation of the containment  
17 sprays, did you not? That, two out of three independent  
18 pressure sensors plus, or an ES signal was required to  
19 actuate the pumps?

20 A I would have understood two out of three yes,  
21 logic for ES components.

22 Q At the time of the pressure spike, or in this  
23 period of time at 1:50 p.m., there was an ES signal, an  
24 engineering safeguard signal, received in the control  
25 room; is that correct?

#8-3-SueT 1

A I now know that. Yes.

2

Q And that's a significant event to operators;  
3 is that fair to say?

4

A It's fair to say that operators say that,  
5 yes.

6

Q Okay. And it would have been a significant  
7 event to you if you had been aware of it?

8

A I've been asked that before. If you were  
9 standing in the control room and got an ES signal, that  
10 would certainly be a significant event.

11

That particular day, I got -- I'm not sure  
12 that another ES signal would have been significant to Gary  
13 Miller that day because of the number of alarms and we  
14 had had a couple ES signals.

15

Q Well, a couple. There had been two, had there  
16 not, prior to the one at 1:50 p.m.?

17

A I don't know that number. But if that's the  
18 number, I would accept it.

19

Q Okay. So, this would only be the third one  
20 of the day; is that right, assuming I'm correct?

21

A The third ES signal, not the third alarm.

22

Q The third ES signal. Now, with an ES signal,  
23 there are a number of alarms that are actuated; is that  
24 correct?

25

A Yes.

#8-4-SueT

1 Q And some of those sound and others are visual  
2 alarms; is that correct?

3 A That's true.

4 Q And, if you know, at 1:50 p.m. there were a  
5 number of alarms that were received in the control room due  
6 to the ES signal?

7 A I accept that. I don't recall it.

8 MS. BERNABEI: Okay. I would like to mark for  
9 identification purposes as TMIA Exhibit 21 what has been  
10 represented to be a printout of those alarms received at  
11 the time of the pressure spike.

12 (The document described above is  
13 marked as TMIA Exhibit Number 21  
14 for Identification.)

15 (The document, TMIA Exhibit 21 for Identifica-  
16 tion, is being distributed to the Board members and  
17 the parties.)

18 BY MS. BERNABEI: (Continuing)

19 Q Mr. Miller, I'm going to share my copy with  
20 you since it has the color coding.

21 (The witness is looking at the document.)

22 MS. BERNABEI: For the Board and the parties  
23 information, the copy they have received is not color-  
24 coded. We will provide that. The Licensee has provided  
25 us with a color-coded version of that alarm printout which

INDEXXXX

#8-5-SueT

1 demonstrates those alarms which were activated at the time  
2 of the ES signal at 1:50 p.m. On the various copies, they  
3 all turn out as black when, in fact, some on the original  
4 were red and some were black.

5 BY MS. BERNABEI: (Continuing)

6 Q Mr. Miller, accepting my representation for  
7 the moment that the red dots on TMIA Exhibit 21 indicate  
8 those alarms which were actuated at the time of the ES  
9 signal, could you review that document and indicate to us  
10 how many alarms those are?

11 A The ones that aren't colored red mean what?

12 Q That they were already on.

13 JUDGE SMITH: They were what, already on?

14 MS. BERNABEI: Already actuated, that's correct.

15 Judge Smith, you do not have the red markings on yours.

16 JUDGE SMITH: We have dots, though.

17 MS. BERNABEI: You have dots.

18 JUDGE SMITH: The dots are the red --

19 MS. BERNABEI: No. Some of the dots are black;  
20 some are red. They don't come out on the xerox.

21 JUDGE SMITH: Oh, I see.

22 MS. BERNABEI: So we are going to have to other-  
23 wise identify them.

24 WITNESS MILLER: These are alarms on the  
25 computer?

#8-6-SueT 1

BY MS. BERNABEI: (Continuing)

2 Q That's correct.

3 A I accept that there are a lot of red dots by  
4 the alarm on the computer. But I'm not sure there is a  
5 lot of alarms that are printed out on the alarm printout  
6 on the computer.7 Q Okay. And that would indicate fully half to  
8 two-thirds of the alarms were actuated at the time of the  
9 signal?

10 A Half of the ES alarms?

11 Q That's correct.

12 A I can't tell you that. There is a lot of  
13 alarms printed out, yes.14 Q Okay. I'm talking about now how many alarms are  
15 red indicating actuation at that time?16 A A good -- I don't know the number but a good  
17 many.

18 Q Is it fair to say a half to two-thirds?

19 A I guess so.

20 JUDGE SMITH: Do you know?

21 WITNESS MILLER: I don't know.

22 JUDGE SMITH: Ms. Bernabei, do you know?

23 MS. BERNABEI: I think a half to two-thirds is  
24 a conservative estimate.

Ace-Federal Reporters, Inc.

25 MR. BLAKE: Ms. Bernabei, you would not object

#8-7-SueT

1 to my pointing out at this point while we are discussing  
2 this document that the initial line entry on this first  
3 page indicates when this was actually printed out so that  
4 there is no dispute? That is, that a little after 3 o'clock  
5 in the afternoon.

6 MS. BERNABEI: Sure.

7 BY MS. BERNABEI: (Continuing)

8 Q Now, Mr. Miller, assuming for the moment that  
9 this is an accurate representation of those alarms actuated  
10 at 1:50 p.m. with the actuation or the receipt of the ES  
11 signal, did you hear or observe any of these alarms?

12 A I honestly can't recall that today.

13 Q You can't recall any of the alarms at all?

14 A That's true.

15 Q Now, are you familiar with testimony of Mr. Ross  
16 that he believes you were aware of the containment spray  
17 actuation at this time?

18 A In the preparation for this, I reviewed something  
19 and I think it says he thought I should -- he thought I was  
20 aware. I'm not sure he is sure I was aware.

21 Q He thought --

22 A In my review of his testimony.

23 Q He thought you were aware. Okay. Does that  
24 refresh your recollection as to whether or not you were  
25 in fact aware of the actuation of the containment sprays

#8-8-SueT

1 at this time?

2 A It doesn't refresh it.

3 Q Okay. Does it cause you to change your answer  
4 as to whether or not you were aware on that date?

5 A No, it doesn't.

6 Q Were you aware of the pressure spike at this  
7 time? That is, that a spike had been recorded in -- for  
8 reactor building pressure to about 28 to 30 psi?

9 A I don't recall the day, but I believe I've  
10 been asked before, and I don't believe I was aware.

11 Q Okay. Does any of your prior testimony sug-  
12 gest that perhaps you were aware on March 28th of such a  
13 pressure spike?

14 JUDGE SMITH: Any time on March 28th; is that  
15 your question?

16 (Ms. Bernabei nodded in the affirmative )

17 WITNESS MILLER: I don't believe my previous  
18 testimony does.

19 BY MS. BERNABEI: (Continuing)

20 Q Okay. I would like to refer you to Joint Mail-  
21 gram Exhibit 23 at Page 26.

22 For the Board, I will read the portion, starting  
23 on Line 1, an answer by Mr. Miller.

24 "The containment we felt was stable. The reason-  
25 ing there would be that up 'til 2 o'clock, and I'm aware

#8-9-SueT

1 "we had a hydrogen excursion. I was aware at 2 o'clock we  
2 had an excursion. But up 'til that point we had not seen  
3 anything about 4 to 5 pounds in the building."

4 Now, wouldn't that answer indicate, Mr. Miller,  
5 that you were aware at 2 o'clock of the pressure spike?

6 A If you read just those words only out of this  
7 deposition, the answer is yes.

8 But that testimony was corrected by me in a  
9 letter, and I believe in later pages where we are revealing --  
10 the man that was questioning me was dealing with the emergency  
11 plan, not the plant. This deposition had two parts to it.  
12 One, I was the emergency guy; two, I was the plant guy.

13 And I believe in later testimony in this same  
14 deposition, it's clear I was not aware of that. But that  
15 sentence along could lead you to that conclusion.

16 Q Okay. Do you know Mr. Higgins, an NRC inspector  
17 present at the site on March 28th?

18 Do you know who he is?

19 A I know him. And I am aware that he was there.

20 Q Now, it's fair to say that he testified, did  
21 he not, in an interview with the NRC that he had a conver-  
22 sation with you in which you told him on March 30th,  
23 Friday, that you knew of the pressure spike on Wednesday?

24 A I don't recall that.

25 Q Okay. I would like you to refer to Joint Mailgram

#8-10-SueT

1 Exhibit 19, a May 1st, 1979 interview of Mr. Higgins,  
2 specifically Page 24.

3 A Which exhibit?

4 Q It's not in front of you. We will furnish it.  
5 It's 19, Page 24.

6 (The witness is furnished a copy of the  
7 document referred to.)

8 Okay, Mr. Miller, I would like to refer you to  
9 your answer -- excuse me, Mr. Higgins' answer beginning  
10 on Line 14 or 15.

11 And for the Board I will read it in. "There  
12 was so much going on, so many different things, that any  
13 given thing could easily have been missed by me or the other  
14 people. And actually, to give a further example, the  
15 first time that I realized that the spike had been there  
16 was on Friday. And on Friday people I guess were going  
17 over the charts and were looking at that. And I started,  
18 picked it up, and started to discuss it with plant manage-  
19 ment and came out and talked to Gary Miller about it. And  
20 at that point he said that in discussing -- at that point  
21 he realized that he had heard it and then he had recog-  
22 nized it on Wednesday. But that was the first time he had  
23 thought of it since that, that he had completely forgotten  
24 about it in the whole rush of events that occurred. And  
25 he stated at that point he remembered clearly saying to the

#8-11-SueT

1 "operators: What was that? And looking over and the opera-  
2 tors securing the building spray pumps. And it was at that  
3 point on Friday I believe the plant management really realiz-  
4 ed that they had that pressure spike."

5           Wouldn't that testimony of Mr. Higgins indicate,  
6 Mr. Miller, that his memory is that you told him on Friday,  
7 March 30th, that you had learned of the pressure spike on  
8 Wednesday, March 28th?

9           A     As I read that, that tells me I told him Friday  
10 that I connected some of the events. It doesn't tell him  
11 that I heard -- that I connected that Wednesday.

12           Q     The last sentence, "...in disucssing -- at that  
13 point he..." apparently Gary Miller "realized he had heard  
14 it and then he had recognized it on Wednesday." Apparently  
15 the pressure spike which is referred to above.

16                   Isn't that what he is saying?

17           A     That could be what he is saying.

18           Q     And does that refresh your recollection, Mr.  
19 Miller, as to whether or not you in fact learned of the  
20 pressure spike on March 28th?

21           A     No, it doesn't. And I'm still firmly convinced  
22 that I never connected the spike to the noise until Friday  
23 morning, the 30th, when I was looking at the charts that  
24 Mr. Higgins refers to in the control room.

25           Q     Mr. Chwastyk has testified in prior interviews

#8-12-SueT

1 that he spoke to you about the spike, and that in his  
2 conversation with you he correlated it with the cycling  
3 of the valve.

4 Do you have any memory of such a conversation  
5 on March 28th shortly after the pressure spike?

6 A No, I do not.

7 Q Okay. You are familiar with that testimony of  
8 Mr. Chwastyk, are you not?

9 A I'm familiar that the testimony generally exists.  
10 I'm not familiar with the exact words.

11 Q Okay. But you have no memory of such a conversa-  
12 tion; is that correct?

13 A No, I do not.

14 Q Mr. Chwastyk has also testified in prior inter-  
15 views, and in this hearing, that shortly after the pressure  
16 spike he asked permission from you to draw a bubble in the  
17 pressurizer.

18 Do you remember a conversation of that sort?

19 A I do not.

20 Q Okay. To your knowledge, did it occur on March  
21 28th regardless of whether you have a present memory of  
22 that?

23 (Pause.)

24 A I honestly can't exclude it from occurring. But  
25 I can't remember it, and I didn't previously either.

#8-13-SueT 1

Q Did you give Mr. Chwastyk permission on March 28th to draw a bubble in the pressurizer some time after the pressure spike?

4 A I don't believe I did. But I don't recall.

5 Q Okay. So, you may have. Is that your testi-  
6 mony?

7 A I said I don't recall.

8 Q If you know, there was an attempt made to draw  
9 a bubble in the pressurizer a short time after the pressure  
10 spike; is that correct?

11 A I don't know that. But that's -- that has been  
12 discussed with me in other testimony.

13 Q The block valve was closed at 3:08 p.m.; is that  
14 correct, from discussions --

15 A That has been shown to me, yes.

16 Q And that would be the -- that and turning on the  
17 pressurizer heaters would be what was required to draw a  
18 bubble in the pressurizer; is that correct?

19 A Yes.

20 Q So, assuming for the moment the pressurizers  
21 were turned on, that the block valve was closed at 3:08 p.m.,  
22 that would lead, or be an attempt to draw a bubble in the  
23 pressurizer; is that correct?

24 A That would -- that's correct.

25 Q Now, you have no present memory of giving Mr.

#8-14-SueT 1

Chwastyk permission to draw that bubble; is that correct?

2

A That's correct. And I wasn't on the site at

3

3:08.

4

Q Assuming for the moment you left around 2:30 p.m.,

5

Mr. Miller, as stated in your prior testimony, you gave

6

directions, did you not, that the plant status was not to

7

be changed without your permission; is that correct?

8

A That's correct.

9

Q And at the time you left, you put Mr. Logan

10

in charge; is that correct?

11

A Yes, he was the Superintendent at TMI-2.

END #8 12

Joe flws 13

14

15

16

17

18

19

20

21

22

23

24

25

1 Q Now, to your knowledge, could anyone other than  
2 yourself, under that set of directions, have given permission  
3 to close the block valve at 3:08 p.m?

4 A I believe that the block valve cycling itself  
5 had been done throughout the day, and that permission could  
6 have come from other than me, but it would normally have come  
7 from me, yes.

8 Q I am not talking about cycling. I am talking about  
9 closing the block valve and leaving it closed for several  
10 hours. Could that direction have come from anyone other  
11 than yourself under the set of directions that you gave at  
12 the time you left?

13 A My directions were that we shouldn't change the  
14 mode of the plant.

15 If the people up there made a judgment that that  
16 valve could be cycled without changing, they could have made  
17 a judgment that valve could have been shut without my  
18 permission, or they could have interpreted they had to talk  
19 to me, that is what I am trying to say.

20 Q Wouldn't that have been changing the mode of the  
21 plant; closing it and leaving it closed for two hours, at  
22 the same time as turning on the pressurizer heaters?

23 A I would have to say probably you are -- yes.

24 Q That would have ceased depressurization of the  
25 system, is that correct?

1 A I would agree with that.

2 Q Therefore, that would have been one of the things  
3 that under the set of directions you gave, you would have had  
4 to give permission to do?

5 A I would have expected to have been asked.

6 Q Do you know today who authorized the closing of the  
7 block valve and turning on the pressurizer heaters in this  
8 3:08 time frame?

9 A I do not.

10 Q Mr. Mehler has testified that you gave an  
11 instruction not to activate equipment in the reactor building  
12 due to a fear of causing a spark. Due to your concern for  
13 possible hydrogen in the reactor building. He has placed that  
14 instruction in his memory with his activation of oil and  
15 backstop pumps. In prior interviews, prior to today, he  
16 has stated he was certain it was on the 28th.

17 Mr. Chwastyk stated he remembers an instruction  
18 given not to activate equipment in the reactor building given  
19 on March 28th. Do you remember any such instruction?

20 A No, I do not.

21 Q Did you give any such instruction on March 28th?

22 A I really don't recall the day, but I think I have  
23 been asked that a few times before, and I am pretty sure that  
24 I have said at a closer point to the events to that day that  
25 I did not recall it, and don't believe it was given on that

1 day by me, that order.

2 Q Did you at any time give such an instruction?

3 A In the subsequent days to the 28th, we did take  
4 precautions, and I cannot pin down which days.

5 Q Now, there is a notation about a similar instruction  
6 given on the evening of March 29th. Did you give instruction  
7 on the evening of March 29th?

8 A I don't recall.

9 Q Were you at TMI on the evening of March 29th  
10 after 7 or 8 p.m?

11 A I don't know.

12 Q Do you remember testifying at a prior time that  
13 in fact you were not at TMI on the evening of March 29th?  
14 You left some time around seven or eight p.m?

15 A I think I recall that statement.

16 Q I would like to refer you to Joint Mailgram  
17 Exhibit 95, at page 23.

18 (Witness peruses document)

19 Mr. Miller, referring you on page 23 to the answer  
20 on Line 23, you state, do you not: I don't believe I was there.  
21 I believe I had then either the 7 to 7, or 8 to 8, referring  
22 to March 29th, is that correct?

23 A Yes.

24 Q So, apparently from this prior testimony you were  
25 not at TMI on the evening of March 29th after approximately

1 7 or 8 p.m?

2 A That is true from this testimony.

3 Q Do you have any memory of giving such instruction  
4 on any day after March 29th?

5 A The only recall I have today is that some time  
6 after the 28th we did take those precautions, and I can't  
7 remember who initiated the order.

8 Q Do you remember any conversation with Brian Mehler  
9 in which he stated to you: Well, I have already started the  
10 pumps. There must be nothing left.

11 Referring to the containment or reactor building?

12 A No.

13 Q At no time?

14 A Not today, no.

15 Q Did you at any prior time remember such conversation;  
16 any of your prior testimony?

17 A Can you tell me what you are referring to exactly,  
18 the words again?

19 Q Yes. Mr. Mehler has testified, and I believe it  
20 appears in his prior interviews as well, that at the time you  
21 gave him the instruction not to activate the equipment in the  
22 reactor building, he stated to you: Well, I have just started  
23 some pumps, oil backstop pumps, and nothing happened, so it  
24 must be all gone.

25 Apparently referring to hydrogen in the reactor

1 building. Do you remember any such conversation at any time  
2 with Brian Mehler?

3 A I don't.

4 JUDGE SMITH: When you come to a logical breaking  
5 point, we will break for lunch.

6 MS. BERNABEI: That is fine, yes.

7 JUDGE SMITH: All right, let's return at 1:35.

8 MR. BLAKE: May I ask how much more Ms. Bernabei  
9 has?

10 MS. BERNABEI: Half an hour at the most.

11 MR. BLAKE: Thank you.

12 (12:35 p.m.)

13

14

15

16

17

18

19

20

21

22

23

24

25

INDEX xxxxx 1

(1:38 p.m.)

AFTERNOON SESSION

GARY PAUL MILLER,

a witness having previously been duly sworn, resumes the stand and further testifies as follows:

BY MS. BERNABEI: (Continuing)

Q Mr. Miller, you were directed by Mr. Herbein to go to brief the Governor is that correct, on March 28th?

A That is my recollection of previous testimony, I was directed, yes.

Q And is it fair to say that in this briefing, at least as you understood it, Mr. Herbein was to direct the briefing, or perform the majority of the briefing? He was the main actor?

A Yes.

Q And you were to provide any technical support or backup you could give, is that correct?

A That is true.

Q Mr. Kunder also went to the briefing, did he not?

A He went along, yes.

Q And he was directed, was he not, to collect data or information about plant parameters in preparation for the briefing, is that correct?

A That is true.

Q And in fact, he did collect data and information,

1 including the sequence of events, if I am correct?

2 A I can't recall today, but I believe he did try to  
3 assemble things like that as best he could.

4 Q And you left, at least according to your early  
5 memory, at about 2:30 p.m., is that correct?

6 A In my previous testimony, yes.

7 Q Now, at the time -- well, did the three of you  
8 travel together to the lieutenant governor's?

9 A Yes.

10 Q And during the ride to the lieutenant governor's,  
11 did you brief Mr. Herbein on the status of the reactor?

12 A I don't recall today, but I am sure the three of  
13 us talked about the status.

14 Q Do you remember either yourself or Mr. Kunder  
15 briefing him on specific plant parameters during the ride  
16 to the State House?

17 A I don't recall today.

18 Q Do you recall anything about what you or Mr. Kunder  
19 may have told Mr. Herbein in this conversation?

20 A Not today I don't.

21 Q Does any of your prior testimony indicate what you  
22 may have told him?

23 A I don't recall.

24 Q It is fair to say it took you approximately  
25 thirty to forty minutes to travel to the State House?

1 A As an approximation, I would guess thirty minutes.  
2 To forty minutes, yes.

3 Q Now, at the time you arrived you met Mr. Dieckamp  
4 on the steps of the State House, is that correct?

5 A We ran into him.

6 Q Ran into him. Do you remember what, if any,  
7 you had with Mr. Dieckamp. I am talking about you and the other  
8 two in your group with Mr. Dieckamp at that time?

9 A The only recollection I have is the one I gave  
10 you in the deposition, and that is, I think Mr. Dieckamp asked  
11 me who is minding the store, and I don't even think I remember  
12 the answer to that.

13 Q Do you remember any discussion of any conditions  
14 or events at the then on-going transient or accident at TMI?

15 A No, I don't.

16 Q Do you remember if Mr. Dieckamp asked any questions  
17 about the accident in transient?

18 A I don't recall.

19 Q Do you recall if Mr. Dieckamp indicated he had  
20 any information about the transient or accident on-going at  
21 TMI?

22 A I just don't recall other than what I have told  
23 you. That is my total recollection of anything that was  
24 said on those steps.

25 Q Now, is it fair to say this was the only time you

1 remember talking to Mr. Dieckamp on March 28th?

2 A Yes, on March 28th, from previous review of testimony  
3 today I can't remember any more, but I don't think I recall  
4 any other time previously on the 29th that I talked to him  
5 other than that moment.

6 Q And you can't remember anything of your conversation  
7 other than what you said, where Mr. Dieckamp said: Who is  
8 minding the store?

9 A That is true.

10 Q And he was at that time, as he is now, the President  
11 of GPU, is that correct?

12 A I believe so.

13 Q Can you explain why you can't remember more of the  
14 conversation -- your only conversation you remember on  
15 March 28th with the President of the Company?

16 A No, I can't.

17 JUDGE SMITH: Mr. Miller -- do you mind if I ask  
18 --

19 MS. BERNABEI: (Nods head negatively)

20 JUDGE SMITH: Is your memory that you simply don't  
21 recall what you talked about, but that you recall that you did  
22 have a discussion with him?

23 WITNESS: My memory is that we were late, and that  
24 we were hurrying up the steps and we stopped very briefly,  
25 and for some reason it sticks in my mind that he said that

1 to me. I knew him. You know, I knew him as a person. He  
2 just looked and he saw Herbein and Miller, and he said who is  
3 minding the store, and I don't believe there was much discussion  
4 after that, but I have no memory of it.

5 I think it was like an encounter of seconds, because  
6 we were late.

7 Q Do you remember saying during your deposition that  
8 one basis for not remembering was that Mr. Dieckamp was only  
9 one other person to you on March 28th?

10 A I said that in response to the question you asked,  
11 which was sort of saying wouldn't I remember more about that  
12 with the President of this Company, and I meant what I said,  
13 he was one other person on March 28th.

14 Q Did you attend a briefing with the lieutenant  
15 governor?

16 A Reviewing previous testimony, I really don't  
17 recall the day. I was in part of that briefing, not all of  
18 it.

19 Q Is it fair to say Mr. Herbein conducted the major  
20 portion of that briefing?

21 A I think that is true, but I couldn't put a  
22 percentage of how long I was there or wasn't. I would say  
23 he did the major portion of it.

24 Q And is it fair to say that that portion that you  
25 did not attend, you were on the phone with the plant, with

1 the control room?

2 A Either me, or me talking to George, I am not sure  
3 who was on the phone.

4 Q If I am correct, Mr. Kunder had opened up a line  
5 from the State House, or State Capitol, to the Unit 2 control  
6 room, is that correct, some time after you arrived?

7 A I don't remember that, but I believe we amongst us  
8 decided that afterwards.

9 JUDGE SMITH: George is George Kunder?

10 WITNESS: George Kunder.

11 BY MS. BERNABEI: (Continuing)

12 Q And as I understand your testimony -- well, let  
13 me ask you, it is fair to say that Mr. Kunder was on the  
14 phone pretty continuously with the control room from the time  
15 you arrived until the time you left?

16 A I don't really recall that, but I believe that is  
17 probably true.

18 Q And if I understand you correctly, you were either  
19 talking to Mr. Kunder or yourself on the line for at least a  
20 portion of the time the three of you were in the State House?

21 A I think so, but I don't recall.

22 Q It is fair to say that any portion of time you did  
23 not spend in the briefing, you were on or near the phone to the  
24 control room?

25 A And that was the way I got to that conclusion,

1 was assuming when we left there I came out and stood near  
2 George and one of us was on the phone.

3 Q What if any information did you receive about  
4 plant status during that phone call?

5 A I can't recall. I have been asked that before  
6 much earlier, and did not recall, that I remember.

7 Q You recall anything that transpired in that phone  
8 call?

9 A No.

10 Q Did Mr. Kunder ever inform you of anything he had  
11 learned in that phone call?

12 A I don't believe so, even afterward.

13 Q So you have no knowledge today of anything that  
14 transpired in the phone call from the time you arrived  
15 apparently at the State House until some time after you left?

16 A That is true, and I told you before I don't even  
17 remember the ride back for some reason, and I didn't right  
18 afterward.

19 JUDGE SMITH: Your answer to the last question  
20 is you don't believe so. You don't believe Mr. Kunder gave  
21 you any information from his telephone call?

22 WITNESS: I believe he did, but I just don't recall.

23 BY MS. BERNABEI: (Continuing)

24 Q Have you talked to Mr. Kunder about this phone call  
25 any time after the accident?

1           A     I don't believe so. I don't believe at any time,  
2 even prior to this.

3           Q     You have been questioned, have you not, by the NRC  
4 concerning this phone call?

5           A     I don't remember, but I would speculate yes.

6           Q     And you didn't at those interviews much earlier in  
7 time you didn't remember anything did you; not much.

8           A     I don't think so.

9           Q     Now, after the briefing of the lieutenant governor,  
10 you returned to the site, is that correct?

11          A     Yes, we did.

12          Q     Do you remember how -- who returned with you?

13          A     In the deposition we conducted recently, I think I  
14 told you I honestly don't remember the trip back. I think I  
15 remember getting out of the car after I got back.

16 End 9.  
17 SM fols.  
18  
19  
20  
21  
22  
23  
24  
25

Sim 10-1

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

Q Do you remember leaving the State House?

A No.

Q Do you remember whether or not you left with Mr. Herbein and Mr. Kunder, that is the three of you left together?

A I don't remember.

Q Do you remember anything about the ride back?

A I don't remember the ride back?

Q Do you remember if Mr. Herbein or Mr. Kunder returned with you to Unit 2, that is that with either one of those gentlemen you returned together with him?

A I only have one point of recollection, and I don't think this is an area that I have been asked about very often and I gave that to you in the deposition. I remember getting out of the car at the process center and I don't even remember if George got out of the car with me.

Q So it is fair to say you have absolutely no memory of the time when you left the State House until the time you returned to the site?

A I do not.

JUDGE SMITH: Excuse me. What was the first phrase of your question?

MS. BERNABEI: You have absolutely no memory.

JUDGE SMITH: Oh, absolutely. Okay.

BY MS. BERNABEI:

Sim 10-2

1 Q Do you know if you talked to Mr. Dieckamp at  
2 any time after the briefing of the Lt. Governor up to the  
3 time you returned to the site?

4 A I don't think so, but I don't remember the ride  
5 back, as I told you. I don't believe I saw him more than  
6 one time that day and that is at the steps on the way in.

7 Q Did you discuss with him, whether or not you saw  
8 him physically, did you discuss with him anything after the  
9 briefing?

10 A I don't believe we have ever talked about that.  
11 You are asking me subsequent to the events of ---

12 Q I am asking what is your current knowledge or  
13 memory is, if you remember any conversations with Mr. Dieckamp  
14 in this period of which you have no recollection?

15 A No, I do not. You are asking me if I remember  
16 any conversations during that period when I don't remember?

17 Q Right. You remember nothing?

18 A That is the truth.

19 Q Do you know if Mr. Herbein had any conversations  
20 in this period between the time you left, the group left  
21 the Lt. Governor's briefing until the time you Gary Miller  
22 returned to the site?

23 A I don't recall leaving or the ride back for  
24 some reason. I have said that and I can't do any better  
25 than that.

Sim 10-3

1

Q Mr. Miller, you had an evaluation, did you not.

2

on March 28th that there was some core damage at TMI; is that fair to say?

3

4

A Yes. I have testified to that previously.

5

Q And I think you have also testified, have you

6

not, that you weren't sure of the degree, that is whether it was one percent or somewhat higher than that?

7

8

A I think I have said that with relation to the

9

think tank group, yes, that we hadn't thought about it in those terms. I think I have testified to that before.

10

11

Q Okay. But you testified, did you not, that you

12

thought there was core damage, you considered it, but you

13

didn't know if it was one percent or greater than one percent?

14

A I don't recall that.

15

Q But that is in fact what you thought on that

16

day?

17

A I don't know. I don't recall that testimony.

18

Q Do you recall today whether or not you thought

19

that on the day, that there is core damage, but I don't

20

know if it is one percent or a lot higher than that?

21

A I can't separate whether I recall from that day

22

or recall from testimony about that day. I know that there

23

is testimony where I have discussed fuel pins and one percent,

24

but I can't today say I recall that from the day of.

25

Q Okay. Do you remember testimony that you

Sim 10-4

1 believed you had fuel damage and you didn't know whether  
2 it was one or 100 percent, something like that?

3 A I don't remember the 100 percent, but I remember  
4 the one percent.

5 Q Okay.

6 A But if you have got a reference.

7 Q Why don't I refer you to Joint Mailgram Exhibit  
8 85, your Senate testimony of I believe it is September 28,  
9 1979 at page 46.

10 A 85?

11 Q Right, 46

12 (Pause.)

13 Now referring you, Mr. Miller, to your answer  
14 beginning on line 14, you indicate, do you not, "I didn't  
15 ask myself whether I had one or one hundred percent fuel  
16 damage, but I observed fuel damage"?

17 A Yes.

18 Q "I didn't evaluate how much because the indicators  
19 were high numbers enough that the necessary action was  
20 underway," is that correct?

21 A Yes.

22 MS. BERNABEI: I have no other questions.

23 JUDGE LINENBERGER: Sir, with respect to this  
24 most recent question and answer exchange, I thought I heard  
25 the word and I think quoting you "observed." Is that word

Sim 10-5

1 in the particular answer you were just discussing, observed  
2 fuel damage?

3 THE WITNESS: That word is in the transcript, yes.

4 JUDGE LINENBERGER: Okay. To the best of your  
5 recollection with respect to that transcript answer, can you  
6 say now what you thought you meant then by the word  
7 "observed"?

8 THE WITNESS: It meant I observed the indications  
9 which were radiation monitors off scale, and when I was asked  
10 the question many times about fuel damage, I have given the  
11 answer that obviously there was some fuel damage to get  
12 the radiation. But I did not ask myself that percentage  
13 because the numbers were all off scale high and once you  
14 went off the scale high you already were into the general  
15 emergency. I didn't examine that because it wasn't relevant  
16 to the reaction I was taking.

17 JUDGE LINENBERGER: All right. Thank you.

18 JUDGE SMITH: Mr. Au.

19 CROSS-EXAMINATION

20 BY MR. AU:

21 Q Did you have any conversation with Mr. Creitz  
22 on the morning of March 28th?

23 A I can't recall of any conversation today, and I  
24 believe I have previously been asked, and I also had the  
25 same answer that I don't recall of any.

INDEXXXXXX

Sim 10-6 1

2 Q Is it your recollection that you reported to  
Mr. Herbein only?

3 A Yes.

4 Q You had no other communication with any other  
5 superiors?

6 A I don't believe so of any other officer level  
7 personnel. That is the senior -- I don't believe I talked  
8 to any other vice presidents, but I am going on what I have  
9 been asked before. I don't remember today of anything else  
10 either.

11 Q Do you know if anyone else reported directly to  
12 Mr. Herbein other than yourself from the plant site?

13 A No one reported to him. Everybody on the plant  
14 site reported to me.

15 Q And then you in turn reported to Mr. Herbein?

16 A Yes.

17 Q So his only source of information about the  
18 condition of the plant would come directly from you?

19 A I have been asked that before and I have said  
20 I think consistently, and I don't change that today, that  
21 I was the major source. I believe Jack had other conver-  
22 sations with people who were in the control room, but his  
23 major source of information was me.

24 Q That is for the time period of the morning of  
25 March 28th?

Sim 10-7

1 A For the entire day.

2 Q For the entire day, okay.

3 A In the morning, remember, he was not there. He  
4 was on his way to the site from Philadelphia.5 Q Yes, I understood that, but you had a phone  
6 conversation with him before he arrived?

7 A In the very early hours from my home, yes.

8 Q Did you have any occasion to brief shift super-  
9 visors in the morning of the 28th?

10 A Can you tell me what you are really asking me?

11 Q Oh, I am wondering about at the time Mr. Chwastyk  
12 and others came on site did you have a chance to brief them  
13 on the condition of the plant?14 A My recollection previous and today is that when  
15 I arrived at the site I relieved the shift supervisor of the  
16 emergency director duties. From that point on I don't believe  
17 I personally briefed any shift supervisors. I would have  
18 depended on people in that think tank or other shift  
19 supervisors, not that I recall or did recall in the past.

20 MR. AU: I don't have any other questions.

21 MS. FINKELSTEIN: Judge Smith, I thought the  
22 order would be that the licensee would follow TMIA.

23 MR. BLAKE: I am happy to go if that is a request.

24 JUDGE SMITH: I beg your pardon?

25 MR. BLAKE: I am happy to go now if that is the

10-8

1 request.

2 JUDGE SMITH: Well, we don't really have a neat  
3 classification of who is whose witness here. But inasmuch  
4 as Mr. Miller is a company employee, I have sort attached  
5 him to the licensee and in that event they would have gone  
last. But whatever you wish to work out is fine with us.

7 MS. BERNABEI: Well, I would suggest we follow  
8 the normal arrangement simply because then Mr. Blake's  
9 redirect appears in the ---

10 JUDGE SMITH: I don't really recognize a normal  
11 arrangement.

12 MS. BERNABEI: A normal arrangement, at least as  
13 I understand it, is the cross-examination, whether it is  
14 an adverse witness or the cross of a direct witness, go  
15 first and then the company has a redirect or ---

16 JUDGE SMITH: I would have expected Mr. Blake  
17 to go last.

18 MS. BERNABEI: I guess that is what I call  
19 redirect.

20 JUDGE SMITH: But I don't care. I don't think  
21 it matters.

22 MS. FINKELSTEIN: That is fine with us.

23 CROSS-EXAMINATION

24 BY MS. FINKELSTEIN:

25 Q Mr. Miller, in response to a question posed by

INDEXXXXX

Ace-Federal Reporters, Inc.

Dim 10-9

1 Ms. Bernabei, you testified that there were running  
2 discussions on March 28th among members of the think tank  
3 on assuring core coverage on March 28th?

4 A Of absolute assurance of core coverage.

5 Q Is that your testimony?

6 A I believe that is the testimony today and  
7 previous.

8 Q Do you make a distinction between discussions  
9 concerning assign absolute coverage of the core and  
10 discussions concerning reasons to believe that the core was  
11 in fact uncovered?

12 A I guess I make that distinction because I spent  
13 a period of 17 hours one day in September 1980 discussing  
14 coverage and uncoverage with the NRC, and during that  
15 discussion I tried to make the distinction that that day  
16 I never believed the core was uncovered and therefore I was  
17 working to make sure that it didn't get uncovered. I didn't  
18 start out from the point of assuming uncoverage, and that  
19 is significant. I just never thought about an uncovered  
20 core in my life.

21 Q At the time of the thud, Mr. Miller, did you have  
22 any reason to believe you might be late for the briefing  
23 at the Lt. Governor's?

24 A I was late already.

25 Q Do you recall what time you arrived for the

Sim 10-10

briefing at the Lt. Governor's?

A No. I have told you the 2:30 we arrived at in a room on April 14th, 1979, and it took five guys trying to figure it out and we worked out way back from daylight, which is when we got back. So 2:30 is my recollection, but it is arrived at very inarticulately in that it is a guess.

Q When you say arrived at, is that you arrived at the Lt. Governor's at 2:30?

A Well, I mean I arrived at that time for when we left the site. I concluded that time from a discussion with those people and it is a best guess that we left the site at 2:30 which is what I was asked earlier.

Q Do you have any recollection of what time you arrived at the Lt. Governor's?

A No.

MS. FINKELSTEIN: Thank you. We have no further questions at this time..

JUDGE SMITH: Mr. Blake.

CROSS-EXAMINATION

BY MR. BLAKE:

Q Mr. Miller, have you ever intentionally withheld any information regarding the pressure spike from the NRC or other authorities?

A No, I have not.

Q Do you have any reason to believe that any of the

INDEX

Sim 10-11

1 individuals with whom you have worked at TMI would have  
2 withheld information or any understanding that they had  
3 about the pressure spike from the NRC or other authorities?

4 A I don't know. I don't believe any one would.

5 Q When did you first become aware of the pressure  
6 spike?

7 A I believe, and I still believe it today that  
8 Friday morning, and I could be wrong on Friday, but I think  
9 it is Friday morning, I went through my office which was a  
10 trailer. It was the only trailer in the TMI parking lot in  
11 those days, and Mr. Lowe, who was a consultant, was in my  
12 trailer because it was the only facility. And as I passed  
13 through my office on the way to the control room, he told  
14 me we had a hydrogen burn the day of the accident. And in  
15 fact I think I still recall him saying it was the best thing  
16 that happened to us that day.

17 And I went right from there to the control room,  
18 had Mr. Porter pull the charts and, to my knowledge, from  
19 previous recollection and even prior to that that I recall  
20 today, that was my first real realization of the spike.

21 Q Well, why is it that you have this recollection  
22 or believe that that occurred the way you have described it?

23 A Because it was a significant piece of information  
24 and it just stuck in my mind. It always has because it is  
25 just something that I hadn't know about that was significant.

Sim 10-12

1 Q And you said you went to the control room and  
2 asked Mr. Porter to pull some charts. What are you referring  
3 to?

4 A I think I had him pull the reactor building  
5 charts for pressure to look for this spike.

6 Q And the purpose of pulling them would have been  
7 to verify, or you tell me. What did you have on your mind  
8 by asking him to do this?

9 A Some of that is hazy as far as my real recollection,  
10 but I think I was looking at the pressure in the building  
11 relative -- I think when I got there Friday people had  
12 arrived at this conclusion that there had been a burn and  
13 maybe a spike and I was looking at the charts to see it  
14 for myself because that was my first knowledge of it and  
15 I just was surprised I guess.

16 Q Would you describe Mr. Ross' function during that  
17 day, the first day, March 28th, particularly his function  
18 as related to the interface between you and TMI-2 operations  
19 personnel?

20 A When I arrived on March 28th, I don't remember  
21 whether Mike was in Unit 2 or not any more. The reason was  
22 the Unit 2 operations supervisor was off at training in  
23 Lyncherg, Mr. Floyd. So I used Mr. Ross as my operations  
24 interface with the control room and he was in overall charge  
25 of the plant operation.

Sim 10-13

1 Q In terms of discussion about operations at the  
2 plant that day do you regard Mr. Ross as your interface for  
3 all directions and/or information that was coming?

4 A I think I attempted to keep myself for the most  
5 part one step removed from direct interface with operators  
6 and workers and he was my interface with the operations  
7 group. That does not mean to say that I didn't know everybody  
8 up there and they couldn't have talked to said something to  
9 me, but I used him for the direction so that I had one guy  
10 to go through.

11 Q Do you recall any discussions with Mr. Ross  
12 prior to leaving for the Lt. Governor's office regarding any  
13 requests by Mr. Chwastyk to draw a bubble?

14 A I don't today, and I believe I have previously  
15 said I didn't recall any of those discussions.

16 Q At that point in time in the early afternoon on  
17 March 28th did you have an indication of apparent reactor  
18 coolant system level by virtue of a pressurizer level?

19 MS. BERNABEI: Can I object to the time. I  
20 think early morning is vague. I don't know if he is  
21 talking about before the pressure spike ---

22 MR. BLAKE: I thought I said early afternoon,  
23 but if I didn't that is certainly what I intended.

24 MS. BERNABEI: Well, I misspoke. Early afternoon  
25 I think if vague considering that the operative event is

Sim 10-14

1 the pressure spike and it should be in reference to that.

2 MR. BLAKE: That is fine. At about a time when  
3 you now know the pressure spike occurred prior to your leaving  
4 for the Lt. Governor's office, did you have available to  
5 you at that point an indication of the amount of coolant in  
6 the reactor coolant system by virtue of the pressurizer level?

7 THE WITNESS: I think I have been asked that  
8 before, or it is in my statement, but I can't today remember.  
9 We were close to being offscale high on the pressurizer. I  
10 don't remember whether it was starting to indicate slightly  
11 before the top or not.

12 BY MR. BLAKE:

13 Q Was it the pressurizer level which to you on  
14 that day indicated the apparent quantity of coolant in the  
15 reactor coolant system?

16 A No.

17 Q What indicated that to you?

18 A I really didn't have an indication of it.

19 Q Would it have been counterproductive or detrimental  
20 to have had that sort of indication at that point, that is  
21 to have had a bubble in the pressurizer?

22 MS. BERNABEI: Objection, leading, and also it  
23 is not clear what counterproductive means.

24 JUDGE SMITH: So you are saying it is both  
25 leading and vague and that is quite a trick to get that in

Sim 10-15

1 the same question.

2 MS. BERNABEI: No. I will state it very clearly.  
3 I think he wants to Mr. Miller to say yes, it was counter-  
4 productive and once we have that answer that the licensee is  
5 free to argue whatever he wants to argue with counterproductive.

6 JUDGE SMITH: Oh, I see.

7 MS. BERNABEI: So I think it is both leading and  
8 vague.

9 JUDGE SMITH: Yes. I am also concerned about  
10 whether you really mean the indication would be counter-  
11 productive or the situation, the circumstance indicated by  
12 the indication.

13 (Pause.)

14 and Sim  
Sue fols

15

16

17

18

19

20

21

22

23

24

25

#11-1-SueT

1

BY MR. BLAKE: (Continuing)

2

Q Mr. Miller, would it have been preferable to you

3

at that point to have had an indication of level in the

4

primary coolant system by having a bubble in the pressuriz-

5

er?

6

MS. BERNABEI: Objection. Leading.

7

JUDGE SMITH: Overruled. Well, overruled as far

8

as leading is concerned. But preferable as to what?

9

MR. BLAKE: Preferable to the position he has

10

indicated, he didn't really know where he stood at that

11

point with regard to level, and I'm asking him whether or

12

not it would have --

13

JUDGE SMITH: Preferable to knowing no informa-

14

tion?

15

MR. BLAKE: That's correct.

16

JUDGE SMITH: You may answer, Mr. Miller.

17

WITNESS MILLER: Initially, when I arrived at

18

the site, we started reactor coolant pumps and got 100

19

amps instead of 600. So, we knew we had a steam environ-

20

ment at the level of the pumps. And at various points,

21

Mr. Blake, throughout the morning we looked at the eleva-

22

tion drawings.

23

And what I'm leading to is I'm not sure by mid-

24

afternoon having a level in the pressurizer would have

25

convinced Gary Miller of anything other than that's one

#11-2-SueT

1 place I had water and steam. I don't know that it would  
2 have convinced me that I had water everywhere else because  
3 of what I already knew. So, it wouldn't have told me  
4 anything more necessarily, not coming from where I did.

5 BY MR. BLAKE: (Continuing)

6 Q Would it have bothered you if there had been a  
7 bubble in the pressurizer at that juncture?

8 MS. BERNABEI: Objection. That's a totally  
9 meaningless question.

10 JUDGE SMITH: Do you understand the question?

11 WITNESS MILLER: I think so.

12 JUDGE SMITH: Apparently it's not without  
13 meaning.

14 MS. BERNABEI: Well, I can't understand it, and  
15 I think the parties --

16 JUDGE SMITH: I agree that we should know what  
17 it means, but I think the witness harbors that informa-  
18 tion and not Mr. Blake. Mr. Blake possibly have an idea  
19 of what answer he expects, but you have been talking about  
20 leading and now let's find out what the witness means by  
21 being bothered.

22 MS. BERNABEI: Let me just state my objection.  
23 I think the attorney has the obligation to define the  
24 question, not the witness.

25 JUDGE SMITH: If he defines the question, then

#11-3-SueT 1

2 he is going to be even more leading than you object to.  
3 But if you want, go ahead. Mr. Blake, would you satisfy  
4 counsel's inquiry and suggest the way that the witness  
5 might be bothered.

6 MR. BLAKE: Yeah. I'm going to explain to Ms.  
7 Bernabei that in view of all of the discussions which have  
8 been had about whether or not there was an inquiry to draw  
9 a bubble, I don't think that that would have bothered any-  
10 body at that juncture to have drawn a bubble or upset their  
11 system. And that's all I expect to get out of the testimony.

12 I don't think it would have been counterproductive.  
13 I don't think it would have been detrimental. I don't think  
14 it would have bothered where they stood at that point to  
15 have had a bubble.

16 It might have given them some additional infor-  
17 mation. Maybe it wouldn't have helped. But I don't think  
18 it would have been anything so bad or such a big deal.

19 MS. BERNABEI: Well, with this explanation I  
20 think the question was the same as the prior question  
21 which was: Would it have been preferable to you? That is,  
22 would it have been an indication of the level?

23 And Mr. Miller has already answered that I thought  
24 at some length.

25 JUDGE SMITH: Well, let's let Mr. Blake try his  
case his way. It's overruled.

#11-4-SueT 1

MS. BERNABEI: It's the same question the way  
2 he has just explained it.

3 JUDGE SMITH: It's not the same to me.

4 MS. BERNABEI: Okay. That's my objection.

5 JUDGE SMITH: One can be a preference of  
6 positive over neutral.

7 MR. BLAKE: Right.

8 JUDGE SMITH: And bother could be something less  
9 than neutral, so they are not the same.

10 BY MR. BLAKE: (Continuing)

11 Q Do you recall the question, Mr. Miller?

12 A I --

13 JUDGE SMITH: Do you want the question back?

14 WITNESS MILLER: Is the question, would it have  
15 bothered me to have a bubble in the pressurizer?

16 BY MR. BLAKE: (Continuing)

17 Q That's correct.

18 A No. It wouldn't have bothered me. It wouldn't  
19 have gotten me out of where I was either.

20 JUDGE SMITH: Was that the question, or was the  
21 question: Would it have bothered you not to have a bubble?

22 MR. BLAKE: No, it was would it have bothered  
23 you to have had a bubble in the pressurizer.

24 BY MR. BLAKE: (Continuing)

25 Q Mr. Miller, do you now believe that you had a

#11-5-SueT 1

2 discussion with Mr. Chwastyk on March 28th, 1979 prior to  
3 leaving for the Lieutenant Governor's Office regarding  
4 what we now term as the pressure spike?

5 A I don't today believe it, and I believe I've  
6 said that in the past.

7 Q If you had had a conversation with him at that  
8 juncture, and he had indicated to you his belief that the  
9 spike was real, and said to you it was an explosion, or we  
10 just had a hydrogen explosion, do you believe you would  
11 recall that?

12 MS. BERNABEI: Objection. It calls for  
13 speculation.

14 JUDGE SMITH: No, not from this witness it  
15 doesn't. Overruled.

16 WITNESS MILLER: I've given that question, from  
17 my own mind, some thought before this today and previously.  
18 I certainly know Joe Chwastyk for him to have said things  
19 to me standing in the control room. He could have, amongst --  
20 I try and put it in the context of having very few instru-  
21 ments I could look at to tell me anything. I don't screen  
22 out the possibility somebody said some instrument had a  
23 spike on it and that's electrical.

24 I don't remember that. But I don't screen it  
25 out. But I firmly believe today, and I've believed it ever  
since this discussion started years ago, that had anybody

#11-6-SueT

1 said explosion, hydrogen, or had I not felt that was the  
2 ventilation thud I heard I would not have left that site.  
3 And I believe that to be true, and I think I would remember  
4 it today.

5 Q That is, your testimony today is not only that  
6 you would remember it but in fact it would have had a  
7 sufficient impact on you so that you would have decided not  
8 to go to the Lieutenant Governor's Office?

9 MS. BERNABEI: Objection. Asked and answered.  
10 He is just summarizing Mr. Miller's testimony.

11 JUDGE SMITH: That does seem to be the case,  
12 but this is very important.

13 MR. BLAKE: Not unimportant.

14 JUDGE SMITH: And --

15 MS. BERNABEI: Mr. Miller answered the question.

16 JUDGE SMITH: Overruled. Do you see a dif-  
17 ference between the two questions?

18 WITNESS MILLER: I think I understand the  
19 question.

20 MR. BLAKE: What I specifically put in here,  
21 what Mr. Miller said was "left the site" and what I  
22 specifically want on the record is he would have given up  
23 going to the Lieutenant Governor's Office.

24 JUDGE SMITH: I did think that that was asked  
25 and answered before.

#11-7-SueT 1

MR. BLAKE: If that's what he meant by it and  
2 that's what he intended when he said "left the site" that's  
3 really all I want to ensure.

4 JUDGE SMITH: I see. Well, that hasn't been  
5 asked and answered if you are in doubt about it.

6 In any event, I think it should be clarified.

7 MS. BERNABEI: I will just note that as a result  
8 of Mr. Blake's representations the witness has now been  
9 flagged as to what the answer should be.

10 I don't think that's appropriate.

11 JUDGE SMITH: You know, I guess I need a summary  
12 here. He said that he would not have left the site --

13 MR. BLAKE: That's right.

14 JUDGE SMITH: -- had these events happened.

15 MR. BLAKE: That's right.

16 JUDGE SMITH: And what you have tried to  
17 establish is he would not have left the site for the  
18 purpose of going to the Lieutenant Governor's Office.

19 MR. BLAKE: That's correct.

20 JUDGE SMITH: And you are suggesting: Well, too  
21 bad, we suggested the answer to the witness.

22 MS. BERNABEI: Right.

23 JUDGE SMITH: Okay. It is your testimony, is  
24 it -- or, what is your testimony with respect to whether  
25 you would have left the site to go to the Lieutenant Governor's

#11-8-SueT

Office?

WITNESS MILLER: In the past, I've been asked why I left the site. And the basis of me leaving was that nothing was going to happen very rapidly at that point in the afternoon. Had something occurred of the nature of an explosion, I would not have left the site because I would not have considered the plant at all to be stable where I could walk away and talk to people by phone or by -- and return.

I left on the basis that nothing was going to happen very rapidly. I've testified to that in the past. Had something happened to upset that conclusion, I wouldn't have cared where they wanted me to go I wouldn't have left.

BY MR. BLAKE: (Continuing)

Q Mr. Miller, prior to March 28th of 1979, had you ever met with the Governor or the Lieutenant Governor of the Commonwealth of Pennsylvania?

A I'm pretty sure, no.

Q Have you ever met with them since?

A I think Lieutenant Governor Scranton toured the site on one of the days following March 28th. That's the only other time I think I saw him.

Q How did you understand -- how did you come to learn that you were going to go to the Lieutenant Governor's Office on March 28th?

#11-9-SueT

1           A       I've been asked that before, and I don't remember  
2 my answer. I believe I was told -- I believe I was told I  
3 was supposed to go and that was related to me that Jack  
4 wanted me to go. But that's going way back in my memory.

5           JUDGE SMITH:     Jack Herbein?

6           WITNESS SMITH:   Jack Herbein.

7           BY MR. BLAKE:    (Continuing)

8           Q       When you recall -- when you were told that you  
9 were going to the Lieutenant Governor's Office, did that --  
10 what significance did that take on in your mind in terms  
11 of what was on your mind at that point in time?

12          MS. BERNABEI:    Objection. Vague. I mean, I  
13 don't think there has been a definition of what was on  
14 Mr. Miller's mind.

15          JUDGE SMITH:    You set up a cross-fire here and  
16 I don't know quite how to handle it. Sometimes you object  
17 for leading, and then if the question is not leading then  
18 it tends to be vague.

19          MS. BERNABEI:    I think there are proper direct  
20 questions, and I think you have to lay a foundation for  
21 them. And I don't think Mr. Blake has done that in this  
22 instance.

23                 I don't think you have to lead a witness. If  
24 you lay a proper foundation, you can then ask a direct  
25 question which leads into the area of inquiry you are

#11-10-SueT 1

entitled to ask. That was my problem with it.

2

JUDGE SMITH: Now I don't remember the question.

3

Would you restate the question, Mr. Blake?

4

MR. BLAKE: I don't know that I can do it

5

perfectly but I will come close I think.

6

BY MR. BLAKE: (Continuing)

7

Q Once you were told that you were going to go to

8

the Lieutenant Governor's Office, what significance did

9

that have in terms of what was on your mind?

10

JUDGE SMITH: I assume that we are speaking of

11

with respect to the conditions in the plant?

12

I don't think it's vague.

13

MS. BERNABEI: I think that's a proper question.

14

I don't know.

15

JUDGE SMITH: Oh, all right.

16

MS. BERNABEI: That wasn't the question.

17

WITNESS MILLER: Even in the slack periods of

18

March 28th I was probably making a decision every ten

19

seconds on something. It was an item that I didn't really

20

want to do. It just was going to take time I didn't have.

21

My reaction to it was negative.

22

BY MR. BLAKE: (Continuing)

23

Q And once it was clear that you were going to go,

24

did it take on some importance in what you were doing at

25

the time?

#11-11-SueT 1

MS. BERNABEI: Objection. I really don't  
understand that question at all.

2

3

BY MR. BLAKE: (Continuing)

4

Q Mr. Miller, did you have to prepare yourself  
to go to the Lieutenant Governor's Office?

5

6

A Yes.

7

Q Did you spend time preparing yourself before  
going to the Lieutenant Governor's Office?

8

9

A Well, I took George's time because I knew I  
didn't have enough time, and I had to take time to do  
something that I didn't consider would help me.

10

11

12

Q Was it on your mind before going? That is, that  
you were going to go and gosh, what did you say? Was this  
on your mind prior to leaving the site, that you were going  
to go and meet with the Lieutenant Governor of the Common-  
wealth of Pennsylvania?

13

14

15

16

17

MS. BERNABEI: Objection. Leading.

18

JUDGE SMITH: Overruled.

19

WITNESS MILLER: Yes.

20

BY MR. BLAKE: (Continuing)

21

Q One of the investigators of the accident, the  
Special Inquiry Group, has determined from Commonwealth  
of Pennsylvania records that you, Mr. Kunder, Mr. Herbein  
arrived at the Lieutenant Governor's Office at 2:30 p.m.  
on March 28th.

22

23

24

25

#11-12-SueT 1

2 Do you have any reason to challenge that  
3 determination?

4 A No.

5 Q Assuming that you arrived at the Lieutenant  
6 Governor's Office at 2:30, in your estimation how long  
7 would it have taken to travel from the TMI North Gate to  
8 the Lieutenant Governor's Office?

9 A My best guess is a half hour.

10 Q In your judgment, how long would it have taken  
11 you to have -- how would you have gotten to the North Gate?

12 A My recollection is -- and I can't be totally sure,  
13 I can be sure of the path I had to take but I'm not sure who  
14 picked me up. I had to go down from the Unit 2 control  
15 room through the passageway, which at that time connected  
16 the units, through Unit 1 out through the process center  
17 at which point I think the car picked me up to drive me to  
18 the North Gate.

19 That's a couple minutes. It's three to five  
20 minutes best that you can do that in, assuming nobody would  
21 stop me.

22 Q Assuming that you arrived at the Lieutenant  
23 Governor's Office at 2:30 and allowing three to five  
24 minutes for exiting the plant, and about thirty minutes  
25 for travelling to the Lieutenant Governor's Office, that  
means you would have to have left the TMI-2 control room

#11-13-SueT

about five minutes or so of two o'clock; is that correct?

2 A Yes, sir.

3 Q Mr. Miller, the pressure spike occurred at  
4 about 1:50 p.m. on March 28th. If you left the control  
5 room several minutes before 2 o'clock to meet the Lieutenant  
6 Governor --

7 MS. BERNABEI: I'm going to object to the  
8 question. He has not, as a hypothetical -- it is not  
9 established as an absolute fact that Mr. Miller left the  
10 control room at a quarter to 2. In fact, the best  
11 evidence from his own memoey is that it was some time  
12 thereafter.

13 MR. BLAKE: Look, doggone it, I stood for  
14 questions where the assumption was, you left at 2:30 after  
15 the witness had explained that was within two hours as  
16 best these fellows could put together in order to allow  
17 the questioning to get on and in order to get down the  
18 road.

19 MS. BERNABEI: It's the form of the question --

20 MR. BLAKE: I have firm evidence in the joint  
21 stipulated agreement based on records at the Lieutenant  
22 Governor's Office that they arrived there at 2:30, and  
23 that's how I have built this time frame.

24 MS. BERNABEI: I want to state, there is  
25 contrary evidence in the record, in the Joint Mailgram

#11-14-SueT 1 stipulation, including Mr. Miller's own recollection and  
2 others at the site. I'm saying that the question should  
3 be in the form of a hypothetical, assuming.

4 JUDGE SMITH: Well, the -- I tend to agree  
5 with you but you have violated that rule so often that  
6 you scarcely have standing to make the objection now.

7 We don't have a lot of patience for running this  
8 data through the witnesses who can add little to the weight  
9 of this evidence. But this is what you have done all day  
10 today, and you have done witness after witness. And this  
11 seems to have become the unshakable pattern of this case.

12 Mr. Blake is doing it now. I don't know what  
13 he is going to accomplish. We are going to have to  
14 probably look at the documents to which all of you allude  
15 and make up our own mind.

16 But running it through the witness, as we  
17 have complained all through this hearing, just doesn't  
18 do an awful lot for us. It doesn't seem to augment his  
19 memory, make him more definite one way or the other. I  
20 recognize all of that.

21 But you have established a pattern more than  
22 any other person in this room.

23 END #11

24 Joe flws

Ace-Federal Reporters, Inc.

25

1 MS. BERNABEI: I am not objecting to a hypothetical  
2 question. What I am saying it should be in that form, and it  
3 was not.

4 JUDGE SMITH: You, yourself, has not used that, and  
5 you have consistently as a matter -- rarely have you done what  
6 you are not objecting to.

7 MS. BERNABEI: I don't think that is true.

8 JUDGE SMITH: Just do it, and get it over with.

9 BY MR. BLAKE: (Continuing)

10 Q Mr. Miller, what would you have been doing, if  
11 you have it in your recollection, immediately prior to leaving  
12 for the lieutenant governor's office?

13 MS. BERNABEI: I am going to object. It is  
14 calling for speculation.

15 MR. BLAKE: If he has any recollection is the  
16 question.

17 JUDGE SMITH: Beg your pardon?

18 MR. BLAKE: If he has any recollection is the  
19 question. How can that be speculation.

20 JUDGE SMITH: All right. What were you doing?

21 MR. BLAKE: Did I say what would you have been?

22 JUDGE SMITH: Yes.

23 WITNESS: The only answer I can come up with is  
24 getting ready to go, which meant assuring somebody was in  
25 charge, understand what was going on, and leaving, and doing

1 that all in a very rapid hurry, because I was late.

BY MR. BLAKE: (Continuing)

2 Q Assuming Mr. Chwastyk had attempted to talk to  
3 you at about this time frame when you were leaving, do you  
4 believe he would have focused on what he was saying to you?

5 A My memory today, and my previous memory, has  
6 been that I was trying to exit the control room around this  
7 time frame and that I knew I was late, and I knew people were  
8 waiting for me, and my last memory is that I was saying goodbye  
9 to Mike Ross, and I -- it would have been hard to entertain  
10 a conversation with me.

11 Because I was awful tied up, and awful stressed,  
12 and on my way out.

13 Q Did the idea that a zirc water reaction had  
14 occurred, producing large quantities of hydrogen, ever occur  
15 to you on March 28th?

16 A No.

17 Q Did anyone else on March 28th convey that idea  
18 to you?

19 A No, they did not. And I think I would remember  
20 that.

21 Q You earlier indicated -- described your experience  
22 with incores in connection with the Navy testing program. Do  
23 you have any experience with the use of incores on commercial  
24 reactors?

25 A To my knowledge, they weren't used for the

1 operation.

2 JUDGE SMITH: If you are satisfied with the  
3 answer -- it was your question.

4 MR. BLAKE: I intended to follow it up, and just  
5 ask again my question.

6 BY MR. BLAKE: (Continuing)

7 Q Did you have any experience at all with the use  
8 of incore thermocouples in a commercial reactor setting?

9 A My only knowledge was that they might have been  
10 used in the initial core testing on a B&W plant somewhere.  
11 They weren't even wired out in Unit 1, and I have no knowledge  
12 of their use in the operation.

13 Q Your knowledge of no use in the operation, does  
14 that mean at Three Mile Island?

15 A That is the limit of my commercial experience.  
16 I guess I should say I had no knowledge of their use, no.

17 Q What were you looking for when you requested of Mr.  
18 Porter incore thermocouple readings on the morning of March 28th?

19 A When I walked into the control room, I had no  
20 temperature indication. For some reason, my memory went  
21 back to where I have said, and I was trying to get a temperature  
22 indication from somewhere. There was no meters on scale.

23 Q And describe for me the subsequent conversation  
24 when Mr. Porter reported back on the results of your question  
25 of him?

1           A     If I go back today, I can only describe what I  
2 read -- I said previously about that conversation, and that  
3 is that he came back, and I think he gave me verbally  
4 four readings; zero, two hundred, four hundred and something  
5 in the high range, like the 2,000 range, and said he considered  
6 them unreliable along with the discussion we went through  
7 earlier, and I never went back and asked myself about them  
8 from that point on.

9           At the same time, there were other instruments  
10 being hooked up to other indications which were reading out,  
11 so I never went back and asked myself about them.

12          Q     How long do you think that conversation or  
13 exchange took place?.

14          A     In terms of seconds -- I think you have to --  
15 maybe I shouldn't add this, but at that same time, the  
16 radiation monitors were going off scale high, and I was  
17 immediately thrust into the general emergency, which now is  
18 a whole new set of procedures, where I have to take mandatory  
19 actions and they are a half an hour to an hour long.

20                So, I walk in. There is nothing on scale.  
21 I can't see any temperature indication. I have a good  
22 idea that comes from my past. I give that idea out, and  
23 it comes back not reliable. In the meantime, everything  
24 else is going. In an attempt -- I just never went back.  
25 I never had a chance to think.

1 Q You mean you never went back to focus on what  
2 Mr. Porter had told you.

3 A I never went back and asked myself what did that  
4 mean?

5 Q Were there any other subsequent conversations  
6 that day that you recall regarding incores?

7 A I don't recall today, and I don't think I ever  
8 recalled any more discussion on March 28th of thermo-  
9 couples which involved Gary Miller. I just never went back  
10 and asked.

11 Q You were asked by Ms. Bernabei about your knowledge  
12 as of the time frame of the TMI accident, of the ECCS criteria.  
13 Did you associate whatever Mr. Porter gave you by way of  
14 information on the incores with the criterion in the ECCS  
15 criteria of 2200 degrees?

16 A No, sir.

17 MR. BLAKE: I have no more questions.

18 BAORD EXAMINATION

19 BY JUDGE LINENBERGER:

20 Q Sir, with respect to the most recent question of  
21 Mr. Blake, to which you answered no with respect to any  
22 association of the few thermocouple readings you have with  
23 the ECCS criterion, I should like to understand in which  
24 context you gave that no answer.

25 Let me just ask you that question. In what

XXX INDEX

1 context are you thinking when you said no -- were you thinking  
2 when you said no to Mr. Blake's question?

3 A (Pause)

4 Q If that question is too vague, I will make it  
5 more specific.

6 A I think you have to remember the thing I have  
7 trouble articulating, and I do it poorly I think, you know,  
8 at four in the morning when this started, Gary Miller called  
9 the plant back, and he was told the plant was shut down with  
10 -- the pressurizer was solid.

11 I never heard of that before, and I was told the  
12 pressurizer instruments were wrong. That was the operators  
13 conclusion. I faced instruments all day that nobody knew who  
14 to believe and what to believe.

15 In that context, when I got that unreliable  
16 thermocouple reading, I never gave any more thought to thermo-  
17 couples. Had somebody said there were five thermocouples  
18 reading 2,000 degrees, I think I would have reacted differently.  
19 But somebody said: You have another bad instrument, Miller.

20 So, I never thought myself beyond that, because  
21 it meant nothing to me. It is unreliable. One more thing I  
22 have to deal with that is unreliable.

23 Q That answers my question, and I appreciate the  
24 explanation. There has been a number of questions and answers  
25 involving you today that has involved or included the clause,

1 'drawing a bubble in the pressurizer.'

2 I should like for you to try to interrogate your  
3 state of knowledge on March 28th and from that state of  
4 knowledge on March 28th tell me today what first was meant  
5 by that phrase as far as you were concerned, and under the  
6 same supposition, go on to say why you considered it of  
7 some importance to do something about getting a bubble in the  
8 pressurizer.

9 Two questions. What does the clause mean to you  
10 in the terms of your knowledge on that day? And why was it  
11 important to achieve a bubble?

12 A Normally, I have experience with more than a  
13 commercial kind of reactor plant. I personally. One of the  
14 things I learned when I came here was that you never ended  
15 up without a bubble in the pressurizer with the plant hot.  
16 You couldn't get there. No way to get there.

17 That is where we were. Let me go on.

18 Q Excuse me. I want to understand what you said  
19 right there. Are you saying that that is something to be  
20 avoided, or are you saying don't worry about it, because there  
21 is no way you can have it happen?

22 A Very -- one of the cautions from the reactor  
23 plant vendor was do not get solid when the reactor coolant  
24 system is hot. That is one of the things I learned. That  
25 comes across to me, because I operated plants other than that.

1           They said no. Now, no way of getting there. No  
2 way of getting there when normal operation. When you drew  
3 a bubble, normally you start out by draining water out of the  
4 pressurizer, turning the heaters on, venting the gas out,  
5 and forming a bubble. Doing it that way you have nothing  
6 but solid water in the system, and you know that the only  
7 interface with steam is in the pressurizer.

8           When I walked in at seven in the morning, at 7:30  
9 we tried to start pumps. We knew when we tried to start them  
10 that they weren't running with water. 100 amps. They  
11 normally take 600 amps. So I knew I had steam bubbles  
12 throughout the plant.

13           So, drawing a bubble would have been helpful  
14 because it would have shoved more water back into the loops,  
15 but it wouldn't have at all put us back into normal condition.  
16 I had no way of venting. There was only one vent valve in the  
17 whole plant, and it is on top of the pressurizer.

18           It is the only valve I had control of. So, drawing  
19 a bubble would have been helpful, but like I said earlier, it  
20 would not have gotten me out of where I was. We had no  
21 pressurizer heaters. The let down valve didn't work.

22           All those kind of things -- a bubble would have  
23 been helpful, but wouldn't have put the plant in its final  
24 state. It would have just been one more way of shoving water  
25 out of someplace into the core, maybe.

1 But it was preferred to not having it. Because  
2 you could maybe start to gain control of the plant that way,  
3 because you do want to end up in that state.

4 But you got there backwards, so to speak. Do you  
5 understand me? You started out where you would have ended  
6 up.

7 Q I believe you answered affirmatively to a question  
8 about whether the plant was being operated on March 28th while  
9 you were there in conditions that were, and I think the  
10 phrase was, 'outside of emergency procedures.'

11 I believe you agreed that, yes, indeed, that was  
12 the case. Have I recalled this correctly?

13 A Yes.

14 Q Now, sir, I don't really understand what you  
15 had in mind when you answered yes about the meaning of  
16 emergency procedures. I should like as best you can recall  
17 your thinking that day, not what you have learned since then,  
18 tell me what was meant by operating outside of emergency  
19 procedures.

20 A My state of knowledge on how you operate is what  
21 you have got to start with. I was licensed in 1976. I wasn't  
22 licensed at the time, but I had knowledge of how you used  
23 emergency procedures. Normally you got ten to fifteen  
24 emergency procedures in those days.

25 You expected an operator to commit to memory all,

1 for the most part, the symptoms and the immediate actions  
2 so he could be taking those actions immediately.

3 He had to remember more than one procedure though.  
4 He couldn't just use one indication and one procedure. When  
5 I arrived in the control room, I was not given a choice of  
6 being inside a procedure. I was already outside the limits  
7 of the now -- I shouldn't say now -- I was outside the  
8 band. I had no indication in some areas. That wasn't addressed  
9 in procedures.

10 Now, administratively at that time we had trained  
11 reactor operators by our administrative guidance that they  
12 didn't just blindly follow symptoms and actions. That they  
13 were still held accountable for decisions.

14 And my statement is meant to imply that I was  
15 outside the emergency procedures by no choice, and therefore,  
16 I had to use them as I judged necessary but to use judgment  
17 in addition to that, and there was no procedure for where  
18 I was.

19 That is not my choice.

End 12.  
MS fols.

Sim 13-1

Q Nine. That explains to me what you meant.

Just one other question. Reference had been made in prior questioning today about the 2200 degree of 2300 degree so-called ECCS criterion. Can you reconstruct, not from what you have learned since the accident, but from what you remember about your state of knowledge the day of the accident what that criterion meant to you, and at this point I care not whether it was specifically 22 or 23 hundred, but just whichever one it was and what did it mean to you that day.

A I feel like I could have done better at that a couple of years ago. I sometimes feel inadequate in that I have been away from this stuff. My best recollection today of what that would have meant to me is that the FSAR had an accident analysis where you postulated various accidents, and my own recollection today would have been that in the range of credible accidents and with the safety systems that we had that you would not have exceeded that number.

In other words, if you would have had one of those accidents like a loss-of-coolant accident and high pressure injection had come on as assumed, even in the worse case where you had a failure where only one pump came on and one diesel came on, you would not exceed that interim criteria.

Q Well, let me understand that last point, you would not exceed. Is that said in the context that that was a

Sim 13-2

1 prohibition with respect to a condition you should stay  
2 away from or is that said in the context that given the  
3 proper functioning of safeguard and protection devices that  
4 temperature would not have been achieved?

5 A I mean to say the last, that the temperature  
6 would not have been achieved.

7 JUDGE LINENBERGER: Fine. Thank you.

8 Those are all the questions I have.

9 BOARD EXAMINATION

10 BY JUDGE WOLFE:

11 Q Do you have before you, Mr. Miller, the index  
12 of Joint Mailgram Exhibits? Do you have that before you?

13 A I don't believe so.

14 Q Well, do you particularly know what Joint  
15 Mailgram Exxhibit Item No. 10 is?

16 A Yes, sir.

17 Q That is a statement by G. Miller, et al., and  
18 I understand that -- well, would you describe what that  
19 statement is and why it was prepared again?

20 A I will tell you exactly as I best recall. In  
21 the days after the accident, and I mean after and into the  
22 next week, we were beginning to be interviewed by a myriad  
23 of people, we being the people that work for me. And I  
24 realized how little I remembered of everything that happened.

25 I assembled the think tank, the command group or

INDEX

Sim 13-3

1 the senior people, whatever you call them, and I believe  
2 it was a Saturday, April 14th, and I could be wrong, and I  
3 sat down for a period of hours and we taped it.

4 I initially started out trying to write this  
5 report while we talked, but it just didn't work out with  
6 six people in the room. So I taped it and then I went off  
7 alone and listened to the tape, and it was the combined  
8 recollection of everybody and I prepared that knowing that  
9 I was going to have to describe that day, and I used the  
10 word "I" in here a lot of times and I guess had I known where  
11 I was going to be today I would have been a lot carefuller  
12 in preparing this from a legal standpoint I guess.

13 But I prepared it as a statement I could use in  
14 any of the investigations that I was beginning to be pulled  
15 into, and they were many.

16 Q The date of this conference with members of  
17 your think tank, the members that were there on March 28th,  
18 what was the date of that conference?

19 A April 14th, but that is out of my memory. I  
20 think that is close.

21 Q Have you looked at that document recently?

22 A I have not looked at the document or listened to  
23 the tape recently.

24 Q To your recollection, and when I ask you these  
25 questions, it means that I have not reviewed that document,

Sim 13-4

1 but you can be assured that before a decision is rendered in  
2 this case that we will read all exhibits, but to the best  
3 of your recollection is there some part of that that relates  
4 to what is now in issue before this Board, namely that which  
5 deals with the so-called Dieckamp mailgram issue? Do you  
6 know what that issue is?

7 A My understanding of that issue is the understanding  
8 of the presence of hydrogen and the burn the day of the  
9 accident. That is my understanding as a layman, the potential  
10 of that.

11 Q And whether the initiation of the containment spray,  
12 whether the pressure spike and also whether the thermocouples,  
13 whether anyone interpreted these three matters to mean that  
14 the reactor core had been uncovered.

15 Now with those three matters in mind, were any  
16 of these three matters discussed at any length in this  
17 conference on April 14th, to your recollection?

18 A The conference you refer to is a meeting with  
19 Gary Miller and his senior people of which there is a tape  
20 and of which there are various transcriptions of varying  
21 accuracies because you have six people in the room on a  
22 cheap tape recorder. I have always gone back and listened  
23 to the tape because I know the people and I can understand  
24 it sometimes better than the transcript.

25 In reference to you question, and I want to make

Sim 13-5

1 sure we are talking about the right document. That is not  
2 this document here. That is what this was arrived from,  
3 from that tape.

4 Q That is the composite?

5 A That is Miller's composite from the tape, and  
6 they all looked at it. Everybody on the room was sent this  
7 and any comments that were sent back were put in, but there  
8 were none.

9 Q I see. All right. Go ahead.

10 A Which would have meant they could have disagreed  
11 with my words and I would have changed them, or I would have  
12 said so and so disagrees. And I have not looked or listened  
13 to this.

14 The thermocouple discussion I believe is in there,  
15 in other words, my version of it. I don't believe Mr. Porter  
16 was in that meeting that day. I don't really recall, but I  
17 don't think so. So my statement of what those thermocouples  
18 meant is on that tape in that each one of us went through  
19 the day. We broke it into time periods and we each discussed  
20 what we thought happened in that time period, see, and then  
21 I attempted to go away and write this up, which is broken  
22 the same way.

23 There is discussion of the thermocouple. I  
24 believe there is a discussion relative to the thud with  
25 Mr. Ross and myself. I personally have thought about this

Sim 13-6

1 over the noon hour. I think it is on that tape that I heard  
2 a noise and I said what the "H" is this and I think there is  
3 discussion on there that Mike told me I was getting old and  
4 not to get nervous and somebody told me it was the ventilation  
5 damper and I accepted that. I think that is on that tape.  
6 I really can't be totally sure, but I think it is.

7 I don't remember if the presence of the building  
8 pressure spike is on that tape. It probably is, but it may  
9 not be because it didn't occur that day. I have not listened  
10 to the tape.

11 The tape is a fairly free wheeling discussion and  
12 has a lot of profanity in it. It was the first time that  
13 group had had a minute to sit and look at each other in a calm  
14 room since March 28th and it has some humor in it strictly  
15 because we had all been under such tremendous pressure and  
16 hours. There are points on the tape that don't relate to  
17 anything other than just six people having a time to sit  
18 down for the first time in a couple of weeks after a very  
19 hard situation.

20 Q Well, can you describe to me what you did do  
21 in writing up the composite which is now Item 10, and if  
22 there was a strong division between two individuals on what  
23 happened on March 28th or perhaps there were several divisions  
24 between several individuals as to an incident which occurred  
25 on March 28th. In writing up your composite how were these

Sim 13-7

1 divisions, conflicts or differences handled?

2 A I think you will find there weren't very many  
3 of them and the reason is that most of the guys were  
4 discussing their areas which didn't conflict with the next  
5 guy's area for the most part.

6 For instance, on the time I left the site, I  
7 think you would find the tape has five of us sitting there  
8 or six of us trying -- and one guy says five o'clock, one  
9 guy says 2, one guy says 3 and then I think you will find  
10 somebody, I think it was me, said I got back and it was  
11 still daylight. I must have been there a certain amount of  
12 time and it must have taken me a certain amount of time and  
13 we kind of arrived at 2:30.

14 I don't believe that there are differences on  
15 the tape that aren't in my transcription, and I tried to  
16 ensure that in the early days by sending this document out  
17 to the same people and saying please object to this in writing  
18 if you do, and I don't remember any comments. And I would  
19 have been happy to put in here Mr. so and so feels this is  
20 the way that happened. I don't remember the need to do that,  
21 and I am going way back, but I would have done that. That  
22 wouldn't have bothered me because we did have areas where  
23 we just honestly couldn't pin it.

24 Q I am trying to get at through your assistance  
25 something for the Board to get a handle upon, and that is

Sim 13-8

1 putting aside for now your testimony of today -- well, I  
2 will stay on that track. Putting aside your testimony of  
3 today, can you point the Board to any document or documents  
4 which you think are the most accurate to your mind that the  
5 Board should rely upon in order to determine the three matters  
6 at issue or subissues in the Dieckamp mailgram issue, and  
7 I would add I am sure you are not aware of all of the documents  
8 and depositions and interviews, et cetera, which are now  
9 before the Board, but do any documents come to your mind  
10 that you think are accurate based upon your present  
11 recollection of facts or your acceptance of those documents  
12 in the past as having been accurate?

13 A Two or three years ago I might have done a  
14 better job at answering that, but I will tell you, I think  
15 the April 14th tape, even though I am not necessarily proud  
16 of it because it can be -- you know, it was six people that  
17 were under a situation that was maybe the hardest day of all  
18 of our lives and it was the first time we had a chance to  
19 joke and we all knew each other. So there is a lot of  
20 levity on that tape that I guess I am not proud of to be  
21 public about. But I think that tape is candid, open and  
22 honest. There are no holds barred on that tape.

23 In other words, there was no reason to withhold  
24 anything. People could have said whatever they thought  
25 happened and it would not have been constrained.

Sim 13-9

1 Now the only other piece of documentation that  
2 I know of other than the early interviews, you know, they  
3 were done very informally and I am not aware of all of them  
4 with people in trailers and stuff, but the only other  
5 document that I know of, and I don't know whether it addresses  
6 any of these issues, was I have another tape of May 25th  
7 after we had been to one of these hearings, but I don't  
8 remember the subjects of that. But that is also a tape that  
9 is available in evidence at other proceedings. That is the  
10 only other suggestion I could make.

11 I go back to that tape myself, or I used to,  
12 just to absolutely sure of my own recollection.

13 Q Well, does this composite statement, Item 10,  
14 does that identify all the people that were at the conference  
15 on April 14th, 1979?

16 A On page 1 I say who participated in this forum.  
17 They were all the principal parties that were in charge,  
18 the senior people.

19 For instance, there is only one shift supervisor  
20 there. He was the individual who was there in the morning  
21 that I relieved Mr. Zewe. There are no other shift  
22 supervisors. So that is everybody I considered to be the  
23 parties to allow me to develop those day's events as  
24 accurately as I could. There is no one else. I could have  
25 had the whole operational crew there, but it wouldn't have

Sim 13-101

productive. So everybody that is necessary that was in a key role that day and the shift supervisor who was on duty, the B&W rep also was a part of that tape, those were the people that I depended on. Every one of them were there for that tape and every one of them got an opportunity to comment on the document.

Q To your knowledge, over time have any of the individuals who were at that conference on April 14, 1979 departed from or changed their views from that which either appears in the composite of the April 14th meeting or can be heard on the tape of that conference?

A No one has ever come to me and told me my document was inaccurate and no one has ever come back to me that what I said in that taped interview shouldn't be considered as valid.

Q But my question is though are you aware that since that conference and the taping that any individuals present at that conference have over time taken conflicting positions with that which they discussed or took a position on at that conference of April 14th?

A I am not aware of any, no.

(Pause.)

end Sim  
S fols

#14-1-SueT 1 JUDGE SMITH: Let's take our ten minute after-  
2 noon break.

3 (Whereupon, the hearing is recessed at 3:10  
4 o'clock p.m., to reconvene at 3:29 o'clock p.m.,  
5 this same day.)

6 JUDGE WOLFE: I would note to the parties that  
7 during the recess, the other members of the Board brought  
8 it to mind, and they said in substance that the ruling of  
9 this Board has been that with respect to whatever exhibits  
10 have been admitted into evidence that the Board, at its  
11 discretion, may read all of the exhibits but that we don't  
12 feel that we are bound to. And in all probability, the  
13 Board will not read all exhibits except as we have pre-  
14 viously ruled, that we will review those exhibits at the  
15 time of making our decision which have been referenced and  
16 referred to during the course of the hearing, either on  
17 direct or cross examination as well as those exhibits to  
18 which reference is made by the parties in their proposed  
19 findings.

20 So, to that extent when I said I would, the  
21 Board would, review all exhibits I guess I was speaking out  
22 of an excess of enthusiasm. But, as I say, we are only  
23 bound under those conditions as existed and set forth in  
24 our prior ruling.

25 With that aside, one other question, Mr. Miller.

#14-2-SueT 1

## BOARD EXAMINATION

2

BY JUDGE WOLFE:

INDEXXXXXX 3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Q During the taping of this conference of April 14th, 1979 when a person -- are the individuals identified at any time by their identifying themselves, this is Joe Doe speaking or this is Gary Miller speaking? Or, is it just a series of different voices without identification?

A I think I recall that I introduced who was there. From that point on, you would need help to listen to that tape.

Q And you say help both because in order to identify the people, the person who might be speaking, and also to clarify something that is illegible on the tape?

Is that what you say?

A I make that statement because in years past when I was presented transcripts of that interview, I always went back to the tape to insure the accuracy of the transcript, and I found errors. And I think more from the standpoint of identifying who is speaking than from clarifying it. Although there is times when there is more than one guy speaking.

And there are probably times when it isn't clear. And I just, you know, today I'm not remembering those.

#14-3-SueT 1

2 But, principally I think to identify speakers,  
3 somebody that would be familiar with the voices. Because  
4 some of the voices can be pretty similar unless you really  
5 know them.

6 Q How long did this conference last on April  
7 14th, Mr. Miller? Any recollection on that?

8 A I think the tapes about an hour long, but it  
9 could be two hours. I could be ambitious there in saying  
10 an hour. But it's in that range.

11 JUDGE WOLFE: All right.

12 JUDGE SMITH: Ms. Bernabei.

13 FURTHER CROSS EXAMINATION

14 BY MS. BERNABEI:

15 Q Mr. Miller, regarding either the transcription  
16 of that tape, which you were discussing with Judge Wolfe,  
17 or Joint Mailgram Exhibit 10, did you provide either of  
18 those documents to Mr. Dieckamp at or near the time it  
19 was prepared?

20 A I don't believe so. I don't even think he  
21 had knowledge of it. But that's going way back.

22 Q Okay. I would like you to refer a paragraph  
23 from Mr. Dieckamp's prefiled testimony which has been  
24 accepted in this proceeding and ask if you can identify  
25 the reference that Mr. Dieckamp makes, specifically Page 11,  
the first full paragraph on that page.

#14-4-SueT

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

(Ms. Bernabei is showing the witness a document.)

Perhaps for the Board I could read it into the record.

"During the third week in April I drew upon this awareness in developing learnings, including the G. Miller report based on a taped conversation and a reconstruction of the day of the accident by a number of key TMI personnel to assemble testimony for presentation to the Nuclear Regulations Subcommittee on Environment and Public Work, Hart Committee."

Okay. Mr. Miller, can you identify the reconstruction that Mr. Dieckamp is referring to in that paragraph of his testimony?

A I believe there may be an earlier version of this statement of G. P. Miller where I transmitted it. And it's not in here. I may have referenced that it was derived. See, if you look at the -- I think it's this document here which is Exhibit Number 10, and it starts out by saying, "Transcript was made by those personnel who were present. Persons participating in this forum are..."

In other words, I think he is referring to what he saw of me. I don't think he had the April 14th document -- there was no document, there was a tape. But

#14-5-SueT 1

2 I don't honestly remember today. But I don't think he had  
3 that.

4 But I think I said that I made that from a  
5 meeting of the group. That's why that word "transcript"  
6 is in my statement.

7 Q Do you know whether or not there was any draft  
8 of Exhibit 10 to which Mr. Dieckamp may have had access?

9 A I think there was.

10 Q Okay. And apparently Mr. Dieckamp is referring  
11 to a draft of Exhibit 10 in his testimony on Page 11?

12 A I'm speculating that. Yes.

13 Q Mr. Miller, when you did your statement which  
14 is now Joint Mailgram Exhibit 10, did you at that time  
15 know that Mr. Dieckamp was going to be using that to pre-  
16 pare Congressional testimony of his own?

17 A I prepared it, not with that in mind, to my  
18 knowledge. I prepared it because I knew I needed to have  
19 something put together. I don't think I did it for anybody.

20 I think I did it at my own initiation.

21 Q Do you know whether you received any instructions  
22 or directions regarding preparation of this statement?

23 A I may have been asked to prepare a statement,  
24 but I had already, to my knowledge, made the tape and was  
25 preparing a statement on my own for the many forums.

Q In response to a question from Ms. Finkelstein,

#14-6-SueT 1

2 I believe you drew a distinction -- and I may have your  
3 words somewhat incorrect -- between a consideration of  
4 absolute assurance of core coverage and reasons to believe  
5 the core was in fact uncovered; is that correct?

6 You drew some kind of distinction between those  
7 two things?

8 A I drew a distinction in my mind between talking  
9 about core coverage and assurance of it, as opposed to  
10 talking about uncoverage.

11 Q Okay. Do you remember testifying previously  
12 that, in fact, you were not or we -- implying the people  
13 in the control room and the think tank -- were not totally  
14 convinced the core was covered on the morning of March 28th?

15 A I don't recall, but it's possible I could have  
16 said that.

17 Q Would you refer -- I refer you to your May 7,  
18 1979 testimony, which is not yet a Mailgram Exhibit, Page  
19 60. Beginning on Page 59, on Line 22, it says, and  
20 continuing on Page 60, "We felt between those things we  
21 were getting something. We weren't totally convinced the  
22 core was covered but we didn't know what instrument to  
23 look at to tell us that."

24 At that point, you were talking about the  
25 think tank group, were you not, Mr. Miller?

26 A Yes.

#14-7-SueT 1

2 Q And you were saying that you, the think tank  
3 group, were not really convinced the core was covered at  
4 that point, in the morning of March 28th?

5 A Yes. At this same time I discussed the other  
6 things I did today, which is the fact that the pumps  
7 started without any water and we knew that there was steam  
8 in the system.

9 I think it's important to draw a distinction  
10 that uncoverage relative to draining the core and uncoverage  
11 to some degree was obvious to us from looking at the ele-  
12 vation drawings, that there was steam where there should  
13 be water. But when I make the distinction I never thought  
14 about an uncovered core.

15 I might have thought about an uncovered reactor  
16 vessel head; I might have thought about things like that,  
17 but I never thought about a drained core.

18 Q Okay. You talked, did you not, in the think  
19 tank and on a consistent basis about not knowing if the  
20 water was in fact going on the core?

21 Is that correct, whether or not there was a  
22 bypassing of the core?

23 A I think we talked in previous testimony I've  
24 been asked, I think we talked about there being possibilities  
25 of being bypass pass.

Q Okay. And if there were bypassing, that would

#14-8-SueT

mean that the core was uncovered; is that correct?

A It might mean that. It might mean that. Yes.

Q Therefore, in terms of that discussion there was a discussion about the core possibly being uncovered as a result of water bypassing the core?

A The potential of core uncoverage, yes.

Q I believe in response to one of Judge Linenberger's questions you stated that it was your understanding that a lot of your instruments -- that you didn't believe a lot of the instruments, a lot of instrument readings you were reading, especially given the fact that many of them were off-scale high.

Is that a fair summary of how you evaluated the situation on March 28th?

A My memory of that response was that during the day, I had a lot of instruments that were off their scale and a lot of people telling me which ones they believed to be reliable. And I had to sort of choose what to believe.

But I believed things like pressurizer level. That's how I got to the site that morning. Even though other people might not have.

I'm just trying to say that there wasn't a straightforward set of instruments to look at and say: These are the ones to look at, Gary.

#14-9-SueT 1

Q I understand. What I'm saying is --

2

A I don't think you can isolate on an instrument.

3

You have got to look at the whole picture I was looking  
at.

4

5

Q And it's fair to say a cautious, conservative

6

operator would in fact believe the instruments. That

7

would be his or her first instinct.

8

A Yes. And I'm a cautious operator.

9

Q Yes. And, in fact, in the morning, the morning

10

before you got in the plant, you believed the instruments

11

and that's why you went in the plant; is that fair to say,

12

Mr. Miller?

13

A It's fair to say that after my inquiry on the

14

phone calls between 4 and 6 that I believed I needed to go

15

to the site because I didn't have a full understanding of

16

what was going on. That's what is fair to believe.

17

Q And isn't it -- it's fair to say that you be-

18

lieved the instruments even though there was an indication

19

that they might, the indications you might be getting were

20

faulty, specifically about the pressurizer level and the

21

pressure?

22

And you chose to believe the indicators and go

23

into the plant?

24

A No. It's fair to say that I don't know that I

25

can recall that. It's fair to say that after the phone

#14-10-SueT 1 calls and the questions we asked and the answers we got,  
2 there wasn't a quick way to reduce where we were. In  
3 other words, we asked questions and got answers that didn't  
4 make sense with the instrumentation.

5 And the only way to go get a handle on that was  
6 to go look at it, was my view. And Jack wanted me to go  
7 look at it.

8 Q Okay. And as a cautious, conservative operator,  
9 what you did is you first believed your instruments and  
10 went in?

11 Is that right?

12 A I went in because I didn't fully understand  
13 the situation, and I didn't think the people that were  
14 talking to me did. That's why I went in.

15 JUDGE SMITH: I don't think this line is worth  
16 very many more questions.

17 MS. BERNABEI: Well, I just have very --

18 BY MS. BERNABEI: (Continuing)

19 Q Didn't you state at a prior time in your  
20 Joint Mailgram Exhibit 10, your statement that in fact  
21 you went in because you decided to believe the instruments  
22 and go in? That that was the cautious thing to do?

23 A I think in my statement made with Exhibit 10,  
24 I said I went in because we concluded that it was neces-  
25 sary for me to go in and fully understand the situation.

#14-11-SueT 1

2 That's based on the instruments and other  
3 things.

4 JUDGE SMITH: Would there be a time in  
5 emergency situations such as that where conservatism would  
6 lead one to assume instruments were accurate and at other  
7 times lead one to doubt the accuracy of instruments?

8 (No reply.)

9 Do you understand the question?

10 WITNESS MILLER: I don't think so.

11 JUDGE SMITH: All right. Would conservatism,  
12 under circumstances such as the accident, lead under certain  
13 circumstances a person to believe instruments sometimes and  
14 other times not accept the validity of instruments?

15 WITNESS MILLER: That's true.

16 JUDGE SMITH: I mean if the instruments tell  
17 you it's time to come down to the plant, that's conservative?

18 WITNESS MILLER: Yes.

19 JUDGE SMITH: If the instruments tell you some-  
20 thing that might lead you away from a conservative action,  
21 then it's not conservative to follow them, is it, if you  
22 doubt them?

23 WITNESS MILLER: That's right.

24 BY MS. BERNABEI: (Continuing)

25 Q But would it be fair to say, Mr. Miller, as  
a rule of thumb, a conservative operator believes his

#14-12-SueT 1

instruments before he attempts to attribute the indication  
to some anamoly or some malfunction?

A It's fair to say he is taught to believe his  
instruments.

It's also fair to say that when you have got  
an instrument off scale high you don't necessarily know  
what you have. It isn't like you've got an indicator that  
is telling you something that is a little bit wary to you.

It's not on scale. So that could indicate --  
that's one of the principal ways instruments fail, high  
or low.

So, you know, when you are all the way on the  
peg, high or low, you are more suspect of the instrument  
than you are if you are just reading higher than normal.  
And that's in my background.

END #14  
Joe flws

1 Q Would it be fair to say that when the operator  
2 saw the pressure spike reach 28 to 30 psi, the conservative  
3 instinct of a good operator would be to say that spike is  
4 probably real, and not dismiss it?

5 A That may be fair to say, but it is also fair to  
6 say that you would expect to see building pressure come up  
7 and stay up. When an instrument spikes, you are most -- you  
8 are most suspect to say maybe that was an interference. An  
9 electrical noise.

10 An operator could conclude either way is what I am  
11 trying to get at, depending on what he thought.

12 Q I would like to refer you to Joint Mailgram  
13 Exhibit 10, page 2. It is -- actually page 6 of the exhibit.  
14 Has page 2 at the top. Under the 6:05 to 6:30 entry, the  
15 third sentence says, does it not: Following some discussion  
16 of the conditions, it was agreed we must believe our  
17 instruments?

18 And it was also noticed by the plant, and then  
19 it continues. Was the decision made to believe the instruments  
20 in that early morning period prior to your going into TMI?

21 A As opposed to not believing from a phone, yes.

22 Q Are you familiar with a special inquiry group  
23 study done in response to certain questions posed by  
24 Congressman Udall?

25 A I am familiar there was a study done. I haven't

1 reviewed it recently.

2 Q And that led, if you know, to a March 4, 1980  
3 so-called Frampton Memo, that is a memorandum to then Chairman  
4 of the NRC John O'Hearn from Mr. Rogovin and Mr. Frampton?

5 A I don't have a very good familiarity with that  
6 today, but I probably did at one time. I don't know what it  
7 is today.

8 Q Well, one of the questions examined, if you  
9 remember, was whether or not you, Gary Miller, was informed  
10 on March 28th of the pressure spike, is that correct?

11 A I believe that was examined. I don't have much  
12 recollection of what the conclusions were.

13 Q You don't remember the conclusion today as to  
14 whether or not the evidence indicated you were informed or  
15 were not informed?

16 A I don't remember it as concluding I was informed.

17 Q Do you recall any conclusion in that regard?

18 A Not in terms of specifics. I think I would  
19 remember if it concluded I was probably informed. I just  
20 think I would recall that. I don't think it concluded that.

21 That is not something I reviewed for today.

22 Q I would like you to refer now to Joint Mailgram  
23 Exhibit 107. Starting at page 46 -- excuse me, starting at  
24 page 47, and focusing on next to the last paragraph on page  
25 48.

1 A Do I have that?

2 Q No. We are going to get it for you. Now,  
3 referring you for a moment to page 47, and it indicates  
4 Question 6, Set 1, asks: Who is correct about whether Miller  
5 was informed of the pressure spike on March 28th, is that  
6 correct?

7 A Yes.

8 Q I would like you to review for a few moments the  
9 section which follows.

10 MR. BLAKE: While the witness is reading, if I  
11 might inquire the purpose of this line; are we going to wind  
12 up trying to refresh Mr. Miller's testimony, or asking if  
13 he is going to change his mind -- why are we spending time  
14 having him read now the special inquiry group report?

15 MS. BERNABEI: It is not the report. This is the  
16 Frampton memorandum which does make a finding contrary to Mr.  
17 Miller's testimony about the likelihood of his having been  
18 informed.

19 MR. BLAKE: Assuming that is the case, what are  
20 we doing?

21 MS. BERNABEI: I think it is relevant to whether  
22 Mr. Miller was informed.

23 MR. BLAKE: I am not going to argue relevance with  
24 you. Why are we spending time doing it on the follow-up here.

25 MS. BERNABEI: I guess I don't understand.

1 JUDGE SMITH: It is the same discussion that  
2 you and I had earlier. We understand relevance. We don't  
3 understand purpose.

4 What are you doing? Are you refreshing his  
5 memory? Are you seeking to have him change his mind? Or are  
6 you trying to run evidence through the witness?

7 MS. BERNABEI: I am seeking to see if he could  
8 change his opinion, which he stated several times he is almost  
9 certain he was not informed of the pressure spike.

10 JUDGE SMITH: Also I was inquiring is this follow-  
11 on? To what is this follow-on?

12 MS. BERNABEI: To Mr. Blake's questions. Mr.  
13 Blake asked several questions, if you had been aware of the  
14 pressure spike and explosion, would you have left, are you  
15 certain, did you have a discussion, are you certain you  
16 didn't have a discussion? There were many, many questions.

17 JUDGE SMITH: Okay, but there were also many  
18 questions on your original cross examination about him being  
19 informed of it, and it just seems like this would have been  
20 a natural time to have brought that up.

21 MS. BERNABEI: The Frampton memorandum is a  
22 summary of many of the interviews taken up to the time of the  
23 memoranda.

24 BY MS. BERNABEI: (Continuing)

25 Q Mr. Miller, Mr. Frampton and Mr. Rogovin do

1 reach a conclusion, do they not, on page 48 as to whether  
2 it is more probable or not that you learned of the pressure  
3 spike on March 28th?

4 JUDGE SMITH: If it is, say it?

5 WITNESS: I don't believe it is.

6 BY MS. BERNABEI: (Continuing)

7 Q Okay. Let me read this and ask you: In sum, the  
8 testimony is quite divided and makes it impossible to  
9 conclude with any certainty what, in fact, happened. Based  
10 on the weight of the testimony, however, it appears it is  
11 more probably that Miller was told about, or at least had  
12 reason to be aware, of the increase in building pressure.

13 From the testimony, however, it is impossible  
14 to determine whether Miller probably learned of the increase  
15 to 4 psig or to 20 psig.

16 That does not in your mind indicate --

17 JUDGE SMITH: I think he was perfectly right in  
18 his answer. I think that you have -- well.

19 MS. BERNABEI: I think I am entitled to ask the  
20 witness.

21 BY MS. BERNABEI: (Continuing)

22 Q Your testimony is this does not indicate a conclusion  
23 it is more probably than not that you knew of the pressure spike  
24 on March 28th?

25 A It doesn't say that to me.

1           Q     It is fair to say it did conclude it is more  
2 probably than not you were aware of an increase in pressure  
3 in the reactor building?

4           JUDGE SMITH: We have tried to get his character-  
5 ization of what we can read. It is so unlikely that this  
6 information will change his opinion that I don't think it is  
7 worth all the time you spend at it.

8           The characterization you made -- you selected part  
9 of it out of the whole that suited your viewpoint. Let us  
10 read it. You cited for the record. Let us read and decide.

11          MS. BERNABEI: I hope you do read it. We would  
12 urge you to read it,

13          JUDGE SMITH: It just doesn't make any sense to  
14 try to pound this information through a witness.

15          MS. BERNABEI: This is the man who the testimony  
16 is about.

17          JUDGE SMITH: I know who the man is. It still does  
18 not make sense to try to pound somebody else's conclusions  
19 through him. I make that point, you write a note, you never  
20 seem to address it. I don't even know to this point whether  
21 you even understand what I am saying.

22          MS. BERNABEI: Yes, I do, Judge Smith. We have  
23 been denied the right to call many witnesses here.

24          JUDGE SMITH: Go to the point that I am making.  
25 You digress. Now go to the point I am making, and don't

1 interrupt me. What value is there for you to be  
2 running the testimony of others through these witnesses? You  
3 say repeatedly that you are trying to refresh their memory,  
4 and you are trying to get them to change their mind. They  
5 never do. But you do it anyway.

6 We allow you to do it. The point is, it should  
7 be help in limits, and I am saying you overdo it, and it  
8 takes too long, and it is never successful, and I perceive  
9 that the real reason for doing it is not to get the witness  
10 to refresh his memory, or to change his mind, but to pound  
11 home the other evidence.

12 That is what you are really trying to do.

13 MS. BERNABEI: Judge Smith, we asked to call Mike  
14 Ross, we asked to call Marshall, we asked to call a number  
15 of witnesses. We were denied the opportunity.

16 The only way we can address this evidence and the  
17 evidence is as Mr. Frampton found in his memorandum, it is  
18 more probably than not that Gary Miller knew about the  
19 pressure spike --

20 JUDGE SMITH: Then you concede then your purpose  
21 is not to refresh the witness' memory, --

22 MS. BERNABEI: If you will let me.

23 JUDGE SMITH: I am sorry. I did interrupt.

24 MS. BERNABEI: I will start over again.

25 We asked to call witnesses to address the point did Gary Miller

1 know about the pressure spike on March 28th, which I think  
2 would be evidence tending to lead one to infer that he not only  
3 knew about the predssure spike, but understood its  
4 significance.

5 We were denied the opportunity to call those  
6 witnesses. I think under the circumstance -- and we were also  
7 given a ruling by the Board that unless we draw attention or  
8 otherwise notify the Board of other witnesses testimony in  
9 stipulated Joint Mailgrams which were admitted into evidence  
10 by stipulation of the parties, you would not consider them.

11 Given the fact that we were denied the right  
12 to call witnesses, and we were denied the right to reference  
13 or rely on in our findings on evidence that I consider in  
14 evidence before the Board, we have no choice but to bring  
15 it to the Board's attention.

16 Also state that allowing the licensee, allowing  
17 witnesses licensee wants, and denying us the right, we have  
18 no opportunity to address the evidence in the record which  
19 we think as the Frampton memo points out, indicates Gary  
20 Miller knew about the pressure spike on March 28th. We  
21 have no opportunity in this hearing to address this central  
22 point other than through Mr. Miller, and that is what we are  
23 attempting to do, and we think we have the right to see if it  
24 would change his mind, change his recollection, change his  
25 opinion, given the bulk of evidence in the record that, in

1 fact, he did know.

2 And since we are being denied the right to bring  
3 witnesses here to do it this is the only way we can address  
4 that point.

5 JUDGE SMITH: What is the relationship between  
6 you being denied the right to bring witnesses, and the purpose  
7 of asking this witnesses these questions? It seems to me that  
8 you have conceded that you have two purposes; One is to get  
9 him to change his testimony, and the other is to act as a  
10 substitute for the witnesses we did not allow you to call.

11 MS. BERNABEI: I didn't say that.

12 JUDGE SMITH: Well, I don't understand. But I  
13 conclude from your remarks that I don't believe as of this  
14 moment you understand what the Board has been saying about  
15 the utility of jamming other people's testimony through a  
16 witness who knows nothing about the testimony. And --

17 MS. BERNABEI: That is not what we are trying to  
18 do. I think that is a mischaracterization. What we are  
19 trying to do is point out to this witness the many statement  
20 of other individuals who we do not have the opportunity to  
21 present before the Board, and ask --

22 JUDGE SMITH: Is this witness going to change his  
23 mind because you did not have an opportunity? That is the  
24 point.

25 Because you did not have an opportunity does not

1 enter into this witnesses thinking.

2 MS. BERNABEI: I would just like to note for the  
3 Board, this hearing has been the only place when Mr. Miller  
4 has admitted that maybe he did have a conversation with  
5 Chwastyk. He didn't think he did, but he might have. This  
6 is the only forum in which that has been brought up.

7 JUDGE SMITH: You have digressed.

8 What I am saying to you -- you  
9 tell me the relevance of what you are saying. That is a  
10 digression. I just don't understand why you would be going  
11 in that direction.

12 MS. BERNABEI: The relevance is --

13 JUDGE WOLFE: And Mr. Chwastyk appeared live to  
14 testify before this Board, did he not?

15 MS. BERNABEI: That is right.

16 JUDGE WOLFE: Well?

17 MS. BERNABEI: The point of that is that Chwastyk's  
18 statement brought up to Mr. Miller -- in fact elicited  
19 testimony that has not previously been elicited. At least  
20 that is my understanding of this record, and I think it has  
21 been useful with regard to Mr. Miller and regard to other  
22 witnesses.

23 It also -- review of statements of the witnesses  
24 has with Mr. Dieckamp elicited a response yes, there is some  
25 evidence that some people understood the significance of the

1 pressure spike. That to my knowledge has never been admitted  
2 on the record.

3 I think there is utility to bringing up individual  
4 statements and confronting witnesses that are here before  
5 the Board with those statements.

6 JUDGE SMITH: And we have allowed you to do it.  
7 You have done with the Frampton-Rogovin?

8 MS. BERNABEI: Yes.

9 JUDGE SMITH: Move on then.

10 BY MS. BERNABEI: (Continuing)

11 Q Mr. Miller, on March 28th, did you know that  
12 temperatures of 2200 degrees F, the zirc water reaction would  
13 occur so as to produced large amounts of hydrogen?

14 A I can't recall the day.

15 Q Did you know at what temperature the zirc water  
16 reaction -- water metal reaction would, in fact, occur?

17 A At that time, I may have known a range it could  
18 occur in, but I can't recall it today.

19 Q What was the range that you understood at that time,  
20 to the best of your memory today?

21 A I don't remember. I am just saying that I am  
22 certain that I knew there was such a thing as a zirc water  
23 reaction.

24 Q And that would have been -- your best memory or  
25 knowledge today would have been it would certainly have been

1 in the 2500 degree range?

2 A I don't remember, but I don't dispute your number.

3 Q What I am asking you is, your best knowledge and  
4 memory today you would have known that the zirc water reaction  
5 would occur to produce significant amounts of hydrogen at  
6 2500 degrees F?

7 A I don't know how to answer that. I never thought  
8 about zirc water reaction that day. You are asking me if I  
9 technically knew, and I probably did, and I don't remember  
10 today.

11 Q In answer to questions from both -- well, from  
12 Judge Linenberger, you talked about drawing a bubble in the  
13 pressurizer. Just to clarify, the time one closes the block  
14 valve, and draws the bubble in the pressurizer, that  
15 depressurization of the system ceases, is that correct?

16 A That would be true.

17 Q And it is fair to say that drawing the bubble in  
18 the pressurizer is one step in an evolution of pressurizing  
19 the system.

20 A That is a step in pressurizing the system.

21 Q Okay. What other steps are necessary in order to  
22 pressurize the system?

23 A My difficulty is you normally pressurize the  
24 system by the method I described to Mr. Linenberger.

25 Q I am asking you --

1           A     I am trying to think of how to answer your  
2 question, because I am not in a normal situation. What am  
3 I trying to answer.

4           Q     Let me ask you the question this way. Mr.  
5 Chwastyk has testified that in pressurizing the system, one  
6 would need to draw a bubble in the pressurizer, close off  
7 the block valve. You would also need to develop a mode of  
8 core circulation. You also need a heat sink to remove the  
9 heat. Is that basically your understanding of how one would  
10 go about pressurizing?

11           MR. BLAKE: Ms. Bernabei, I just can't accept  
12 that characterization of any witness' testimony, that those  
13 were elements in repressurizing.

14           JUDGE SMITH: I don't recall anybody testifying  
15 about a heat sink being necessary to repressurize the system.  
16 Nor the other element. I forget the third out of the four.

17           MS. BERNABEI: Let me ask the question. I think  
18 there is testimony, but we don't need to go back to that.

19           BY MS. BERNABEI: (Continuing)

20           Q     It is fair to say that to pressurize, besides  
21 drawing a bubble one needs to establish a mode of core  
22 circulation. That is another step or element in pressurizing?

23           A     You can pressurize a system by just turning the  
24 heaters on and closing the block valve and letting the  
25 plant pressurize. It has nothing to do with flow.

1 Q Okay. So that alone would be sufficient?

2 A Not normally. You said -- I said you could  
3 pressurize that way.

4 JUDGE SMITH: You are not saying that would be a  
5 good idea to do it.

6 WITNESS: I mean that, but that doesn't pressure  
7 the system.

8 BY MS. BERNABEI: (Continuing)

9 Q There -- it is also fair to say that is a necessary  
10 step in repressurizing?

11 A I don't know how to answer that.

12 Q Well, it is fair to say without closing the  
13 block valve, one could not repressurize?

14 A That is fair to say.

15 Q And without drawing a bubble in the pressurizer,  
16 one normally cannot pressurize?

17 A Except for the situation we were in on March 28th.  
18 We were at pressure without that, because the plant was hot  
19 and you had steam bubbles at other places in the loops.

20 That is true, if the only hot vessel in the  
21 plant is the pressurizer. When that is not the only point  
22 of steam, then what you are saying isn't necessary true and  
23 I am not trying to be funny, but it doesn't have relevancy  
24 to me.

25 Q On the afternoon of March 29th, it is true that

1 there was an attempt several times to draw a bubble in the  
2 pressurizer, is that correct?

3 A I think it is fair to say in the morning when I  
4 got there to read my statement that I tried to turn heaters  
5 on and they weren't available.

6 Q I am talking about the afternoon, now.

7 A I don't know that.

8 Q You don't know?

9 A No better than I have written down and testified.

10 Q There is testimony in this proceeding by two  
11 individuals that in fact a bubble was attempted to be drawn  
12 in the pressurizer on the afternoon after the pressure spike.

13 Do you know if that is correct?

14 A I don't myself know.

15 MS. BERNABEI: I have no other questions.

16 JUDGE SMITH: I am sorry. I was talking to Judge  
17 Linenberger. Are you finished?

18 MS. BERNABEI: Yes.

19 MR. AU: I have no questions.

20 MS. FINKELSTEIN: The Staff has no questions.

21 MR. BLAKE: No questions.

22 JUDGE SMITH: You may step down, Mr. Miller. Thank  
23 you very much for coming.

24 WITNESS STOOD ASIDE.

25 JUDGE SMITH: There may still be confusion about

1 the status of all of these exhibits compared to the  
2 items and the parts referred to.

3 As Judge Wolfe explained, we do not feel obligated  
4 to read them all, and indeed at least this member of the  
5 Board will not. And then as he pointed out, consistent with  
6 our rulings, that we will -- you should use in your proposed  
7 findings only those portions which were referred to during  
8 the hearing, identified or somehow fit into our rulings.

9 What we didn't make clear, and I don't know if  
10 anybody got confused about it, is that if the Board exercises  
11 its authority to go ahead into other parts of the exhibits  
12 not referred to in the hearing, it would not be appropriate  
13 for us to make a finding on a material issue in dispute  
14 without notice to the parties, and that is, we would not take  
15 an exclusion of our own through this large volume of  
16 exhibits and come into an obscure point. Not picked up in  
17 the context of the hearing and make a finding on it on a  
18 material issue in dispute without notice to the parties.  
19 If we felt that is so far beyond what is being considered  
20 during the hearing, when the parties had an opportunity to  
21 address it, it would not be our intention to make findings.

22 15.  
23 MS fols.

24

25

Sim 16-1 1

2 In other words, we are under pretty much the  
3 same responsibility as the parties are not to make findings  
4 on information which was never considered by the parties  
5 in the hearing.

6 Any questions about that? I think that is pretty  
7 traditional.

8 MS. BERNABEI: And I understand that you -- perhaps  
9 I should ask a question. Do you expect the parties to draw  
10 attention either through questioning of witnesses or through  
11 notice to the Board of any portion of any of the Joint  
12 Mailgram Exhibits to which we intend to rely? In other  
13 words, are we ---

14 JUDGE SMITH: I don't know how you are saying  
15 it, but that generally captures my memory of what we have  
16 been saying throughout here.

17 MS. BERNABEI: Well, we intend to prepare a large  
18 number of notices, as the licensee has done, to bring the  
19 Board's attention to a number of points in the interviews  
20 that address the points, and I assume that you still wish that  
21 to be done.

22 JUDGE SMITH: Oh, well, I am saying that if you  
23 wish to have proposed findings considered on items not  
24 alluded to in this hearing, well then you may be out of  
25 luck. You had better timely bring our attention and the  
parties' attention to matters in those exhibits upon which

Sim 16-2

1 you rely.

2 MS. BERNABEI: Well, we have done that as a rule,  
3 and I think have consistently been the party that has done  
4 that through examination of the witnesses. I understand  
5 there is a second alternative which has been offered and I  
6 think the licensee has largely made use of, which is to provide  
7 notices with lists of portions of documents. I assume that  
8 is available to all the parties.

9 JUDGE SMITH: Yes. We have discussed this many  
10 times. I don't know what motivates your question.

11 MS. BERNABEI: Judge Wolfe seemed to suggest that  
12 if we have addressed a point that we need not bring up the  
13 specific portion of the document either by notice or by  
14 questioning of witnesses. I assume that the Board is saying  
15 no, we ---

16 JUDGE SMITH: You mean if a topic has been touched  
17 upon, everything which pertains to that topic is fair game?

18 MS. BERNABEI: Right. That is how I understood  
19 it. Perhaps that was wrong.

20 JUDGE SMITH: You didn't have that in mind,  
21 did you?

22 JUDGE WOLFE: No.

23 JUDGE SMITH: That wasn't his intention.

24 MS. BERNABEI: Okay. We will just file it.

25 JUDGE SMITH: I am glad you clarified that.

Sim 16-3

1 All right, the next witness.

2 MR. BLAKE: Mr. Herbein.

3 JUDGE SMITH: Mr. Herbein.

4 Whereupon,

5 JOHN G. HERBEIN

6 was called as a witness and, having been previously duly sworn  
7 by Judge Smith, was examined and testified as follows.

8 MS. BERNABEI: May I have just a moment.

9 (Pause.)

10 MR. GOLDBERG: While we have a brief pause here,  
11 this morning I indicated that we had identified two documents  
12 responsive to a TMIA document request. One was provided to  
13 TMIA this morning and the other was just provided to TMIA  
14 and the other parties.

15 JUDGE SMITH: Off the record for a moment.

16 (Discussion off the record.)

17 JUDGE SMITH: Back on the record.

18 State your name, please, sir?

19 THE WITNESS: John G. Herbein.

20 JUDGE SMITH: You may inquire.

21 CROSS-EXAMINATION

22 BY MS. BERNABEI:

23 Q Mr. Herbein, what is your current position?

24 A Vice President Station Operations, Pennsylvania  
25 Electric Company.

INDEXXXX

Sim 16-4

1 Q Can you describe briefly your educational back-  
2 ground and professional experience in the nuclear industry?

3 A I am a Naval Academy graduate. I spent seven  
4 years in the Navy. One year during my naval service was  
5 spent at the Naval Nuclear Power School. Following my  
6 release from the Navy I worked at the Yankee Atomic Power  
7 Plant approximately a year and then joined Metropolitan  
8 Edison Company and worked at the Saxton Reactor in Saxton,  
9 Pennsylvania for approximately three years. And in 1970  
10 came to Three Mile Island as Station Engineer. I was at  
11 Three Mile Island from 1970 to 1975. During that period of  
12 time I progressed from Station Engineer to Station Superin-  
13 tendent. In 1975 I moved back into Reading as Manager of  
14 Nuclear Operations. In November of 1976 I was named Manager  
15 of Generation Operations for Metropolitan Edison and in  
16 June of 1977 I was designated Vice President of Generation  
17 for Met Ed. I continued in that capacity until the accident  
18 at Three Mile Island, Unit 2, which occurred in March of  
19 1979.

20 Q Directing your attention to March 28th, 1979,  
21 what were your duties and responsibilities in your position  
22 at that time?

23 A I was Vice President of Generation for  
24 Metropolitan Edison and was responsible for the overall  
25 management, including operations engineering, of the

Sim 16-5

1 generation facilities for Met Ed.

2 Q When did you first learn of the TMI accident?

3 A Through a phone call on the morning of March  
4 28th.

5 Q And if you can, summarize briefly what you  
6 learned at that time and what instructions or directions  
7 you were given in that conference call or telephone call?

8 A I don't remember precisely, but the summary of  
9 that phone call was that the plant had gone through a high-  
10 pressure trip, and I believe at the time the reactor coolant  
11 pumps had been tripped and we were using natural circulation  
12 to cool down the unit and that station staff believed that  
13 the plant was in a configuration that was safe.

14 Q And what instructions were you give at that time?

15 A I am sorry, did you ask what instructions I  
16 was given?

17 Q Yes, at that time or any subsequent phone call.  
18 You were not then at the site, is that correct, you were  
19 in Philadelphia?

20 A That is correct, I was in Philadelphia.

21 Q Were you directed some short time thereafter  
22 to proceed to the site?

23 A To the best of my recollection, around 9:30 or  
24 10 o'clock my boss, Walter Creitz, President of Metropolitan  
25 Edison, asked fairly strongly that I leave the naval base

Sim 16-6

1 in Philadelphia and travel to the site at Three Mile Island.  
2 I did that and got to the site around a quarter to 12.

3 JUDGE WOLFE: Quarter of what, please?

4 THE WITNESS: Quarter of 12 in the morning, sir.

5 BY MS. BERNABEI:

6 Q And during March 28th for the period you were  
7 at TMI or near the -- you were located in the observation  
8 center, is that correct, and not on the island itself?

9 A That is correct.

10 Q Is it fair to say that Gary Miller was your  
11 primary contact or your primary source of information about  
12 the condition or the parameters of the reactor on March 28th?

13 A Yes.

14 Q Now you learned, did you not, of incore thermo-  
15 couple temperatures in the range of 2400 degrees on March  
16 28th?

17 A I did not. We have been through that in my  
18 deposition prior to this hearing.

19 Q Okay. I would like to refer you to what has  
20 been labeled as Joint Mailgram Exhibit 61 at page 15. It  
21 is a transcription of Mr. Herbein's testimony before the  
22 Kemeny Commission.

23 (Pause.)

24 MS. FINKELSTEIN: Excuse me, we don't have a  
25 copy.

Sim 16-7

1 MS. BERNABEI: I know. This was a transcription  
2 that TMIA made and provided a copy to the licensee, and I  
3 assumed they were going to provide copies to everyone else.

4 Would you like to share with either us or Mr. Blake?

5 (Pause.)

6 For the Board's understanding, there is a tape  
7 that is currently the Joint Mailgram Exhibit. We could not  
8 find a transcription. So we had this transcribed and we will  
9 enter the transcription as a Joint Mailgram Exhibit itself.

10 BY MS. BERNABEI:

11 Q Mr. Herbein, referring you to ---

12 JUDGE SMITH: Is this the one that you referred  
13 to this morning? . . .

14 MR. BLAKE: No, it is not. I think I referred  
15 to adding an easier one yet where we added for Mr. Miller  
16 a portion of an interview which had been the subject of a  
17 tape 159. That was probably the association you made. I  
18 don't think I referred to this one.

19 BY MS. BERNABEI:

20 Q Now starting on page 14, Mr. Herbein, you are  
21 asked certain questions, are you not, about what radiation  
22 readings you were aware of on March 28th?

23 A You will have to repeat the question to me. I  
24 am sorry.

25 Q Yes. On page 14 you are asked about whether or

Sim 16-8

1 not on March 28th, the morning period, you were aware of high  
2 radition readings in the core, the question which appears  
3 at the end of page 14.

4 A Yes, I see that.

5 Q Okay. And that is referring to March 28th; is  
6 that correct? The reference point is the morning period  
7 of March 28th?

8 A Okay.

9 Q Is that correct?

10 A Well, I think this whole transcript has to do  
11 with March 28th.

12 Q Okay. Now proceeding now onto page 15, the  
13 question is asked, the first full question on that page,  
14 "Did you know about the high temperature readings that you  
15 were getting in the core then?"

16 Is that the question?

17 A Yes, that is the question.

18 Q And you stated that they were relayed to you;  
19 is that correct, the core temperatures?

20 A Are you talking about core temperatures or  
21 radiation readings?

22 Q High core temperatures. Let me ask. The  
23 question appears, does it not, "Do you know about the high  
24 temperature readings that you were getting in the core then?"

25 A That is what the question says, yes.

Sim 16-9

1 Q Okay. That is referring to March 28th, is it  
2 not?

3 A Yes.

4 Q And your answer is "They were, they were relayed  
5 to me," is that correct?

6 A That is what it says, yes.

7 Q Okay. You also indicate that you believe they  
8 were woefully inaccurate. Some have question marks, some  
9 were reading zero and some were reading as high as 2400  
10 degrees; is that correct?

11 A That is what it says.

12 Q That would indicate, would it not, that you  
13 testified to Kemeny that in fact there were relayed to you  
14 incore thermocouple temperatures, some in the range of  
15 2400 degrees?

16 A I disagree with that and we went through that  
17 at my deposition. It is true it says 2400 degrees in this  
18 transcript, but I in no way intended at the time I gave  
19 this testimony to imply that I personally had knowledge of  
20 2400 degrees on the day of the accident. I have since the  
21 deposition we took some four to five weeks ago gone back  
22 and looked at my previous testimony, and nowhere can I find  
23 when asked this same question again and again that I indicated  
24 that I had knowledge of 2400 degree temperatures on the day  
25 of the accident.

Sim 16-10

So that is certainly not what I meant.

Q Well, isn't that what it says and didn't you say in your deposition that it what it says, regardless of whether it is correct or not?

A I said that it says 2400 degrees, but in no way is it meant to characterize that I had that personal that personal knowledge on the day of the accident and, as I just indicated, I had gone back and looked at my previous testimony to refresh my recollection on the subject, and nowhere did I state that I had that knowledge.

Q Now let's stick for a moment just to this testimony. In your deposition didn't you state in reference to the portion I read to you, the answer on page 32 it says March the 28th and it says 2400 degrees.

MR. BLAKE: Ms. Bernabei, why don't you read him the next page as well of this transcript that we are focused on here so that no one is misunderstanding.

MS. BERNABEI: I think you can do that, Mr. Blake, and if you ---

MR. BLAKE: Well, sure I can at another point.

JUDGE SMITH: May I read it?

MS. BERNABEI: Certainly.

(Pause while a copy was given to the Board.)

BY MS. BERNABEI:

Q Mr. Herbein, do you have your deposition before you?

Sim 16-11

1 A Yes.

2 Q Your deposition given in this proceeding on  
3 September 28th, 1984. You don't have it.

4 (Pause while the document referred to is given  
5 to the witness.)

6 JUDGE SMITH: 31 and 32.

7 MR. BLAKE: I am looking at pages out of the  
8 transcription interview of John Herbein and not his  
9 deposition.

10 JUDGE SMITH: You are working on his deposition  
11 though, aren't you?

12 MS. BERNABEI: I asked him a question about  
13 Kemeny and then I asked him didn't you say in your deposition  
14 your interpretation of this.

15 MR. BLAKE: All the earlier readings and references  
16 were to this Kemeny interview, correct? That is what you  
17 have read and that is what you were referring to, the Kemeny  
18 interview?

19 MS. BERNABEI: No. I am on his deposition now.  
20 His Kemeny interview of July 19, 1979 was our starting point.  
21 We have now moved to his deposition in which he interprets  
22 that Kemeny Commission interview.

23 MR. BLAKE: And every reference to day, including  
24 to the 2400 has been to the Kemeny interview; is that  
25 correct, and it say that or it didn't say that? Is that

Sim 16-12

1 the only document he has had in front of him to refer to  
2 and to discuss?

3 My suggestion was that since the Board didn't  
4 have a copy, why don't we refer as well to the following  
5 page in the Kemeny interview.

6 MS. BERNABEI: I have a certain amount of  
7 questioning ---

8 JUDGE SMITH: Let us catch up. Let us catch  
9 up with the deposition and then we will know what we are  
10 talking about.

11 (Pause.)

12 BY MS. BERNABEI:

13 Q Mr. Herbein, I asked you a question, did I not,  
14 in your deposition of September 28, 1984 on page 32 about  
15 the question and answer which appears in the Kemeny  
16 interview; is that correct?

17 A During my deposition we talked about the  
18 Kemeny interview and we talked about the 2400 degrees.

19 Q Okay. And in answer to my question about your  
20 interpretation of this testimony, the Kemeny Commission  
21 testimony, you said, did you not, and I will read the  
22 entire answer.

23 "Answer: It says March the 28th and it says  
24 2400 degrees. But for me to say that is what that means,  
25 I just have to look at that testimony to be able to put that

1 in context," is that right?

2 A That is what it says.

3 Q Do you remember testifying at any prior time  
4 that in fact ---

5 JUDGE SMITH: Wait a minute. I want to read  
6 this.

7 (Pause.)

8 MR. BLAKE: Ms. Bernabei, to what page in  
9 Mr. Herbein's deposition did you refer Mr. Herbein and the  
10 Board to?

11 MS. BERNABEI: 32.

12 JUDGE SMITH: 32.

13 MR. BLAKE: Only 32?

14 MS. BERNABEI: Yes.

15 MR. BLAKE: I would suggest that the Board read  
16 pages 29 on, which is the same area of questioning.

17 MS. BERNABEI: Let me just say as a rule I really  
18 oppose interruption of any party's questioning of the witness.  
19 If other parties wish to use any portion of the deposition  
20 or any interview, or the Board wishes to ask questions, I  
21 think it is appropriate. I think I should be entitled to  
22 inquire in a line of questioning without being interrupted.

23 JUDGE SMITH: Ms. Bernabei, do you recall the  
24 Board ever having faced this issue before?

25 MS. BERNABEI: Yes.

Sim 16-14

1 JUDGE SMITH: And what has been our ruling?

2 MS. BERNABEI: Your ruling has not been that I  
3 am directed to ask Mr. Blake's questions.

4 JUDGE SMITH: What do you think our ruling has  
5 been in this context?

6 MS. BERNABEI: That you want to develop the  
7 record fully.

8 JUDGE SMITH: When?

9 MS. BERNABEI: At the time.

10 JUDGE SMITH: And now are you asking us to depart  
11 from that ruling?

12 MS. BERNABEI: I am saying I am not going to  
13 read a deposition in the way that Mr. Blake wants me to read  
14 it because that is not my reading.

15 If the Board wishes to permit the other parties ---

16 JUDGE SMITH: Is there any reason why we should  
17 depart from our previous ruling, which has been at the time  
18 that the matter comes up we want the full context of it to  
19 be put in the record and not, as you suggest, on redirect  
20 or on the next person's turn.

21 MS. BERNABEI: Then I think any party that wants  
22 to do that -- we oppose that method of proceeding. We think  
23 each party should be able to develop the record in ---

24 JUDGE SMITH: I understand that you oppose it,  
25 but haven't we previously discussed it and ruled?

Sim 16-15

MS. BERNABEI: Fine.

JUDGE SMITH: Well, is it your intention to ask us to reconsider or is it your intention to not obey our previous ruling?

MS. BERNABEI: Judge Smith, I don't know how to obey it. Unless Mr. Blake gives me the questions, and I will not ask the questions he wants me to ask. If the Board wishes to ask them or if the Board permits him to ask it or if the Board permits him to introduce portions of the deposition, fine. I frankly don't know how to comply with the Board's ruling other than to, you know.

(Board conferring.)

end Sim  
Sue fols

12

13

14

15

16

17

18

19

20

21

22

23

24

25

#17-1-SueT

1 JUDGE SMITH: Do you want us to go back to  
2 Page 29 of the deposition?

3 MR. BLAKE: Yes. The initial reference I  
4 believe to this Kemeny Commission testimony is on Page 28,  
5 but in order to get a sense for what the one Question and  
6 Answer was that Ms. Bernabei has referred I suggested Pages  
7 29 forward.

8 (Judge Smith is looking at the document.)

9 JUDGE SMITH: I think that the entire section  
10 from Page 29 through 32 should be available for considera-  
11 tion. The only part of it that I read that tends to  
12 support your position is exactly the part that you read,  
13 and that is, it says March the 28th and it says 2400  
14 degrees. But nowhere during the exchange does he agree  
15 with you on any other aspect of it.

16 MS. BERNABEI: Let me proffer what I'm trying  
17 to establish. I think Mr. Herbein's prior testimony in-  
18 dicates he was aware of incore thermocouple temperatures  
19 in the range of 2400 degrees, not only this interview  
20 but other interviews.

21 JUDGE SMITH: That deposition does? Not the  
22 part that I read.

23 MS. BERNABEI: Judge Smith, if you would allow  
24 me to finish. I'm trying to --

25 JUDGE SMITH: Well, I'm trying to understand as

#17-2-SueT

1 you progress.

2 MS. BERNABEI: I am talking about his prior  
3 testimony. Let me start over again.

4 There are two former interviews of Mr. Herbein  
5 which indicate he knew on March 28th of incore thermocouple  
6 temperatures. One indicates a range of 2400 degrees. One  
7 is Kemeny Commission; the second is this SIG interview.  
8 I believe --

9 JUDGE SMITH: Oh, the SIG interview. I'm sorry.  
10 I didn't understand that.

11 MS. BERNABEI: The Kemeny -- the way I read the  
12 Kemeny Commission interview, which you have before you,  
13 is Joint Mailgram Exhibit 61, is that on March 28th Mr.  
14 Herbein was informed of temperatures of 2400 degrees.

15 I think in his deposition the point I've refer-  
16 red you to, he says, "That's the way it reads. I don't  
17 agree with it but that's the way it reads."

18 I think his interpretation of his former inter-  
19 view as stating that is important. Now, whatever his  
20 testimony is today, he can say: I stated that then. I  
21 didn't mean it. It was wrong. It's wrong today. It's  
22 not my understanding today.

23 But I think we are entitled to prove not only  
24 he said that in the Kemeny Commission interview, but he  
25 affirmed that that's the sense of the Kemeny Commission

#17-3-SueT

1 interview --

2 JUDGE SMITH: No. He said it says those things.  
3 As I understand, he was reading it.

4 MS. BERNABEI: Right.

5 JUDGE SMITH: As I understand Page 32 he was  
6 reading from something --

7 MS. BERNABEI: I think he was interpreting --

8 JUDGE SMITH: And he says, "It says March the  
9 28th. And it says 2400 degrees."

10 And that's why you are offering it, because he  
11 read it? Because he believed that that's what it says?

12 MS. BERNABEI: Right. It's his interpretation  
13 of his testimony on July 29, 1979. And I think his  
14 interpretation is important.

15 Now, he can say anything he wants today about  
16 how it was wrong, he made a mistake, it shouldn't have  
17 read that way. But his interpretation is the testimony  
18 does say he knew on March 28th of incore thermocouple  
19 temperatures --

20 JUDGE SMITH: It doesn't say that.

21 MS. BERNABEI: That's the way I read it.

22 JUDGE SMITH: Well, I just don't see that. It  
23 says March the 28th and it says 2400 degrees, and the  
24 context of the rest of his testimony, four pages of it,  
25 are that that's not what it means. I'm sorry. I just

#17-4-SueT 1

2 don't understand your point, and we are struggling to under-  
3 stand it but I just got done reading four pages contrary  
4 to what you are telling us.

5 MS. BERNABEI: That's not true, Judge Smith.  
6 I think you don't understand.

7 Page 28, I refer him to Page 15 of his testimony  
8 before the Presidential Commission, the Kemeny Commission,  
9 Line 13. That is the portion of the official transcript.  
10 That is the portion to which I referred Mr. Herbein in this  
11 hearing at Page 15 of Joint Mailgram 61.

12 Mr. Herbein is sitting in his deposition. Okay.

13 JUDGE SMITH: Okay.

14 MS. BERNABEI: Across from me at the table with  
15 the Kemeny Commission interview reading it. I am asking  
16 him how he reads it. And I ask him the question, "Don't  
17 you read that to indicate on March 28th you knew of incore  
18 thermocouple temperatures at 2400?"

19 He looked at the interview and when he says  
20 "it" he means the interview. He looks at the interview,  
21 he says, "It says March 28th. It says 2400 degrees. I  
22 don't think that's right today but that's what that inter-  
23 view says."

24 I think that's probative of how he interpreted  
25 an interview he gave on July 29, 1979. Now, if he wants  
to retract that testimony today, that's another thing. I

#17-5-SueT 1

2 think it's probative that he knew about those temperatures  
3 on that date.

4 JUDGE SMITH: That's not what Pages 29 through  
5 32 say. Move on.

6 BY MS. BERNABEI: (Continuing)

7 Q Did you testify to the Special Inquiry Group  
8 that you learned of incore thermocouple temperature  
9 readings from Gary Miller on March 28th?

10 A I'm not sure. I have testified before a number  
11 of different bodies about thermocouple readings on March  
12 the 28th.

13 And in my testimony before those various groups,  
14 I indicated that my testimony related to the printout from  
15 the computer which on March the 28th gave question marks  
16 and I believe zeros, and I'm not sure why that occurred,  
17 whether the computer was backed up or just what the reason  
18 for that was.

19 But the information that I obtained on March 28th  
20 had to do with the computer readings that dealt with the  
21 thermocouples. And the way in which that came to my  
22 attention I believe was probably through conversations with  
23 Gary Miller that indicated that his advisors and himself  
24 had looked at that information and believed that it was  
25 inconclusive and unreliable.

Q Now, Mr. --

#17-6-SueT

1 A And that, in essence, summarizes my testimony  
2 before most all of the groups that I think I have been  
3 before.

4 Q Mr. Herbein, weren't you referring -- and I  
5 will refer you specifically to Page 17 of your Special  
6 Inquiry Group testimony, Joint Mailgram Exhibit 82.  
7 Weren't you referring to incore thermocouple temperature  
8 readings read by a millivolt reader, not computer reading?

9 I refer you specifically now to Line 16  
10 through 24, Page 17. It's labeled as Joint Mailgram  
11 Exhibit 82. It's in the black binders, Mr. Herbein, to  
12 your left.

13 A There are a number of them here. Could --

14 Q 82.

15 A Tab 82. I'm at Tab 82.

16 Q Page 17.

17 A The page numbers aren't clear. Does it start  
18 with, "Q: Do you remember whethe. there was a discussion  
19 of hot leg temperature readings being off scale high?"

20 Q Right. That's the right page. Referring you  
21 now to Line 16, let me read this. Let me start with the  
22 Question on Line 9. I understand it may well run things  
23 together.

24 "Do you remember whether then or at any time  
25 in the afternoon you had any conversations with people in

#17-7-SueT

1 "the control room about incore or thermocouple readings?

2 "Answer: I think I did.

3 "Question: What do you remember about those  
4 conversations or that conversation?

5 "Answer: That Mr. Miller had seen a few of the  
6 incore thermocouple readings and that there were others that  
7 indicated either question marks or zeros. Some readings  
8 being high and some being very low. His evaluation of  
9 the incore thermocouple data that he had seen was that it  
10 probably wasn't reliable because of the range of data and  
11 the absence of data in some cases. I think the essence was  
12 that he didn't believe the thermocouple indications were  
13 reliable."

14 Wouldn't that indicate, Mr. Herbein, that he  
15 is talking there about the incore thermocouple data which  
16 Mr. Miller described as ranging from zero two hundred  
17 degrees to 25, 2400 degrees?

18 A No. I disagree with that. I've told you  
19 previously, just today, that I believe the data referred  
20 to with regard to thermocouple readings had to do with the  
21 computer readings and the readouts that gave zeros and the  
22 question marks. And I believe that's what I'm referring  
23 to here on Lines 16 through 24 of this transcript, Tab 82.

24 Q Do you know if any readings off the computer  
25 were very low? The incore thermocouple temperature

#17-8-SueT 1

2 readings off the computer? If there were any very low  
3 readings?

4 A I imagine with all that has passed over the  
5 last five years that, yes, there were some that were read-  
6 ing low.

7 Q In the morning of March 28th?

8 A On the morning of March 28th.

9 Q Do you know whether there was a range, some  
10 readings very high and very low?

11 I'm talking now about the computer readings for  
12 incore temperatures.

13 A Well, I would assume that that's the case.  
14 Yes, that there were some question marks and zeros and  
15 some with a range of low and high readings.

16 Q Okay. Do you know that for a fact?

17 A No. I said I would assume that.

18 Q Now, on the morning of -- well, throughout the  
19 day on March 28th, you spoke to Mr. Arnold, did you not?

20 MR. BLAKE: Ms. Bernabei, are you now leaving  
21 that area and Mr. Herbein's statements?

22 MS. BERNABEI: Well, not exactly. You mean those  
23 two statements?

24 MR. BLAKE: Are you going to refer him to any  
25 other portions of that transcript with regard -- or any  
other transcripts with regard to his past testimony on --

#17-9-SueT

1 MS. BERNABEI: On incore thermocouples.

2 MR. BLAKE: On thermocouples.

3 MS. BERNABEI: I didn't intend to.

4 MR. BLAKE: Pardon? You did intend to?

5 MS. BERNABEI: I did not. If Mr. Blake wants  
6 to question the witness, you know, the Board should just  
7 allow him to do that. If he wants to interrupt the cross-  
8 examination, I think the Board should make that ruling.

9 JUDGE SMITH: Well, it's a problem at least in  
10 part, Ms. Bernabei, as brought about by your own cross-  
11 examination technique. And that is, to take an item out  
12 of a larger body of information and cast it to the witness  
13 and go on from there.

14 I know you disagree with our ruling; however,  
15 you are going to have to comply with it. And that is,  
16 if you yourself would make an effort to capture the entire  
17 context of the exchange to which you are alluding your  
18 cross-examination we wouldn't have this problem. Your  
19 cross-examination would be much smoother. You could do  
20 it your way, you wouldn't have these interruptions.

21 But you are not making any effort to give a  
22 cross-examination that really reflects the data that you  
23 are using.

24 MS. BERNABEI: Judge Smith, I simply agree. I  
25 think you have mischaracterized the deposition of Mr.

#17-10-SueT

1 Herbein. I will insist -- and I think I am correct --  
2 Mr. Herbein stated in his deposition: The Kemeny Commission  
3 interview says March 28th, it says 2400 degrees. I don't  
4 agree with that today but that's what's on those pieces  
5 of paper.

6 That's the way I read the deposition. Now, if  
7 the Board doesn't, fine. And if it wants to make a ruling  
8 that others are allowed to interrupt and ask questions of  
9 the witness, and insert things in the record, that's fine.  
10 I'm not going to agree to that procedure.

11 And I am attempting to comply with the Board's  
12 ruling. But it is over my objection. I do not think this  
13 is fair to not allow a party to develop a record.

14 JUDGE SMITH: I don't really care for the idea  
15 that you are being interrupted in your cross-examination.  
16 That is something that should be avoided.

17 But how else are we going to deal with this  
18 problem? And the record will speak for itself as to  
19 whether there is a problem. We have perceived one, and  
20 we are trying our best to have a balanced, accurate  
21 record.

22 If you feel that there is nothing you can do,  
23 that this is the way you see the case, and that there is  
24 no flexibility on your part, you cannot -- you say you  
25 have made your -- well, you haven't really said that you

#17-11-SueT 1 have made your best effort to capture the entire context.  
2 You are saying this is the way you see it, and you go on  
3 from there. Well, you just seem to be throwing it back to  
4 us, that we have to unravel your litigation strategy and  
5 come up with a fairly balanced record.

6 And we are asking your cooperation on it.

7 MS. BERNABEI: Okay. Judge Smith, I don't know  
8 how to litigate cases other than on behalf of my client.  
9 I do not represent the Licensee; I do not represent the  
10 NRC Staff. We obviously are attempting to develop the  
11 record not to get out all information, whether it be harmful  
12 or beneficial to our case. I think that's my responsibility.

13 JUDGE SMITH: That might --

14 MS. BERNABEI: And I also have a responsibility  
15 not to mischaracterize or misrepresent. I don't think I  
16 have done that. I think I have fairly characterized the  
17 depositions and interviews to which I have referred.

18 JUDGE SMITH: Well, it is because we disagree,  
19 and that is because we have a very strong responsibility  
20 to have an accurate and complete record in the public  
21 interest that we, very much to our regret, do interrupt  
22 your cross-examination. And I'm sensitive to it, because  
23 it is not easy for you. I know that it must interrupt  
24 your chain, and I can see that it maybe adds to fatigue  
25 and stress. And we wish we could avoid that.

#17-12-SueT 1

2 But I don't know what else to do. We have a  
3 greater responsibility to have an accurate and complete  
4 record. That's why we are here.

5 I just invite you again to try to give a better  
6 picture of the context of the document upon which you are  
7 cross-examining. I think that you don't need advice from  
8 us on how to try the case, but I might observe that by  
9 presenting a more accurate context your point will be  
10 understood even better than it is when you take a point out  
11 of context.

12 You may proceed. Now, where are we? We have  
13 a problem here, you want an insertion. But now you want  
14 to go to other documents.

15 MR. BLAKE: No. All I'm simply going to do  
16 is notice, provide notice to the Board at the end of the  
17 day.

18 JUDGE SMITH: What we are trying to accomplish  
19 is in the body of the information which she is using to  
20 cross-examine, if you think it's fairly out of context  
21 then it should be brought up.

22 But as I understand, there is no dispute among  
23 the parties now. You just think there are other documents  
24 to the contrary, and you agree that you should not interrupt  
25 for that purpose? We do, too. If I understand your point.

MR. BLAKE: Right. I don't know where to draw

#17-13- 1  
SueT

2 the line. Right in the very same interview, I mean, he is  
3 asked whether or not he is talking about the computer or  
4 about these incores. And he says incores. I mean, he is  
5 talking about the computers. That's what he thought he  
6 was talking about.

7 And, you know, her reference to this one por-  
8 tion is to elicit that it's the other thing. And then  
9 there is another interview where he is asked to interpret  
10 these very same words, and he says the same thing. I  
11 don't know where to draw the line.

12 JUDGE SMITH: It is difficult. But I do think  
13 to the extent possible with an accurate record we should  
14 allow counsel to proceed without interruption.

15 But I do believe that you could do better in  
16 capturing the correct context. And I'm not talking about  
17 the record in its entirety, but of the particular item on  
18 which you are cross-examining. And the more you do that,  
19 the less interruptions.

20 And I think we should all try to make your  
21 cross-examination go a little bit smoother and less stress-  
22 ful for you.

23 Now, you are free to proceed.

24 MS. BERNABEI: I thought Mr. Blake had points  
25 he wanted to bring up.

JUDGE SMITH: Well, he is going to wait.

#17-14-SueT 1

BY MS. BERNABEI: (Continuing)

2 Q Did you speak to Mr. Arnold on March 28th?

3 A Yes.

4 Q Did you speak to him throughout the day?

5 A Yes, I believe I did.

6 Q Did you discuss depressurization with him?

7 A I think you said depressurization?

8 Q That's right.

9 A I'm not sure. I may have.

10 Q Would you refer to Joint Mailgram Exhibit 82  
11 at Page 40?

12 A Again, the numbers are hard to read. It starts  
13 at the top, "by you to him and by him to you?"

14 Q I don't know.

15 (Ms. Bernabei is going through documents.)

16 A I'm pretty sure that this is Page 40. Yes,  
17 on Tab 82.

18 Q Would it indicate you talked to Mr. Arnold on  
19 March 28th about depressurizing?

20 A (The witness is looking at the document.)

21 Q You indicated to him, "Our attempts to de-  
22 pressurize have been unsuccessful."

23 A Ma'am, I haven't read this. If you say that's  
24 the context that this is stated in, then I will take your  
25 word for it.

#17-15-SueT 1

2 Q Would you refer to Page 39? You are asked a  
3 question on Line 3, are you not, "I believe the decision  
4 was made in a telephone conversation between you and Mr.  
5 Arnold; is that right, was it not?"

6 That's the question. I'm on Page 39 now,  
7 sir.

8 A I know you are. But I've got to see when we  
9 talked about a decision in a telephone conversation. I'm  
10 going back to the previous page, Page 38, and it asks  
11 me, "When you returned to the site a decision was made  
12 shortly thereafter to repressurize the system and make  
13 renewed attempts to start a reactor coolant pump; isn't  
14 that right?"

15 And I say, "That's true."

16 Q Okay.

17 A And the question, "I believe that decision was  
18 made in a telephone conversation between you and Arnold,  
19 was it not?"

20 Then, I say, "Yes."

21 Q I'm just trying to get the context of the  
22 question I'm going to ask you about.

23 On Page 39, you talk about conversations with  
24 Mr. Arnold; is that fair to say?

25 A It appears so, yes.

Q Okay. Starting on Line 18 you state, "I think

#17-16-SueT 1

"that for the most part we were calling each other through  
the course of the day. I would call him and he would call  
me."

4

A Yes, that probably refers to discussions between  
Arnold and I.

5

6

Q Now, going on to Page 40 you discuss with him  
attempts to depressurize had been unsuccessful?

7

8

A Yes.

END #17  
Joe flws

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 Q You also talk about --

2 A I am talking there, when we talk about depressurizing  
3 and being unsuccessful, again to put in context, the follow up  
4 sentence by me, in response says: We weren't able to get the  
5 preimary system pressure below the appropriate pressure at which  
6 the decay heat system could be placed in operation.

7 Q That was in the late morning period on March 28th,  
8 is that correct?

9 A No. Not in my opinion. As I recall the events of  
10 that day, in the morning the attempt was to keep the pressure  
11 up, restart coolant pumps, that didn't work, the pumps didn't  
12 start. My sense of what occurred in the afternoon was an  
13 effort to depressurize the system, to get down to the point  
14 that we could go on the decay heat system, and thereby  
15 provide a mode of colling through the decay heat system.

16 And I think that is what I am referring to here.

17 Q That began in the late morning, the depressurization  
18 to get on the decay heat system?

19 A That is not the way I remember it.

20 Q Wasn't the plant in a depressurization mode at the  
21 time you arrived around 11:30 or 11:45 a.m?

22 A I honestly don't know.

23 Q Let's go back for a moment. You had conversations  
24 on and off with Mr. Arnold in the morning. That is fair to  
25 say?

1           A     I recall now that I didn't get to the site  
2 until quarter to twelve.

3           Q     Well, from the time you got to the site, thereafter  
4 during the day?

5           A     I probably had discussions with him, yes. We  
6 have established that.

7           Q     Is it fair to say that you were the interface  
8 between the Med Ed organization and Arnold's organization,  
9 and the GPU Service Corporation?

10          A     I would say interface or conduit. That is  
11 probably correct.

12          Q     Now, Mr. Arnold informed you, did he not, some time  
13 in the late morning or early afternoon that he was sending  
14 down some of his engineering safety analysis people to the  
15 site?

16          A     Well, I think it has been established that Arnold  
17 did send a team to the site to look into some of the technical  
18 information that may have been available.

19          Q     He told you that in the late morning or early  
20 afternoon of March 28th?

21          A     I don't honestly remember if he did or not.

22          Q     I would like to refer you to joint mailgram,  
23 Exhibit 67, at page 11; indicate where you so testified  
24 at a prior time?

25          A     I am on Tab 67, and what page again?

1 Q 11.

2 A Okay.

3 Q Okay, starting your answer on Line 20: I talked  
4 to Bob Arnold at some time in the morning or early afternoon.  
5 We mutually agree that he would send some of his engineering  
6 safety analysis people to the site to assist in determining  
7 the events that had transpired.

8 Is that correct?

9 A That is what it says, tes.

10 Q So apparently you knew in the early morning, or  
11 late afternoon -- excuse me -- late morning, early afternoon  
12 that he was sending some of his people to the site?

13 A I really don't want to be difficult, but no time  
14 frame is established in this context. We said I got there  
15 quarter to twelve, and I probably talked to Arnold during  
16 the day. But I am not sure when, and I don't know that that  
17 is relevant.

18 I don't know exactly when this conversation took  
19 place, and it is not clear from this transcript just when this  
20 occurred.

21 Q Okay. Let's go back to page 10. You are talking  
22 on page 10 about your arrival on site at quarter to twelve.  
23 Page 10, Line 19?

24 A Yes.

25 Q It goes on from there: Did you go directly to the

1 observation center? And you said: Yes, I did.

2 Is that right?

3 A Yes.

4 Q Then they ask you -- the questioner asked you: Did  
5 you receive a briefing on plant status? And you said you called  
6 the control room and spoke to Gary Miller?

7 A To ascertain plant status and condition of the  
8 plant as he understood it at that time.

9 Q Now, moving down, on Line 13, you are asked the  
10 question: Am I correct that in this time frame you were the  
11 ranking Company officer, if you will, at the site?

12 A That is true.

13 Q Were there any other corporate officers here by  
14 noon on the 28th?

15 A No, there were not, that I recall.

16 Q Okay, that is your answer. And then they ask you  
17 was there anybody from GPU here, and you say I am really not  
18 sure, and then you go on to talk about conversations with  
19 Bob Arnold. Is that correct?

20 A That is what it says.

21 Q It is from this context it would appear that this  
22 conversation took place some time after you arrived at the  
23 site at 11:45 a.m?

24 A That is right.

25 Q And it would appear that it took place on March 28th?

1 A Yes.

2 Q Now, do you know who was in this group of  
3 engineers that Mr. Arnold sent to the site?

4 A Again, we went over that in my deposition, and I  
5 think we had established that Tim Moore was one of the  
6 engineers. Julian Abramovici, and Richard Lentz, and I  
7 can't recall who the other one was.

8 Q Gary Broughton?

9 A I am not sure.

10 Q If I represent to you it was Gary Broughton,  
11 -- oh, and George Lehman. Does that sound right?

12 A I don't believe I knew at the time of the accident  
13 who the engineers were. I think it has been established since  
14 tyat time just who the group was composed of.

15 Q I would like to refer you to page 27 of the  
16 same testimony, Joint Mailgram Exhibit 67. Doesn't it  
17 indicate that on the 28th you agreed with Mr. Arnold, Mr.  
18 Broughton and some of the safety analysis engineering group  
19 will come to the site. You noted Mr. Gary Broughton by name  
20 in your testimony?

21 A Yes, it says on Line 12, page 27, Arnold and I  
22 did agree on the 28th that Broughton and several of the safety  
23 analysis engineering group would come out to the site and  
24 would begin an investigation into the particular sequence of  
25 events that led to the plant condition.

1 Q Doesn't that indicate that you knew on the 28th  
2 Mr. Broughton was one of the individuals in the group?

3 A I would assume that is the case. Again, when was  
4 this deposition taken?

5 Q August 21, 1979.

6 A All right.

7 Q Now, to your knowledge, this group of Mr. Arnold's  
8 engineers arrived at the observation center some time on the  
9 afternoon of March 29th -- the 28th, is that correct?

10 A I would assume that is the case.

11 Q Did you arrange for any briefing of these  
12 engineers?

13 A Not that I recall.

14 Q Do you know if they were in fact briefed by any  
15 Med Ed personnel?

16 A I can't state with certainty today that they  
17 were or weren't. I don't know. I assumed they were briefed.

18 Q Well --

19 A By someone. That they came and talked to the plant  
20 folks, and got a sense of plant condition.

21 Q You didn't arrange for any briefing, as far as  
22 you remember?

23 A Not that I remember.

24 Q Now, this group of engineers, Mr. Broughton's group,  
25 was located on March 28th at the observation center for the

1 most part, is that correct?

2 A I don't know. But if you said they were located  
3 at the observation center, I assume you have established that.

4 Q You don't know that?

5 A Not today I don't know that.

6 Q You were located at the time you were at the site,  
7 speaking at both the Island and the Observation Center, you  
8 were located at the Observation Center on March 28th for the  
9 period of time you were there, is that correct?

10 A Except for the time that I went to visit with the  
11 lieutenant governor.

12 Q But you were never located on the island. You  
13 were always located in the observation center?

14 A That is right.

15 Q And you don't know whether or not the GPU Service  
16 Corporation Group was located in the same building you were?

17 A I just don't remember.

18 Q Had you returned to the observation center about  
19 five p.m. on March 28th?

20 A Again, we went through that in my deposition with  
21 regard to what time I got back. My recollection is we  
22 established it was somewhere between 4 and 6 p.m., so I guess  
23 from that one could infer that I was probably at the  
24 observation center around five o'clock on the 28th.

25 Q Do you remember a briefing by Richard Bensel --

1 do you know Richard Bensel?

2 A I think I am going to be embarrassed. Can you  
3 spell his last name?

4 Q B-e-n-s-e-l.

5 A Dick Bensel. Yes, I know him.

6 Q He is an electrical engineer. Or he was at the  
7 time of the accident, is that correct?

8 A Yes.

9 Q And you knew him at that time?

10 A Yes.

11 Q Now, he in his normal course of duties would have  
12 reported to Mr. Kunder, is that correct? Mr. Kunder is head  
13 of technical support; superintendent for technical support?

14 A I assume that is the case. I don't personally  
15 remember that.

16 Q Do you remember any briefing by Mr. Bensel of the  
17 GPU Service Corporation engineering group at about 5:00 p.m.,  
18 on March 28th?

19 A No, I do not.

20 Q Do you remember any briefing by Mr. Bensel to anyone  
21 in the observation center in that time frame?

22 A No, I do not.

23 Q Now, I would like to refer you Mr. Herbein to what  
24 has been admitted in part as TMIA Exhibit 15.

25 A Is that --

1 Q We are going to find you a copy. Mr. Herbein, I  
2 just showed you TMIA Exhibit 15. Specifically, I would like  
3 to refer to a 5:00 p.m., entry on handwritten notes of 5/28/79.  
4 I would like you to review 5th page and the page that follows  
5 and state whether or not you are familiar with any briefing  
6 by Mr. Bensel in that form on March 28th?

7 A No, I am not familiar with that.

8 Q Now, I am referring specifically to notation  
9 two-thirds down the page, on the first page of the 5 p.m.,  
10 entry there. There is a notation incore thermocouples  
11 read greater than 2500 degrees F.

12 A I see the notation on the page you are referring to.

13 Q You don't remember any briefing at or near 5 p.m., on  
14 March 28th indicating incore thermocouples were reading in that  
15 range?

16 A No, and we have been through the thermocouple  
17 issue.

18 Q Now, it is fair to say you were at the observation  
19 center, were you not, at or about 5:00 p.m., on March 28th?

20 A I believe that I was at the observation center  
21 on the afternoon of the 28th, and I assume I was in my office  
22 or thereabouts at the five o'clock time frame.

23 Q Now, assuming for the moment that Mr. Bensel did  
24 transfer this information of incore thermocouple temperatures  
25 greater than 2500 degrees to at least some of the GPU Service

1 Corporation Engineers who had come to the site, do you under-  
2 stand how that information was transmitted to those engineers  
3 and not to yourself as the ranking Med Ed official at the  
4 site?

5 A No, I guess I really don't. But I can understand  
6 how it could happen that information was conveyed to  
7 investigating group that Bob Arnold sent out, and not necessarily  
8 to myself.

9 And I think I can state that with regard to the  
10 role that I attempted to perform on the day of the accident.  
11 I believe that there was a competent, capably managed crew  
12 in the control room. I was asked to leave my Naval Reserve  
13 duty and come to the observation center, and having  
14 ascertained to the best of my ability the condition of the  
15 plant, I was then asked by my boss, the President of Med Ed  
16 to go and brief the lieutenant governor in Harrisburg.

17 I did that, and came back to the observation  
18 center. I think we established the time in late afternoon.  
19 And at that point, then probably had some other discussions  
20 with Arnold. At some point in the later afternoon it changed  
21 from a depressurization you get on decay heat to let's take  
22 one more crack at the reactor coolant pump to see if we can  
23 get in the mode we are familiar with, and in turn feel  
24 comfortable with with regard to forced circulation and core  
25 cooling.

1           In addition to that, I attempted to organize  
2 the offsite effort to the best of my ability with regard to  
3 communications and status boards, and I believe at that time  
4 we talked about setting up a watch and bringing some semblance  
5 of organization so that the various inputs from GPU and others  
6 could be funneled and coordinated as assistance were necessary  
7 to the site and the plant staff.

8           So, in summary, it is conceivable to me that there  
9 could have been discussions, there could have been briefings,  
10 there could have been exchanges of information that I was not  
11 necessarily privy to, not that I didn't want that information  
12 or wouldn't have been very interested in it, but just that  
13 I was involved with other things.

14           Q     Would you have wanted to have information about  
15 incore thermocouple temperatures greater than 2500 degrees  
16 prior to briefing the lieutenant governor in the afternoon  
17 of March 28th?

18           A     I think certainly with the hindsight that time  
19 affords us, I would have very much wanted to know that  
20 information, and had that been shared with me, and had I  
21 understood its context, I certainly would have shared that  
22 with any number of people, including the lieutenant governor  
23 and the NRC.

24           Q     And is it fair to say that you would have wanted  
25 Mr. Miller to transmit that information to you? That is, that

1 some incore thermocouple had read greater than 2500 degrees?

2 A I think I would have wanted Gary to do that, and  
3 certainly with regard to Gary I think capable manager that  
4 he is, had he had that information and again understood it,  
5 he certainly would have conveyed it to me.

6 Q On March 28th 1979, did you know that temperatures  
7 of 2500 degrees, zirc water reaction would occur so as to  
8 produce significant amounts of hydrogen?

9 A The number that I remember is 2200 degrees.

10 Q Right.

11 A I can't really speak to the 2500 -- my understanding  
12 and my recollection today is that at 2200 degrees the zirc  
13 water reaction threshold occurs, and hydrogen begins to be  
14 generated through the oxidation of the zirc alloy.

15 Q And it is fair to say you knew that on March 28th?  
16 That is, that temperatures above 2200 degrees exceeded the  
17 ECCS criteria for peak cladding temperatures?

18 A You have to help me with that question.

19 Q You knew that on March 28th, 1979, at the time  
20 of the accident?

21 A I believe today that I knew 2200 was a threshold  
22 of zirc water reaction. I believe I knew that.

23 Q And it is fair to say you knew there would be  
24 significant amounts of hydrogen produced at temperatures  
25 greater than 2200 degrees. That is significant in terms

1 of -- significant amounts of hydrogen in the reactor  
2 building?

3 A I think we have jumped from my understanding of  
4 theory, to something that more approximates a practical  
5 situation that we now know occurred, and I wouldn't say that  
6 I had that practical experience or direct application of the  
7 theoretical principles on the 28th of March 1979.

8 Q It is fair to say, however, if you were aware of  
9 temperatures greater than 2200 degrees, you knew that the  
10 possibility existed of a zirc water reaction so as to  
11 create -- potentially create significant amounts of hydrogen?  
12 That potential existed?

13 A I guess I could state that through some process  
14 I might have arrived at that conclusion. Let me say in  
15 follow-up to that that I don't think any of us outside of the  
16 theoretical application of zirc water reaction, steam is  
17 formed and subsequent hydrogen evolution, ever really  
18 considered that in an operational context.

19 Certainly, those studies were made in the FSAR,  
20 and they were bounding principles that guided the designers,  
21 and I think there is 10CFR50.46K that refers to that number,  
22 but again, that was a design constraint.

23 That was not something that the operators were  
24 familiar with, or that I myself had direct knowledge of.  
25 Again, it was a design value and that is the way I think I

1 understood zirc water on the 28th of March, 1979.

2 Q Let me ask you the question again. Potential  
3 existed, would it not, in your mind, if you knew the potential  
4 for zirc water reaction existed at temperatures greater than  
5 2200 for production of significant amounts of hydrogen?

End 18.  
MS fols.

6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

19-1

1 A I thought I just answered that question.

2 Q Well, I didn't understand your answer. What I  
3 am saying is that that was a possibility, was it not? That  
4 was something you understood on March 28th?

5 A But I tried to bound that for you in the  
6 theoretical and design aspect and tried to relate that as  
7 far as an operational understanding, you know, I didn't make  
8 that connection or have any reason to make that connection.

9 Q I understand. But you understood, did you not,  
10 that for the zirc water reaction at temperatures greater than  
11 2200 degrees there is the possibility of production of  
12 significant amounts of hydrogen?

13 A It is the word "significant" that is giving me  
14 the problem, and I have stated previously that at 2200  
15 degrees I was aware that a zirc water reaction threshold  
16 appeared, and that through the zirc water process hydrogen  
17 was generated.

18 Q And hydrogen up to flammabel limits, that is  
19 four percent or greater, of the containment design limit,  
20 of the containment volume?

21 A Well, now you have put ---

22 Q I am trying to define significant amounts of  
23 hydrogen for you, and I am defining it as the production of  
24 hydrogen up to flammable limits.

25 A And I don't know that I thought about significant

Sim 19-2

1 amounts of hydrogen.

2 Q Did you know that was a possibility? Now did  
3 you think about on that day and did you know that was a  
4 possibility?

5 A No, I didn't think about it on that day, and  
6 in the context in which you described it, I didn't think that  
7 was a possibility.

8 Q Now you directed Mr. Miller to go to brief the  
9 Governor or Lt. Governor; is that correct?

10 A Well, I think Gary has a little different version  
11 of that exchange than maybe I do, and let me give you mine.

12 Q Well, no, Mr. Herbein. I would like you to  
13 answer my question. Did you direct Mr. Miller to go with  
14 you to the Lt. Governor or the Governor on March 28th?

15 A I told Mr. Miller that I was required by my  
16 boss to go and brief the Lt. Governor and that I wanted an  
17 engineer from TMI-2 to come along with me in case I got  
18 asked a question that I couldn't answer. I thought it would  
19 be appropriate to have some firshand knowledge.

20 Q And he perceived that as a direction or order  
21 from you; is that fair to say?

22 A I had specifically asked Gary to let me have  
23 George Kunder, and as I recall the essence of the conversa-  
24 tion, Gary said that George Kunder could go, but that if  
25 George went he was going to go, too.

Sim 19-3

1 Q Now the three of you traveled to see the  
2 Lt. Governor as a group; is that fair to say?

3 A That is correct.

4 Q And if you can remember, what time did you  
5 leave the site?

6 A I can't remember that, but I have read some  
7 things and certainly being here this afternoon I have heard  
8 the time 2 o'clock, and I have no reason to believe that  
9 that is not at least fairly accurate.

10 Q Or 2:30, have you so testified that it was in  
11 the 2 to 2:30 time frame at prior times?

12 A I don't know if I have testified that way or  
13 not. I don't myself personally remember looking at a watch  
14 as the car pulled away from the observation center, but I  
15 believe that 1400 or 2 o'clock is an accurate characterization  
16 of the time we left.

17 Q Would you have any problem with 2 to 2:30, or  
18 do you have any reason to believe it was exactly at 2 or was  
19 more specifically at 2 than 2:30?

20 A Well, I guess I believe 2 o'clock because that  
21 is what I heard this afternoon.

22 Q Okay. Other than what you have heard today  
23 you have no way of knowing any specific time that you left;  
24 is that correct? You have no other reference point than  
25 what you have heard in this hearing today?

Sim 19-4

1           A     Other than all of the things that have been  
2 written and said over the number of years since the  
3 accident.

4           Q     What else are you referring to, other than the  
5 testimony you have heard today?

6           A     Well, I can't be specific, but I am sure there  
7 are people here that can lay out Rogovin and Hart and Kemeny  
8 and we can go all through that in a sequence of ---

9           Q     I am asking for your knowledge or memory,  
10 Mr. Herbein. Do you have anything else other than the  
11 testimony you heard today to indicate what time you left?

12          A     Not specifically.

13          Q     And during this trip to the State House were  
14 you briefed by Mr. Kunder or Mr. Miller as to the status  
15 of the reactor?

16          A     I am not sure if I was. I may have been. It  
17 would seem to make sense that we talked about that. But I  
18 remember mostly in the automobile ride that we talked about  
19 the emergency plan and whether we had carried out the  
20 requirements of the plan and made the notifications.

21                I also remember talking about protective action  
22 guides and how the protective action guides correlated with  
23 the offsite radiation measurements that we had gotten on that  
24 day.

25          Q     Did you discuss any specific plant parameters

Sim 19-5

1 or conditions with Mr. Kunder and Mr. Miller?

2 A I don't remember.

3 Q Do you remember any specific plant conditions  
4 or parameters?

5 A No, I do not.

6 Q Do you remember whether you discussed whether  
7 there were offsite releases or radiation at that time?

8 A Well, from what I have just said relating to  
9 protective action guides and the emergency plan, I assume  
10 we did talk about the radiation levels that we had measured  
11 in the late morning and early afternoon. So I assume we  
12 talked about that.

13 Q And is it fair to say that there were offsite  
14 releases above background levels?

15 A Well, we get into the definition of offsite, and  
16 I can't relate whether we were out on route 441 or beyond,  
17 but I do recall that at some hundreds of yards away from  
18 the reactor building we were getting numbers on the order  
19 of three, four or five MR per hour, and I think we had  
20 measured some detectable iodine in the environment with the  
21 air sample devices.

22 Q So is it fair to say that you were aware of  
23 some offsite releases in the range of three, four or five  
24 millirems?

25 A Well, I have indicated that I was concerned about

Sim 19-6 1 the definition of "offsite," but I would say it was a  
2 fair characterization that certainly on the site perimeter  
3 we were concerned about the levels of radiation and probably  
4 the numbers were on that order of magnitude.

5 JUDGE SMITH: Pick a place to break for the  
6 evening very soon.

7 MS. BERNABEI: This is fine. I have a couple  
8 more questions, but this would be fine.

9 MR. BLAKE: For my schedule purposes, do you mean  
10 by a couple more questions that you have a couple more  
11 questions on Mr. Herbein?

12 MS. BERNABEI: I have some more questions along  
13 this line and also an additional line of questioning. This  
14 would be fine to break now if you would like.

15 MR. BLAKE: What is your expectation, that  
16 you would be another half hour or so?

17 MS. BERNABEI: I don't know.

18 MR. BLAKE: You can't make one?

19 MS. BERNABEI: Maybe 20 minutes.

20 MR. BLAKE: Okay. Thanks.

21 JUDGE LINENBERGER: Let me just observe for the  
22 sake of accuracy here in the record and in people's minds  
23 that the term millirem and the term rem is not a term  
24 associated with releases. Please, let's keep that in mind.  
25 If people don't know how to distinguish between releases and

Sim 19-7

1 doses, all right then acknowledge that before getting  
2 into the discussion. But to call a rem value a release, I  
3 have to point out is not correct.

4 JUDGE SMITH: All right, anything further  
5 this evening?

6 MR. BLAKE: Only that I will provide notice  
7 to the Board, and I will do it now on the record, with  
8 regard to Mr. Herbein's past testimony on incore thermocouples  
9 that the Kemeny Commission interview where Ms. Bernabei  
10 referred to page 15, I would refer as well to the subsequent  
11 page, page 16 and to page 76.

12 With regard to the item in the Joint Mailgram  
13 Exhibit No. 82 where there was a reference to page 17 by  
14 Ms. Bernabei, I would provide notice of an intention to  
15 refer to page 25 as well.

16 And with regard to another item which Ms. Bernabei  
17 did not refer the witness to, Item No. 120 in the Joint  
18 Mailgram Exhibit on the same subject, I would refer in that  
19 item to pages 30 to 33.

20 That is it.

21 JUDGE SMITH: All right. We are adjourned.  
22 We will meet tomorrow at 9 a.m.

23 (Whereupon, at 5:27 p.m., the hearing adjourned,  
24 to reconvene at 9:00 a.m., Thursday, December 6, 1984.)

25 \* \* \* \* \*

NRC TRANSMITTAL RECEIPT

WORK ORDER NO.: NRC LB-85-

ACE-FEDERAL CONTROL NO.:

NAME OF PROCEEDING: Metropolitan Edison Company  
(Three Mile Island Nuclear Station,  
Unit 1)

DOCKET NO.: 50-289-SP

HEARING DATE: Friday, November 30, 1984

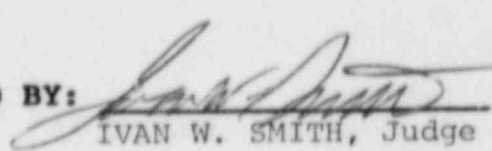
LOCATION: Harrisburg, Pennsylvania

PAGES: 29,979 TO 30,108

EXHIBITS FORWARDED

TMIA Exhibits 18 and 19

RECEIVED BY:

  
IVAN W. SMITH, Judge

DATE:

December 5, 1984, Wednesday

CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceedings before the  
UNITED STATES NUCLEAR REGULATORY COMMISSION in the matter of:

NAME OF PROCEEDING: Metropolitan Edison Company  
(Three Mile Island Nuclear  
Station, Unit 1)

DOCKET NO.: 50-289-SP  
PLACE: Harrisburg, Pennsylvania  
DATE: December 5, 1984, Wednesday

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

(Sigt) *Garrett J. Walsh, Jr.*

(TYPED)

GARRETT J. WALSH, JR.

Official Reporter

Reporter's Affiliation  
Ace-Federal Reporters, Inc.

*Mary C. Simons*  
MARY SIMONS  
Official Reporter  
Ace-Federal Reporters, Inc.

*Myrtle H. Traylor*  
MYRTLE H. TRAYLOR  
Official Reporter  
Ace-Federal Reporters, Inc.