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NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

THREE MILE ISLAND SPECIAL
INQUIRY DEPOSITION

DEPOSITION OF:

HAROLD DENTON

Place - BETHESDA, MD.

Date - Tuesday, October 23, 1979

Pages 1 - 100

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THREE MILE ISLAND :
SPECIAL INQUIRY DEPOSITIONS :
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DEPOSITION OF HAROLD DENTON

Room P-404
Phillips Building
7920 Norfolk Avenue
Bethesda, Maryland

Tuesday, October 23, 1979
9:00 a.m.

BEFORE:

For the Nuclear Regulatory Commission:

WILLIAM BALLAINE, TMI/NRC Special Inquiry Group
ROBERT BERNERO, TMI/NRC Special Inquiry Group

C O N T E N T S

WITNESS:

EXAMINATION

Harold Denton

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P R O C E E D I N G S

(9:00 a.m.)

1
2
3 MR. BALLAINE: Mr. Denton, this is a continuation
4 of the deposition started October 4, 1979. Mr. Denton, I
5 will remind you, you are still under oath.

6 Whereupon,

7 HAROLD DENTON

8 resumed the stand and, having been previously duly sworn,
9 was examined and testified further as follows:

10 BY MR. BALLAINE:

11 Q Mr. Denton, during the initial deposition we got
12 to the point of discussing the first evacuation
13 recommendation that was made by the Chairman, Chairman
14 Hendrie, to the Governor of the State of Pennsylvania.

15 My first question will relate not to that time but to the
16 time when the Chairman made another recommendation to the
17 Governor; at least another one was made in a conversation
18 involving those two.

19 That recommendation was for the evacuation of pregnant
20 women and pre-school children. Do you remember when it was
21 that you first heard that such a recommendation had been
22 made, on Friday, March 30, 1979?

23 A No, I'm afraid at the moment I don't remember.
24 Maybe if I think about it, it will come back to me. Things
25 were so hectic that morning, I just don't recall now when

mgc/MM 1 I first heard of the recommendation that had been made.

2 Q If it helps you at all, I think you may have
3 already heard that you were to go up to the site to take
4 over lead responsibility. And what I am trying to determine
5 is if you heard about the second recommendation after you
6 were already on route to the site, or whether you recall
7 being aware of the recommendation when you were still
8 somewhere in the Washington area?

9 A I just can't recall at the moment when I first
10 heard.

11 Q Okay. To the best of your recollection, had
12 members of your staff ever discussed that Friday morning the
13 possibility of recommending an evacuation involving just
14 pregnant women or pre-school children?

15 A No. I don't think I had discussed that with my
16 staff at all.

17 Q There are some indications from the testimony that
18 apart from your conversations on the telephone that morning
19 with Chairman Hendrie and other Commissioners, that you may
20 have been responsible for sending a note to the
21 Commissioners making some kind of a recommendation for
22 evacuation. Do you have any recollection as to doing
23 something like that, perhaps when you were preparing to go
24 up to the site, sending on a communication to the effect
25 that you were still in favor of evacuation or something like

mgcMM 1 that?

2 A No, I don't.

3 Q Is it your best recollection that the only
4 recommendations you made would have been during telephone
5 conversations involving staff people at the IRC and the
6 Commissioners on the telephone in the early hours after your
7 heard about the 1200 MR reading?

8 A I did leave the incident response center after I
9 had been asked to go to the site by car, and there was a
10 telephone in the car, so I could have had some
11 communications through that telephone. It might not have
12 been recorded. But I don't recall writing or signing any
13 memos to the Commission about evacuation.

14 Q Do you have any recollection of having talked to
15 any of the Commissioners when you were in the car that had
16 the telephone?

17 A I do remember conversations in the car. I think
18 they were back to the response center rather than to the
19 Commissioners.

20 Q What was the substance of them, as best you
21 recall?

22 A I remember being informed while in the car about
23 the hydrogen spike. That's one item that sticks in my mind.

24 Q Do you remember talking with the incident response
25 center people again about evacuation?

mgcMM

1 A No. Since I didn't -- since I don't remember
2 continual discussions about it, I must have known before I
3 went to the site what the results of the conversation
4 between the Chairman and the Governor were and had accepted
5 that as a state of affairs and then turned toward what I
6 should do, once I got to the site. I think if I had -- if
7 it had still been up in the air in my mind about what was
8 going to happen, I would have had more memory of the
9 situation.

10 Q Okay. In any event, I take it you don't remember
11 when you were in the car sending back some communication
12 urging -- saying or reinforcing the earlier recommendation
13 for evacuation that had been made to the staff.

14 A I don't remember it. No.

15 Q You had talked with Dr. Mattson at various times
16 Friday morning. Did he ever tell you in substance that
17 morning before you went to the site that one of his great
18 concerns was that the licensee might depressurize and that
19 if they depressurized, that would create a serious problem
20 because of the hydrogen bubble?

21 A Yes, I remember his telling me that.

22 Q Do you remember any conversations in which he
23 specifically discussed the fact that he wasn't really sure
24 whether the licensee was going to depressurize, and that
25 really was the root of his concern about all this, that he

mgcmm 1 couldn't predict what the licensee was going to do?

2 A I think my discussion with him was more on the
3 consequences of depressurization than it was on the lack --
4 I just don't remember being greatly concerned that the
5 licensee was about to depressurize that morning as much as,
6 if he chose to, here are some of the potential consequences.

7 Q During the conversations with Dr. Mattson, did you
8 have some reason to believe that there was a telephone link
9 to somebody at the utility who would be in a position to
10 receive a communication from you people saying, "Look,
11 whatever you do, don't depressurize?"

12 A I was aware of the fact that we had an inspector
13 at the site on the other phone, but Friday morning I was not
14 generally aware of any other links with the management of
15 the utility.

16 Q Before you left for the site, was there any
17 conversation about all the need to get a link with some
18 management official at the utility, so that it could be made
19 quite clear to them Dr. Mattson's concern among others with
20 respect to what should and shouldn't be done with the
21 reactor?

22 A Exactly when that became clear, I'm not certain.
23 But it's a commonly held view, sometime after that Friday,
24 that's one of the first things we should do in future
25 accidents, is get in touch with the Plant Superintendent and

mgc/MM 1 be sure that we're getting information from him on what his
2 plans are. But where that first originated, I don't
3 remember.

4 Q I guess I'm still trying to understand why --
5 whether we're talking about something that just didn't occur
6 to people or whether there may be another reason that just
7 doesn't automatically come to mind but really is there that
8 might well explain why you wouldn't necessarily be just
9 getting on the phone and getting in touch with senior
10 officials.

11 I don't know if you've got any thoughts on that.

12 A Well, if it's a technical problem with the
13 licensee and we haven't activated their response center and
14 it's something that's called to our attention by the
15 utility, that they just had some kind of problem, it's quite
16 common for NRR to call the plant and talk to the plant about
17 what's happening. I think somehow, perhaps, the structure
18 of the response center and the way things operated -- maybe
19 people took for granted to be the correct channels to go
20 through -- and we didn't.

21 Also I think that people understood that there were so
22 many phone calls being made, that one more phone call
23 outside channels would just burden the people at the site
24 more. But I don't know why we just didn't call the company
25 directly.

mgcMM

1 BY MR. BERNERO:

2 Q May I interject here? Mr. Denton, what we're
3 seeing from all of the depositions and the study of the
4 record that we have done is pervasive throughout the staff,
5 an unwillingness, an apparent unwillingness, to speak to
6 someone in charge at the site about not depressurizing or
7 getting a more firm body of information, whatever it might
8 be. And we're groping for some systematic explanation of
9 this.

10 Now you just touched on one possibility -- that perhaps
11 the entire staff was trying to work with incident response
12 center's structure and bring all of its concerns up to the
13 EMT. When you were in the EMT in those first few days, did
14 you feel that the staff was indeed doing that -- not
15 gathering information independently but coming to the EMT to
16 seek improvement in information or contact with the site?

17 (Pause.)

18 A I think the original role that had been perceived
19 for the EMT was one of information transmittal, of
20 monitoring the operations as opposed to trying to direct and
21 control operations at the site. And the original emphasis
22 was put on sort of listening to a stream of consciousness
23 coming back from our people at the site and interpreting
24 what was happening as opposed to playing an active role in
25 what was happening.

mgcMM

1 So I think it was sort of the passive role, and also it's
2 hard to recreate the day, the constant demands that were put
3 on to the EMT just for the passage or the transmittal of
4 information. The whole structure imposed on the EMT was
5 quite a burden for transmitting this information out.

6 Q You mean to the Congress and the press?

7 A All parties, all parties that wanted information
8 from the EMT.

9 BY MR. BALLAINE:

10 Q Including the Commissioners?

11 A The Commissioners and our own staff -- just
12 everyone wanted to know what was happening, and so that was
13 almost a full time task for people, just to disseminate
14 information as it was collected, as opposed to the view
15 today that we ought to have that function and also have a
16 function for analysis and diagnosis of what is going on and
17 a willingness to take an active direct role in decision
18 making if necessary.

19 I think that's why -- maybe the underlying reason why
20 someone didn't get on the phone and talk to the plant
21 directly. If there had not been an EMT, if there had just
22 been a "Report something back to NRR", we would have
23 normally called the licensee back, but when I think you have
24 the EMT and everyone recognized the extreme burdens being
25 placed upon the communications network as it was, no one

mgcMM 1 wanted -- apparently no one felt an obligation to go call
2 the plant's super, recognizing that he was already snowed
3 under with information requests, and were going through the
4 other channel.

5 Q Mr. Denton, on the eighth page of your interview
6 which has been marked as Exhibit 5090, you indicate that
7 when you went to the site, you were going up to take your
8 normal role as head of the safety review of the plant. You
9 added that you didn't even perceive of the coming press
10 aspect when you went to the site.

11 What specifically were you told would be your functions,
12 if you were told anything at all?

13 A I think I was told to take charge of NRC
14 activities at the site, the best I can remember the
15 Chairman's directive. But I don't recall any more specific
16 directives than that.

17 Q Now when you went up, did you have any belief as
18 to whether you would take with you some authority to make
19 further evacuation recommendations -- and I do mean you as
20 opposed to the Commissioners or the EMT back in Bethesda.

21 (Pause.)

22 A No, I don't think that issue had been addressed.
23 I think if I had felt the need to make further
24 recommendations once I arrived on the scene, I would have
25 done so back through the Commission again. By that time,

mgcMM 1 the Commission had been involved in making the original
2 ones.

3 Q You just touched on my follow up question. What
4 did you think that your role would be vis-a-vis the EMT
5 after you arrived at the site -- that you would replace the
6 EMT and go to the Commissioners, that you would have to
7 report back to the EMT which would in turn report to the
8 Commissioners? What was your belief as to the relationship
9 with the EMT?

10 (Pause.)

11 If you have one?

12 A I didn't have a firmly defined view on that topic
13 when I left Bethesda. After I had gotten to the site, I did
14 quickly come to believe that the important decision should
15 be made at the site and that we should rely on the EMT to
16 continue the transmittal of information aspects and do
17 detailed calculations. But I found that I was in a much
18 better position to understand and make recommendations about
19 things once I was at the site and getting firsthand
20 information than I was back in Bethesda, operating on
21 fragmented information. So I think over the few days, maybe
22 even a smaller time interval, my perception about the role
23 of the EMT changed.

24 And it was kind of -- it was a changing posture that was
25 forced on to me by circumstances. It was not one which was

mgcMM 1 well-defined before I left.

2 Q Yes. You indicated after you got to the site, you
3 quickly came to believe that the NRC should rely on the
4 people at the site. Was this primarily because you found
5 that the quality of information that you had with respect to
6 the situation just markedly improved after you arrived, or
7 was there some other reason for your quick -- your
8 quickly -- your belief?

9 A I think it goes to a reduction of uncertainty,
10 that in the EMT you don't have a full picture of what's
11 really going on in the plant. You are getting bits and
12 pieces of information portrayed back to you. And when I
13 went to the site, I took along my senior technical staff and
14 people that I worked with normally and trusted for
15 appraisals.

16 When they were able to come back and brief me on how they
17 saw the situation and the reliability of the mode of cooling
18 that was there or the lack of reliability, I just felt much
19 more comfortable with my understanding of the status of the
20 plant than I did back at Bethesda.

21 Q When you went up to the site, did you have any
22 plans or intentions with respect to what the relationship
23 would be of your people with the utility people who were
24 actually in the control room?

25 A No plans. No.

mgc/mm

1 Q Did you discuss setting up some kind of
2 concurrence chain so that any substantial action taken by
3 the licensee in trying to bring the reactor to cooldown
4 would have to be approved in advance by NRC personnel,
5 something like that?

6 A We didn't have nearly the structured approach for
7 these kinds of things when we arrived. But I think by
8 Saturday or so, we had all concluded that we should be in
9 the concurrence mode, and I believe we got that system set
10 up by Saturday.

11 Q You think that did not happen right away on
12 Friday, to the best of your recollection?

13 A It may have been put in place by some of my staff
14 who insisted on it in given areas, but I don't remember
15 having focused on that aspect of the situation.

16 Q Is this something that you specifically did focus
17 on on Saturday, or are we talking about some sort of natural
18 evolution? I'm wondering whether there did come a time when
19 there were specific conversations about setting up a
20 concurrence chain of some kind.

21 A Yes, it did become a focus of concern to me, and I
22 discussed it with the plant management. And I think that
23 was on Saturday, and I did achieve an understanding with
24 them that they wouldn't make any change in the status of the
25 plant without the approval of some NRC person.

MM ros 1 Q Okay. We'll get back to those series of
2 conversations later on.

3 When you arrived at the site, was it your plan to take
4 over all supervision of all personnel, including I&E personnel
5 who were already at the site?

6 A The word "plan" implies far too much structure.
7 You know, I was sent to the scene of an accident posthaste,
8 as fast as I could get there. And questions like this did
9 not even -- they were not anywhere near the top of my
10 concern. My concern was with the status of the core, the
11 control, and the releases that would occur, the actual
12 off-site doses. Getting those kinds of things in some of
13 the administrative organizational lines were just far
14 submerged.

15 I knew the Region 1 director very well, Boyce Greer. We
16 were old friends. I assumed I think from the beginning, that
17 he and I would get along fine and that he would direct his
18 staff in doing what he traditionally did, and that we would
19 work out things as we went along.

20 Q Did there come a time, by the way, when you did
21 start to focus more on this particular organizational
22 question of perhaps integrating the I&E personnel already at
23 the site? Or did that remain under Boyce Greer's direction?

24 A They remained under his direction. We never did
25 integrate the two completely. But we would attend each

MM ros 1 others staff meetings, as I recall; and whatever they wanted
2 us to focus on, we would. And if we wanted some
3 measurements from them in the environmental side, they
4 would.

5 But they functioned as a separate unit pretty much the
6 whole time.

7 Q Well, obviously we hope there will never be such a
8 thing; but assuming another TMI in the future, would you, in
9 light of TMI, retain that kind of tandem structure between
10 I&E and NRR? Or would you try to integrate them?

11 A I would definitely integrate it up. I think it
12 should be an NRC activity. And at Three Mile Island now we
13 have put into place, I think, a management structure that
14 recognizes it's an NRC recovery team. And we have appointed
15 a director and a deputy kind of thing, and have blended the
16 two staffs together so that they can perform cooperating
17 functions and don't go up separate lines.

18 Q When do you think that first happened in
19 connection with this long-on-going TMI response of NRC?

20 A It's been a source of some concern between the two
21 groups, I think, as to who has the responsibility for what.
22 And traditionally, NRR has the responsibility for doing
23 reviews and issuing the license, and I&E for enforcing the
24 license.

25 And I think this led to some confusion of roles in this

MM ros 1 accident because it quickly got beyond the bounds of the
2 license for this plant.

3 Q But you indicated there has, you think, now been a
4 blending, I think, to use your word, of NRR and I&E.

5 When do you think this finally happened, since we're now
6 talking a number of months since the incident?

7 A I think it just evolved as the people came to know
8 each other and the task. And part of it was physical
9 separation. It's like the impact of physical separation on
10 the offices today, where standards is in one place and
11 research is in the other. Even with the best intent of
12 office directors, it's very hard to keep our staffs well
13 coordinated.

14 And at the island we did end up with I&E in one trailer
15 and NRR in another trailer. And people didn't have a
16 personal relationship established that is really needed to
17 make it function.

18 And I think it alerted me to the possibility that, for
19 example, even if a licensee has contracts with a strong
20 consultant for advice in the event of an accident, it's not
21 like having that advice on your own utility staff, for
22 example. Because bringing in any new group of people, if
23 you don't have a personal relationship established, it takes
24 a while to gain the confidence and the cooperation of each
25 group.

MM ros 1 Q Maybe the answer is you just can't answer the
2 question. But I'm saying, when --

3 A I don't really know that there was any real time
4 there --

5 Q No organizational decisions, for example, made on
6 April 10th? We said, "Look, organizationally we're
7 restructuring it."

8 A I think it didn't happen until much later than
9 that. It's probably been in the last 60 or 90 days after
10 Vic Stello was selected to head the I&E office did we begin
11 to work out some sort of formal office structure at
12 Middletown.

13 Q Okay. Now, you have indicated in prior testimony
14 that on the trip up, I think, you and Mr. Stello, maybe
15 others, tried to set up a little structure with four teams
16 in it.

17 Apart from the leaders -- there were leaders designated
18 for each of the four teams; is that right?

19 A Yes.

20 Q Apart from those leaders, who was the person or
21 persons that were above the leaders, responsible for
22 integrating the information of the four people the way it
23 was set up originally?

24 A It was a continually evolving organization,
25 because we shifted people around. But the original

MM ros 1 idea was that we would have a leader and an alternate leader
2 for each one of the four groups; and that they would work
3 alternate shifts; and that they would report to either Vic
4 or I, depending on what shift they were on.

5 So Vic and I were the nominal leaders. I was working
6 sort of the day shift and Vic was working the night shift.

7 Q Am I correct in my understanding that the problem
8 with that became that you were simply too busy --

9 A Yes.

10 Q -- attending to other things, so Vic Stello wound
11 up having to be the boss in your place when you were going
12 to be the boss?

13 A That's right. It quickly ended up with Vic
14 working around the clock. And we did subsequently modify
15 the structure by bringing in, I think, Denny Ross and Dick
16 Vollmer as sort of the nominal day-to-day, shift-to-shift
17 coordinators and leaving Vic and Roger Mattson to be the
18 nominal decision making heads. And my role got to be the
19 one of spokesman for the agency, after a few days.

20 Q Putting aside this issue of integrating I&E and NRR
21 that we've already talked about; in the event of another TMI
22 do you think that the way you have structured your team that
23 went to the site was a good way? Or are there some other
24 suggestions you would have for tinkering with the way it was
25 set up.

MM ros 1 (Pause.)

2 A We did tinker with the way it was set up daily. I
3 guess I'm in favor of some advance planing, and would do
4 more than we had done before TMI. But situations like that
5 are so fluid, and the areas in which you have got to give
6 emphasis flare up and go down with such rapidity you can't
7 have just one structure.

8 We worked -- everyone really worked day and night the
9 first couple of days, and you can't maintain that level of
10 effort over a long period. And we ended up having to bring
11 more people into the organization, and give some people a
12 chance to rest some.

13 I'm sure with some thought I could draw up a better
14 structure than I had up there.

15 Q All right. I take it though, that there are no
16 particular structural recommendations that you think would
17 be important to have laid out in advance, in the event that
18 you ever had to send another team of people up to an
19 incident and a situation like the TMI situation?

20 A Well, they are. But they're not ones I would want
21 to just give you off the top of my head. They would take
22 more thought. There's not an obvious defect.

23 We soon had enough people at the site. I think by Sunday
24 night there were over 100 NRC people at the site between I&E
25 and NRR. And with that many people, it did begin to take

MM ros

1 an organization to decide who is going to be where in the
2 plant, who reports to who. And I think with the exception
3 of integrating I&E fully into the chain, it worked out
4 fairly well to pass information along.

5 Q Are there any glaring errors that you made the way
6 you originally planned this, set things up when you went to
7 the site, that you fairly rapidly learned just couldn't
8 work?

9 Putting aside numbers, I'm just wondering if there were
10 some things that sounded good to you as you were going up,
11 and just absolutely didn't work; and may be something to be
12 avoided in the future.

13 (Pause.)

14 A One of the immediate problems I recall having was
15 this role of just transmitting information again. I
16 remember being frustrated on Saturday that I couldn't get
17 off the phone with people in Washington who needed to know
18 what was happening. And if you can only get it from the top
19 person at the site, then I would not have information -- to
20 meet with the staff to get the information to pass along.

21 So I guess one lesson I have learned is you need separate
22 channels for routine transmittal of information. And you
23 need to preserve some time for the top management to use to
24 sit back and diagnose and analyze what's happening.

25 And there was a tendency I think all along, in the early

MM ros 1 part of the accident, to place this burden on either the EMT
2 or me, until we just realized that it just wouldn't work
3 that way.

4 Q Just out of interest, let's get a little laundry
5 list of the kind of people you wound up providing
6 information to: the President of the United States; the
7 governor of the state; the staff of the governor, other than
8 the governor himself; other staff members of the White
9 House?

10 A Yes.

11 Q The commissioner or other commissioners back in
12 Washington?

13 A Yes.

14 Q Who else beyond that? I suppose you had to be --
15 well, you tell me.

16 A Congressmen from that area.

17 Q You also provided -- you yourself wound up being
18 responsible --

19 A They would visit the site.

20 Q Obviously you were also responsible for the
21 various press interviews and briefings?

22 A (Nodding affirmatively.) I think you have about
23 covered the groups.

24 There were a lot more of the infrastructure in each one
25 of those things. In other words, if you would go to the

MM ros 1 White House, for example, I had a nominal contact with
2 Barbara Matthews and she would either call me or I would
3 call her almost hourly. And then there were various people
4 that, after she had talked to, would call me for additional
5 clarification.

6 Q From the White House?

7 A From the White House. Somewhat the same thing in
8 the governor's office. I would talk to the governor, or
9 some of his staff, and these conversations would invariably
10 lead to other conversations as the information we would
11 relate would filter down the staff. Someone would need more
12 details or another number. And somewhat the same way with
13 the commission.

14 Occasionally I'd have to talk to somebody on my own staff
15 to get a number or get them to call me back with a number.
16 There was just a constant stream of the phone ringing off
17 the hook.

18 And then there were demands also to meet with my own
19 staff over problems that they saw developing, and those
20 decisions to be made.

21 Q On Friday you had various conversations with the
22 President of the United States, and also Mr. Brzezinski; is
23 that right? Do you remember such conversations on Friday?

24 A I don't recall a conversation with
25 Mr. Brzezinski.

MM ros 1 Q Okay. Do you recall a conversation with the
2 President after you arrived at the site?

3 A Yes.

4 Q Did you just have one on that day after you
5 arrived at the site?

6 A No, I feel certain it was more than one.

7 Q Why don't you just tell me as best you can recall
8 what the substance of these conversations were the President
9 after you arrived at the site?

10 (Pause.)

11 A I think the first one I took in a private
12 residence. And I think that's the one where he told me that
13 he would make the full resources of the Federal Government
14 available, to tell it like it was, and to get back to him as
15 soon as I had a better understanding of the situation.

16 Then I feel certain he did call me back sometime Friday,
17 or his staff did, and we soon evolved into calling him twice
18 a day at 7:45 and 3:45. And he would occasionally call me
19 at other times when he would receive some information that
20 he was interested in.

21

22

23

24

25

Mm ros 1 Q Now, I think sometime on Friday you spoke with the
2 commissioners by telephone after you arrived at the site.
3 And according to page 118 of the NRC meeting transcript, you
4 indicated that their people -- and I think you're referring
5 to the utility people -- do seem to be quite aware of the
6 same kinds of problems that we were having this morning.

7 I have always interpreted this to mean that, lo and
8 behold, when you arrived at the site you found out that the
9 utility was very much on top of the same problems that you
10 people were worrying about, but didn't know the utilities
11 was on top of before you got to the site.

12 Is that a fair reading of what was in your mind? And if
13 not, what do you think was your impression as respects the
14 recognition of the utility people?

15 A I don't know. I'll have to see it.
16 (Counsel handing document to witness.)
17 (Witness reading document.)

18 A Well, looking at the one or two pages preceeding
19 the page you pointed out, and I think what I was trying to
20 reflect back to the commission is that I had met with
21 Herbine and Arnold, and maybe a few other utility people,
22 after arriving at the site; and found that they were
23 thinking about things such as loss of the condenser vacuum,
24 what would you do in the plant if that were lost, and what
25 would you do if there were loss of off-site power. And

MA ros 1 that they were concerned about off-site doses.

2 And I think when I left to go to the site I didn't have
3 any feel that they had even thought about those kinds of
4 problems before; and that the information we were getting
5 back in Washington was more physical parameters and plant
6 conditions, than they were plans and programs of the
7 utility.

8 Q Do you remember whether, after your initial
9 conversations on the site with utility people, you concluded
10 that there were any particular problems that were of
11 significant concern to you that the utilities had not
12 thought of?

13 A About all I can remember today is that I didn't
14 think they had given enough attention to various
15 contingencies; and that while they might have a thought in
16 their head on what they would do if this pump failed or that
17 pump stopped, there was nothing in writing and no
18 procedures.

19 And I remember making a big push to get some written
20 contingency plans, even if they were just skimpy, and basic
21 outlines so that there would be some piece of paper for the
22 operators to turn to if there were subsequent failures of
23 equipment.

24 Q Now, after you arrived at the site, I think
25 according to one of the transcripts we have, you indicated

MM ros 1 that based on whatever you had seen or heard on site, you
2 did not believe that there was a need to evacuate; is that
3 correct?

4 A That's correct.

5 Q Okay. Now what was -- it's fair to describe that,
6 I think, as a change of opinion over the course of the day,
7 isn't it?

8 A Yes, I do change my mind.

9 Q What happened? What was the basis for your
10 changing your opinion?

11 Being as specific as you can, were there certain pieces
12 of information that came in that made you change your mind?
13 Or was it just some different general impression? Or what?

14 A I guess it was the fact that the status of the
15 core was stable. The core was -- the water level was back
16 up in the core. It was being cooled through the steam
17 generator. And my staff had looked at the configuration of
18 the plant and felt it could be reasonably expected to stay
19 cooled in this configuration.

20 And we had also looked at the containment; found it was
21 under negative pressure, it wasn't leaking through sneaked
22 paths; and that the leakage from the letdown system and the
23 radioactive waste pathways in the auxiliary building seemed
24 to be something that could be brought under control by
25 actions such as changing the filters pumping back the

MM ros 1 gases that were in the tanks.

2 And also based on a briefing by I&E on what sort of
3 off-site doses they were finding; the fact that these doses
4 were, in fact, reasonably low. And I guess by that time I
5 had some confidence that we could preserve and improve the
6 status of the core from there on out.

7 Q Before you went up now, I take it you were
8 uncertain as to whether or not the core was in a stable
9 condition?

10 A I think that's a fair characterization. My
11 perception certainly had been one -- had changed from
12 Wednesday and Thursday of fuel damage, but not extensive
13 fuel damage, to one of Friday of a very serious accident.

14 Then, by the time I arrived at the site, my perception
15 was, yes, there had been extensive fuel damage, but things
16 were contained and the accident was over in the sense of no
17 more fuel damage was occurring, and we could maintain that
18 state.

19 Q Do you think that something -- knowing what you
20 know today -- was it something that happened between Friday
21 morning and Friday afternoon that could give you the
22 confidence that the core was in a stable situation? Or was
23 it simply that you finally became aware of facts that also
24 were there, could have been made available Friday morning
25 that would have given you the same comfort Friday morning

MM ros 1 if you had had all those facts available?

2 A It's not just facts and just my perception of
3 them. I rely heavily on a very competent professional
4 staff. And I don't think they were -- they weren't feeling
5 all that comfortable Friday morning when I talked to some of
6 the same people that went with me. And after getting the
7 people up to the site and having them look into their
8 various areas that they're specialists in, and finding that
9 they were much more convinced of the stability of the
10 situation.

11 So I don't want to project that I'm sole reviewer of a
12 fact. I was projecting the image that I was getting from my
13 professional staff after having seen the patient themselves
14 that --

15 Q But had the patient's condition changed, in
16 retrospect?

17 A No, I don't think the patient's condition had
18 changed. But our perception of it certainly changed.

19 Q All right.

20 By the way, before you went to the site you did at least
21 know that one of the causes of the radiation readings was
22 leakage in the letdown system?

23 A I doubt if I knew that. It was very hazy Friday
24 morning as to exactly what the cause was. I sure didn't
25 know it when I first got the report. And I think we may

MA: ros 1 have gotten some reports about it was the letdown system or
2 a waste gas decay tank.

3 But actually I think it took some time before we pinned
4 down the cause.

5 Q Now, according to the transcripts, at various
6 times Friday there was an effort made involving you and the
7 commissioners, among others, to try to coordinate briefings
8 of the press. Is that a fair statement?

9 A Yes, I think there were.

10 Q Friday afternoon, shortly after you arrived, or
11 sometime late Friday afternoon, you had a short briefing
12 with the press; is that right?

13 A (Nodding affirmatively.)

14 Q At or about that time, did you know that there was
15 going to be a briefing out at Bethesda by the staff, of
16 newspeople?

17 A No, I didn't.

18 Q Okay. You did believe, I guess, at the time that
19 maybe Chairman Hendrie was going to have some kind of
20 briefing; is that right? Or what is your best recollection?

21 A I really don't think I was even aware -- that was
22 furthest from my thought what was going on back in
23 Bethesda. I was completely engrossed in the site, so I
24 don't recall even being aware of a briefing in Bethesda at
25 the time.

MM ros 1 It was really Joe Fouchard who insisted that I leave the
2 house I was meeting in and go out and meet with the press
3 just briefly after I arrived at the site to tell them why I
4 was there and what I would be doing. I think up to that
5 point I had not really given any thought to the question of
6 informing the press and the public in that kind of role.
7 And he was the principal motivator to get me out for that
8 five minutes and subsequently.

9 Q Okay. According to the NRC meeting transcript for
10 March 30, again referring specifically to page 209, there
11 was a conversation you had on the telephone sometime -- I
12 think we've got it at about 7:15 p.m., and among the parties
13 are you and Mr. Gossick.

14 And you said at the time -- and again, you're welcome to
15 read in front of and behind this -- but you said, "The
16 utility is a little shy, in my view, of technical talent."
17 You go on to say, "We outnumber them. They are pretty
18 thin."

19 I take it that as early as sometime Friday you did
20 develop -- start to develop some opinion as to the technical
21 inadequacy of the utility. I wonder if you could elaborate
22 a bit on what you perceived at the time to have been the
23 specific inadequacies of the technical capability of the
24 utility?

25 (Handing document to witness.)

MM ros 1

(Witness reading document.)

2 A In normal NRR reviews the role of our staff is
3 they ask the utility experts questions about their design,
4 and the utility experts produce the results of calculations
5 or analyses and demonstrate their views. And I think by
6 Friday, in my conversations with my staff about what was the
7 size of the bubble or what was the cause of the release, or
8 what -- you know, asking my staff specific technical
9 questions, I was getting no feeling that they had asked the
10 utility this, because only the utility has the detailed
11 knowledge to do these kinds of calculations.

12 And my staff was responding that the utility wouldn't
13 answer, you know, what was the volume of -- a simple
14 question like: what's the volume of a containment? Or,
15 what's the location of the lowest safety grade
16 instrumentation in the containment. Questions that you
17 could only get from the designer of the plant. He was not
18 able to answer. And questions that you would normally
19 expect him to have calculated.

20 I don't recall what the specifics were, but I think from
21 my own contacts with him I was beginning to find that I was
22 always talking to the same people in the utility and that
23 they were not able to produce this expert and that expert,
24 as I would have expected them to do.

25

MM ros 1

BY MR. BERNERO:

2 Q Mr. Denton, I would like to take this opening to
3 go into a series of questions related to industry support of
4 the licensee, following your identification of this problem.

5 On Friday, March 30th, that night, or Saturday morning,
6 March 31st, did you did you speak with Herman Dieckamp, the
7 president of GPU, about the need to get industry support in?

8 A Yes, I did.

9 Q Can you identify more accurately whether it was
10 Friday night or Saturday morning, the time?

11 A I think it was Friday night. I'm pretty certain
12 it's Friday night, but I don't have a positive --

13 MR. BALLAINE: Would it have been before, by the
14 way, the conversation that you just talked about, that's
15 reflected in the transcript?

16 THE WITNESS: No. My recollection is it was
17 sometime perhaps between this discussion and that press
18 conference.

19 I also remember trying to call the Chairman of the Board,
20 William Kuhn, who was Dieckamp's nominal supervisor. And I
21 think found that he was in the hospital recovering from a
22 retinal detachment. So that's why I ended up talking -- I
23 think up to that point I had not met Mr. Dieckamp.

24 BY MR. BERNERO:

25 Q You did not know Mr. Dieckamp prior to this time?

MM ros 1 Q No. I think the people I met originally at the
2 site were Herbein, and then Arnold, and then Creitz. And
3 then deciding I would call their supervision and I was going
4 to start at the top with the chairman of the board, and he
5 was not available somehow. And I think I had the first
6 phone call with Mr. Dieckamp, but I had never met him up to
7 that point.

8 Q When you spoke to Mr. Dieckamp, did he indicate to
9 you that he had already initiated anything in the way of
10 getting industry support to GPU/Met Ed?

11 A My recollection is that he supported the idea and
12 way sympathetic and was going to try to improve it; but that
13 I didn't come away with any real feeling of quick action.

14 Q You just used the word improve it. Are you saying
15 that -- did he indicate that he was already doing something
16 and would undertake improvement of what he was doing, based
17 on your recommendation?

18 A I think he did say that he had B&W doing
19 calculations on something like this, that he was doing
20 something. But whatever it was, I didn't find very
21 reassuring as in sufficient depth or scope.

22 Q When you spoke to him, were you speaking in the
23 line of NRC telling them to do it, or that NRC was informing
24 GPU that NRC was going to do something independently?

25 A Neither. I think at the time I was just

MM ros 1 inquiring of him what his plans were and letting him know
2 that we had all these questions that he couldn't answer.
3 And I recall having talked to some people at B&W during that
4 day, and seem to have come away with the feeling that B&W
5 was also in a response mode, that they were answering their
6 phone calls, but seemed to know even less about critical
7 parameters than we did before I left Bethesda.

8 Q Did you identify problems to Mr. Dieckamp of a
9 specific nature, such as the ones you just discussed
10 earlier?

11 A I probably went somewhat deeper with Mr. Dieckamp
12 than I described then, since I was closer to it at the
13 time. But I doubt if I gave him specific technical
14 problems. But I recall having discussed areas with him.

15 Q Specific areas where there seemed to be a need for
16 outside or technical support of some sort?

17 A Yes.

18 Q In that conversation then, how did it end? Did
19 you then say, "Well, we expect you to do something," or "You
20 will go do something"?

21 How did you end that? What position was NRC in with
22 respect to GPU at the end of that conversation?

23 A I guess in that conversation it was more of an
24 inquiry, "What are you planning to do?" And I seem to have
25 had the feeling that whatever they were doing was not

MM ros 1 sufficient, and that while they did have some plans and
2 something was going on, it just didn't satisfy me.

3 I didn't direct him to do any more.

4 Q So the conversation ended with a feeling that
5 although they were attending to the problem, you weren't
6 very hopeful that they were doing a lot?

7 A I guess I would have to characterize that phone
8 call as an information gathering phone call; and getting an
9 answer that really didn't satisfy me and not knowing what
10 the next course of action would be when I terminated that
11 phone call.

12 Q Okay, let me ask some specific questions about
13 what was in your mind then, with respect to this outside
14 support.

15 Did you have any concept of how such support might be
16 integrated into the response effort? I'm particularly
17 thinking of, did you expect that that outside support would
18 be put at the disposal of NRC to answer these questions? Or
19 primarily put at the disposal of GPU/Met Ed?

20 A It was the latter. I wanted GPU to get in the
21 mode where they could answer any question my staff raised,
22 to get in a more normal mode of NRC licensee review.

23 Q At that time, were you still thinking in terms of
24 GPU/Met Ed using their contractors, in other words, Burns
25 and Rowe, B&W, the people who had been directly involved

MM ros 1 in the plant? Or was it a broader concept of industry
2 support -- Duke Power, perhaps, or someone like that?

3 A I went through two phases. The Duke Power phase
4 didn't come up until sometime later.

5 The first phase my focus was on get the industry experts
6 in fuel damage and hydrogen generation and radwaste
7 treatment systems -- all the technical issues that were
8 before us. I knew that the designers of plants, the B&Ws
9 and GEs and Westinghouses and Combustions had a lot of
10 knowledge and a lot of capability to solve these problems.
11 And these were the resources I wanted to bear.

12 I wasn't thinking Friday night about the utilities such as
13 Duke Power. I was more thinking about the technical staffs
14 of the NMSS suppliers.

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1 Q But you were not restricting your thoughts to only
2 those suppliers who had worked on the plant, it was the broader
3 things, G.E. or whoever had expert capability.

4 A Yes, and I wanted them, they're working at GPO as
5 agents of GPU, my thought being we would ask GPU and GPU would
6 turn to someone who was experts in these areas and could
7 answer my staff's questions.

8 Q Were you part of the formation of a concept of the
9 industry or industrial advisory group as a result of this?
10 Was NRC planting this idea?

11 A We didn't call it that at all, in other words, I was
12 just, Friday night, interested in technical capability, and
13 I think Saturday morning I mentioned the same concerns to
14 the President and he got one of his staff on the phone and
15 I identified for them the names of some senior people in these
16 agencies, and I know the industry response group began to
17 appear on site on Saturday and Sunday and I assumed that the
18 White House had played a large role in getting them there.

19 Q So Saturday morning you were still apprehensive
20 about the effectiveness of GPU getting this help, and you
21 told the President's staff some for-instances, some good names
22 that could be considered.

23 A (nodding affirmatively.)

24 Q And presumably, then, in your view the White House
25 was making these calls?

jtf 2

1 A Well, I'm sure the White called a number of senior
2 executives in those companies. Now I have never attempted
3 to find out who got called or why the industry group got there.
4 All I know is that, you know, they began to arrive and we
5 moved on to a different class of problems.

6 Q At that stage, were you and your staff also making
7 calls to specific experts?

8 A I was only calling B&W. I don't think I called
9 anyone on that Friday evening or Saturday morning other than
10 B&W.

11 Q So you were talking to B&W at a fairly high manage-
12 ment level?

13 A Yes.

14 Q Who.

15 A I think I talked mainly to Don Roy.

16 Q You didn't talk to MacMillan in that period?

17 A No. Roy I knew from other contacts, and he has a
18 fairly high level in the management of the company, the
19 engineering side, and I would call him quite often to attempt
20 to obtain information and see what they knew.

21 BY MR. BALLAINE:

22 Q Let me qualify something that you said earlier in
23 this regard. I think when you were talking about the fact
24 that you had asked -- when you got there you asked the utility
25 experts to provide some information, and you didn't seem to be

jtf 3

1 getting the answers you expected to get about plant parameters,
2 you referred at one time to the designer. Did you have in mind
3 among other things, conversations you'd actually had with B&W
4 people in order to find out some fairly basic information about
5 plant parameters?

6 A I think it was mainly B&W that I had -- certainly
7 the first day I got there the focus of my concerns was the
8 reactor core and the primary reactor systems which was provided
9 by B&W, and I had not yet gotten that interested in the parts
10 of the plan supplied by the architect-engineer.

11 Q Had you asked questions -- when you referred to
12 utility experts, were you also talking to people who actually
13 worked for Met Ed. or GPU? The people you originally consulted
14 in an effort to get some basic information?

15 A I guess I've lost the thread of your question.

16 Q Again going back to Friday evening when you had
17 arrived and you went around to what you called the utility
18 experts and found that they didn't seem to be able to give
19 answers to some fairly fundamental pieces of information, you
20 have now indicated that the kind of experts you talked to were,
21 among others, B&W people. Did you also talk to people in
22 either Met Ed. or GPU who you would have expected to be people
23 who would be able to tell you some basic plant parameter
24 information?

25 A I didn't talk to -- let me start over on that one.

jtf 4

1 I think maybe I did talk to some of the other technical staffs
2 other than Herbein and Arnold, people they brought in, but I
3 was reflecting more feeling for my own technical staff, that
4 the utility didn't have technical staff in some of the areas
5 to talk to.

6 Q That's what I was wondering. There didn't seem to
7 be any technical staff to turn to.

8 A That's right.

9 Q When you talked to Dieckamp, you weren't thinking
10 that maybe GPU or GPU service staff would bring in their
11 utility staff?

12 A No. By the time I talked to Dieckamp I must have
13 already reached the conclusion that we had exhausted the
14 readily-available GPU talent.

15 Q And that it was insufficient.

16 A And that it was insufficient. We had to go outside.

17 BY MR. BERNERO:

18 Q Let me explore that for a moment. Were you aware,
19 at that time, of the GPU corporate structure that had a
20 repository of technical talent in a parallel company, GPU
21 Service Corporation, where Arnold came from?

22 A I was aware of it, yes.

23 Q When you said there seemed to be no GPU talent, were
24 you under the impression that the resources of GPU Service
25 Corporation were being brought to bear already? The people

jtf 5

1 from New Jersey, in other words, as against the Met Ed. staff?

2 A. It wasn't in that structured sense again. In other
3 words I was interfacing largely, I recall, with Arnold or
4 Herbein, and it wasn't a case of their telling me we have
5 brought the GP -- you know, the Jersey people down, and here
6 they are in a room and you can ask some questions. It was a
7 feeling from talking to those people that they didn't know
8 the answers. Whatever Jersey had to offer had not made much
9 of an impact. So I certainly was not aware of the detailed
10 GPU corporate structure. I was just more reflecting the fact
11 that talking to the senior officials at the site, we weren't
12 getting answers.

13 Q Let me go back to these outside contacts. Just a
14 few moments ago in discussion, you said that you gave some
15 names of experts to the White House staff? Was that one
16 individual -- could you name that one individual at the White
17 House staff to whom you gave those names?

18 A. I think that was Jack Watson.

19 Q And you don't personally know exactly who was
20 contacted and who wasn't through that channel?

21 A. No, I don't.

22 BY MR. BALLAINE:

23 Q Who were the names you gave, do you recall?

24 A. I think I identified the companies, and tried to
25 name a senior official in the company for each one, but I don't

jtf 6

1 recall specifically the name I gave him for each company.

2 Q All right, what companies as best you recall did
3 you identify?

4 A I'm sure I identified B&W because even on Friday
5 night or Saturday morning I still thought B&W was in a response
6 mode rather than an active mode, and I may have given him by
7 that time MacMillan's name as one step up from Roy, who was
8 a contact I had been going through. And I probably gave them
9 people like Ted Stert -- Fred Stern, at Westinghouse, Phil Bray
10 at G.E., that kind of level.

11 BY MR. BERNERO:

12 Q When you and perhaps your staff began to call people
13 outside -- outside experts, did you attempt to keep a log or
14 a contact record of any kind?

15 A We hadn't by that time. It was probably a day later
16 did we get sufficiently organized to start documenting what
17 we were doing.

18 Q Did you direct anyone to undertake this sort of
19 contact? Anyone of your staff, that is.

20 A Outside contacts?

21 Q Yes.

22 A No, I didn't, not in the sense that we're talking
23 about. I think my staff was calling people that they knew
24 might have answers to these kinds of things, wherever they
25 happened to be located, but they were doing it of their own

jtf 7

1 initiative, and I didn't ask any of them to start trying to
2 get an industry response group. That was something the White
3 House was very interested in and readily took on. So I figured
4 that task would get accomplished and I didn't assign it to
5 anyone else to follow up on.

6 Q Well, on any other contacts that you made, were you --
7 could you characterize the contacts insofar as they were asking
8 questions or suggesting to management officials some company
9 that GPU/Met Ed. could use their help? Were you specifically
10 asking them to do something or asking them to make themselves
11 available or what?

12 (Pause.)

13 A Well, it's probably easiest to talk about B&W.
14 There was a lot of information and a lot of analyses that we
15 wanted done that only B&W could do, and in that case we wanted
16 GPU to get B&W to make them and produce people from B&W who
17 understood these systems in sufficient depth to explain it
18 to us. So in that sense we were trying to get GPU to bring
19 on board people who could answer our questions.

20 But then in other areas it was a feeling that Westinghouse
21 also designs PWRs. This is an industry-wide problem you've
22 got here, and you ought to get some of the same people who do
23 these kinds of calculations up here from Westinghouse or even
24 from G.E. Not because we know -- because we think that much
25 about the B&W design, but we're looking for the best ideas the

jtf 8

1 industry can provide about how to get from here to where we
2 want to be.

3 Q So in essence you did suggest then, to someone like
4 Westinghouse that you ought to get some experts in this area
5 of PWR up here? To GPU/Met Ed?

6 A Yes.

7 Q Basically inviting them to support GPU/Met Ed.

8 A And the roles were very ill-defined. There was not
9 a set of procedures for how a federal official interacts with
10 a private company and a state government and other entities
11 around. And so it was a very much of an ad hoc relationship
12 with companies like Westinghouse. I obviously couldn't force
13 Westinghouse to come to Harrisburg. It was more, you know,
14 persuade them that something was going on that was very much
15 in their interests, and they had a lot of "smarts" in.

16 But I really felt like I got over that hurdle when the
17 White House agreed to exert some influence, and I did begin
18 to rapidly see, in Harrisburg, the formation of this industry
19 group, and they began to function and provide the kind of
20 information that I was looking for.

21 Then it was a few days later that I became concerned about
22 the ability of GPU to actually carry out the instructions and
23 procedures that were being developed by this industry group
24 or by my staff in terms of what should be done next, and I
25 felt like the operating organization of GPU needed supplementing

jtf 9

1 and in that case I did call people like Bill Lee and Byron Lee
2 directly, and they responded, as I recall, the very same day.
3 And flew there with their own shift supervisors and began
4 to be integrated right into the operating organization.

5 Q To your knowledge, do you believe that you were the
6 first one to contact Bill Lee of Duke Power and Byron Lee of
7 Commonwealth Edison, for assistance, that is?

8 (Pause.)

9 A I have no indication that they'd been contacted
10 before. Perhaps they had and kept silent about it.

11 Q But in those conversations you had with them, is it
12 fair to say you were basically telling them that Met Ed. was
13 stretched very thin in operators or plant staff and that you
14 thought it would be appropriate for them to come out and bring
15 the appropriate people? Were you specifically asking them
16 to do this?

17 A Yes. I think I asked Bill Lee to come. I knew
18 he operated B&W plants. He had a staff with experience in
19 operating similar plants, and told them it's his problem as
20 to how does he get worked into the GPU organization, but that
21 I thought GPU needed help and it needed help from anybody who
22 had any experience with B&W plants, and that there may have
23 been people from Duke Power and the industry advisory group
24 somehow that may have kept Duke involved, and I kind of have
25 the recollection that Warren Owen from Duke Power was at the

jtf 10

1 industry advisory group. I may have even talked to Warren about
2 whether Lee would consider such a thing or not. But the
3 attitudes when you first bring up this radical idea of having
4 another power company come in, you worry about all the
5 infrastructural aspects, who's going to pay and all that
6 kind of thing, forced me to deal more with the higher manage-
7 ment of the company who wasn't as concerned as some of the
8 junior level.

9 I think I did talk to Warren Owen about whether or not
10 Duke would be receptive to such a thing, but I don't think
11 Warren was sure what the attitude of the company would be.

12 Q So you therefore went to the highest level of
13 management in order to have an authoritative voice with the
14 decision.

15 A And I think one reason that I went to the president
16 that Saturday morning about industry involvement was because
17 I couldn't get to the chairman of the board of GPU. In other
18 words, I felt like it was such a radical idea proposing to
19 a company that they just hire everybody in sight in the nuclear
20 field and get them to Harrisburg, that Dieckamp wasn't sure
21 that was what the chairman of the board wanted to do, and
22 when I couldn't get to the chairman of the board, I felt like
23 I had to move to, you know, another way of influencing the
24 organization.

Q As you were carrying on these contact with Duke

jtf ll

1 Power or any other outside organization, did you make an attempt
2 to keep GPU/Met Ed. informed or to coordinate with them in
3 any way about what you were doing?

4 A. Yes, I did. I'm not sure it was fully effective, but
5 I did tell them what I was doing.

6 Q. And this was through Bob Arnold that you would do it
7 or through Dieckamp?

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8 A. Well, whoever happened to be nearest at the time.
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1 Q Were you personally or the NRC in general directly
2 involved in assigning these people when they showed up?

3 A No.

4 Q This was done by GPU/Met Ed. at their discretion?

5 A So much time has passed my memory may be
6 shifted as to what I did versus what the company did, but my
7 perception is that all along the company did not take -- did
8 not quite see the urgency that I saw in assembling either the
9 industry group or the operating group. They sort of felt
10 that we could come through it and we were overreacting and
11 that they had to sort of be pushed into accepting all of this,
12 the industry group. But to their credit, once the thing got
13 initiated we played -- I played no role at least in how the
14 industry organized itself or who worked what shifts or how come
15 we suddenly find the Duke supervisor in the control room where
16 somehow GPU adjusted. And as people began to show up at the
17 site, they checked in with GPU. They didn't check in with the
18 NRC. They were GPU employees. So, somehow GPU did handle
19 all those logistical matters and did put together an
20 organization that began to focus on the problems and develop
21 PERT charts about a week after the accident doing all kinds
22 of things that we wanted done. And then our role was more of
23 monitoring and urging them on.

24 But it took just about a week before we did see the
25 infrastructure assembled at the site with the kind of drive and

sls-2
1 aggressive technical approaches that we were looking for.

2 Q During this period where outsiders in increasing
3 numbers were coming onto the site and taking a role in the
4 response, did you maintain a clear understanding with GPU/
5 Met Ed. that they were still the licensee?

6 A I think so. I guess you'd have to ask Met Ed.

7 Q But from your point of view were you explicit in
8 that?

9 (Pause.)

10 A I think I was sufficiently explicit. The question
11 did come up occasionally that if you're so -- if you, NRC, are
12 so committed to doing it this way and with such massive
13 approach and so forth, are you sure you don't want to operate
14 the plant? And it was, I think, clearly understood that I
15 relied on GPU to operate the plant. They were always the
16 licensee. It had been some discussion in those first few
17 days should NRC take over the operations of the plant? This
18 was suggested by people in Washington and it had gotten some
19 press attention, but I don't think there was any doubt in the
20 people I talked to minds that they were the licensee and that
21 our role was one to concur in all their actions but not to
22 assume the direct responsibility for manipulating controls over
23 any procedures.

24 Of course in the early days if they would bring a procedure
25 over, if we thought it was deficient and needed a step or two

sls-3
1 we didn't stand on procedure. We might write in the step or
2 two and give it back to them and say, "Here. Hey, here's the
3 step we think that in order to have an approved procedure you
4 do it this way and this way." And if they concurred, we moved
5 on. So, we didn't deal at arm's length during the first
6 couple of days.

7 Eventually I set up a group to just do nothing but review
8 procedures and got more formalized.

9 Q I seem to recall that in one of the places in which
10 you expressed your views, testimony somewhere, I can't put my
11 finger on it, that you said something to the effect that even
12 when the industry advisory group was at the peak of its
13 function that you were still dealing with whatever decisions
14 GPU/Met Ed. had made. What other decision the licensee made
15 in regulating that decision. Not what the industry advisory
16 group was saying. I can't recall your words. I somehow have
17 the image that you said you were out in the corridor and when
18 Bob Arnold came out with whatever decision he came out with,
19 you still regulated him and not the industry advisory group.

20 A I don't remember saying that, but that's my
21 recollection of who we regulated. I remember meeting with the
22 industry advisory group and they would maybe discuss three or
23 four options for achieving a given goal and some would be more
24 radical than others. And we had observers at the industry
25 advisory group, people who would participate and add their

sls-4
1 thoughts to their advisory group, but ultimately it was -- I
2 was waiting on GPU to come out with a procedure for accomplishing
3 the next step. And what we do is review the adequacy of that
4 GPU proposal which they had lifted out of various options that
5 the industry advisory group had generated.

6 Q I would like to turn now to what I might call services
7 or support other than the sort of thing we are talking about
8 now. NRC did assist during TMI in obtaining material services;
9 filters, bricks, transportation, things like that.

10 Did GPU during this period ask NRC for assistance in this
11 or was NRC volunteering this help? Just on the perceived
12 needs.

13 A I think it was both. They may have asked for some
14 things, but I think other things that we might have suggested,
15 "What are you going to do in the event of a loss of off-site
16 power? Wouldn't it be nice to have some diesels," and if they
17 couldn't get the diesels or they didn't have any we'd say,
18 "Would you like for us to get some?" And they quickly, I think,
19 learned that we were a very reliable supplier. But in some
20 things they would make the arrangements, like the filter
21 system, from WPPS. I don't know how we identify that there were
22 filters ready to the -- that could be flown to Harrisburg.
23 But once their availability was identified by someone, and I
24 think it was probably by GPU, we got the Air Force to fly them
25 to Harrisburg. So, we would take care of whatever part of the

1 logistics that would have been difficult for the company to
2 do.

3 Q I believe there was a legendary, oversupply of
4 lead bricks. Was it your general impression that there was a
5 lot of overreaction or oversupply of things?

6 A I don't think there was any oversupply. At the
7 time we didn't know what we might need. It was like with the
8 robots. We knew there were a couple of robots available in
9 the DOE organizations and labs, and we asked for both of them.
10 It was a feeling in the early couple of days that we had to
11 plan for any eventual contingency, and we wanted all the
12 hardware there that it might take. And the fact that we didn't
13 use a lot that got there doesn't bother me at all. I'd much
14 rather explain that we had it there if we needed it, then to
15 try to explain why we hadn't asked for it if it did come to
16 need.

17 Q Do you know if NRC has charged GPU/Met Ed. for any
18 of the support efforts that NRC undertook?

19 A I don't know if we've actually charged them, but we
20 did reach an understanding where GPU would give us a letter
21 saying they would pay whatever it cost. And so we would give
22 these letters to our comptroller and I imagine our comptroller
23 has collected from the company, but you'd have to ask them.

24 BY MR. BALLAINE:

25 Q When was the letter obtained? Was this well after --

sls-6
1 A No, it would be individual letters, like the letter
2 for flying the filters from Hanford back.

3 Q At the time it happened?

4 A At the time it happened. And we, I think, will
5 type up a two line "I will agree to pay for 16 flights of
6 Hercules aircraft between Pasco, Washington and Washington."
7 And go over and get Mr. DeCamp to sign it.

8 It was that kind of letter. And no one knew at the time
9 what it would cost. We didn't have any idea what the Air Force
10 would come back and tell you the cost was. So, we would
11 just routinely when there was a big item like that to get to
12 be sure that we had a record that the company would pay for it.

13 Q And there was an arrangement that you made with
14 Mr. DeCamp?

15 A Yes. And our comptroller got in on how to document
16 these things. It took about a week before the people really
17 got concerned about documentation. The first week I don't
18 think we documented very much in the sense of having the
19 company saying I will pay for it.

20 Q By the way, all of these individual letters verifying
21 an agreement to pay a certain item are with the comptroller
22 now or are they copies in the NRC files?

23 A Yes.

24 Q They went over to the comptroller's office?

25 A Yes. And one I remember with the Robot Company, the

sls-7
1 organization that owned Herman was very concerned that if he
2 became contaminated the company would have to buy him. Maybe
3 you remember that, Robert. And the company did agree that if
4 he had gotten contaminated they would have purchased the robot
5 entirely in today's dollars.

6 BY MR. BERNERO:

7 Q If you look back now after these many months on
8 that general support, both the professional staffing and the
9 physical support, can you cite salient examples in your view
10 of examples which showed good responsiveness and those which
11 showed negative or undesirable responsiveness?

12 A You mean support to the NRC?

13 Q To the entire emergency response. Whether that
14 support was clearly response to NRC needs or response to GPU/
15 Met Ed.

16 (Pause.)

17 A I think it's fair to say that the nuclear industry
18 was a little slow the first day or two to perceive the need for
19 a massive involvement and to divert their resources from other
20 tasks, but once it became apparent it was needed I think they
21 turned out both from the utility and from the NSS suppliers
22 and the AE's. The support that we got from the White House
23 was invaluable because that was -- provided the opening door
24 to systems such as the Air Force to provide that they just could
25 never have arranged through normal systems. I am sure that

sls-8
1 if we had to fly things through normal air cargo it would have
2 taken forever to have gotten the filters from Pasco to
3 Harrisburg.

4 And they were able to open the FAA doors for landing
5 patterns, special exemptions. So, I considered that the White
6 House support was just excellent in the whole arena. The
7 State was also very good in easing whatever barriers there
8 might have been under their control. I guess I don't remember
9 any insuperable barriers that -- toward the end of my stay up
10 there things were slowing down a bit. I do recall it took an
11 unseemingly inordinate amount of time to get the railroad
12 tank cars to the site. That was something you would think
13 would be rather automatic but it seems there we did hit some
14 bureaucratic roadblock over conditions for there being made
15 available and costs and so forth.

16 So, I think in general the Government did go through this
17 phase early on in the first week where anything you wanted was
18 provided. Then by the time I was leaving, the normal govern-
19 mental controls had begun to work and there was a lot more
20 need to go through channels and get clearances that wasn't
21 present during the first week.

22 Q If the overall support effort had been initiated
23 earlier than it was, do you think that would have changed the
24 course of events substantially?

25 A Well, let me add one footnote to my last answer:

sls-9

1 Another support that was really excellent and was not recognized
2 by me until sometime later, later after the first few days,
3 was the DOE support and the sort of capability they had over
4 at the Central City Airport, I believe was the name of it.
5 If that kind of communications hardware that they made available
6 and they flew into that area had been somehow made available
7 to the teams we had at the site on Wednesday and Thursday, I
8 think we would have had a lot better communication because they
9 had all kinds of pagers and base stations and ways to relay
10 information back to Washington.

11 We could have had 12 or 20 channels of communication all
12 the time with people at the site rather than relying on the
13 one or two telephone linkups that we did. And so I think one
14 lesson I have learned would be to get sort of that DOE
15 capability either within the NRC or some kind of understanding
16 that DOE would really make it available and integrate it right
17 into our recovery plans early on. So, I think that would have
18 made a difference in our perception of the accident if we'd
19 had it available and fully utilized it.

20 Q You mentioned the airport facility. Are you
21 referring to the airport over across the river?

22 A Yes.

23 Q Do you know who made available the facilities over
24 there that were used for GPJ/Met Ed. Industry Advisory Group?

25 A No, I don't. I think I had been at the site about

sls-10

1 a week before I visited that Central City Airport and the DOE
2 setup. And by that time they were making -- they had a very
3 elaborate operation going and I was really impressed by the
4 communications here and the analysis gear they had managed
5 to bring to the site. I think that's an important capability to
6 keep in mind and make sure that we have access to, if we don't
7 have it ourselves.

8 The NRC has very little operational capability. In other
9 words, if you count the number of geiger counters and portable
10 vans and prior arrangements even for private planes -- in other
11 words, I'm not sure if I needed to be in Oregon by midnight
12 tonight, but I'd have an easy way of getting there. You know,
13 we could call the Flying Tiger Airline or something and see
14 if they'd make arrangements. But we don't, I think, as an
15 agency, have nearly the capability for operational aspects that
16 the old Atomic Energy Commission had and is still available
17 within the DOE.

18 Q And you seem to suggest that we should either
19 provide such operational capability in some areas or make sure
20 that we can tap into that sort of capability?

21 A Yes.

22 Q One last question on the organizational support
23 the industrial advisory group and that whole hierarchy.

24 Do you think if that had been preestablished or established
25 earlier, that would have substantially changed the course of

1 events?

2 A By "change the course", obviously it wouldn't have
3 changed the accident during that first few hours because
4 nothing would have -- nothing in the sense of assuming outside
5 technical support would have made much difference, but it might
6 have led to recognition of the seriousness of the accident
7 much earlier than actually occurred. And I think industry has
8 moved in that direction now that they do have identified
9 technical experts in each specialty and will -- are set up so
10 as to respond as a group the next time there's a call.

11 Q I would like to go down now and close out this
12 whole line of questioning with one line associated with the
13 B&W effort. The potential for an explosion of the bubble of
14 noncondensable gases was a major concern starting around
15 Friday.

16 Were you aware at that time of any analysis that was done
17 by B&W and other organizations in response to this issue?
18 Things that they were doing?

19 A I talked to Don Roy several times. I think I
20 talked to him before I went to the Ireland and even after
21 I got there, but I don't remember getting any feedback that
22 assisted me in making a determination about the flammability
23 or detonability of the bubble. It just didn't come back in
24 and somehow we were talking about other areas and he didn't
25 volunteer it or I didn't ask. So, I don't remember getting
any information in those channels.

kapMM

1 Q The --

2 A I should say I do remember after Sunday when we
3 began to find that the bubble was disappearing, I do
4 remember then getting information from B&W about how they
5 calculated the bubble size and their basis for thinking the
6 bubble was going -- and this sort of thing. But that was
7 kind of after the bubble flammability issue had peaked and
8 turned down.

9 Q You earlier said that you were concerned that B&W
10 was in a reactive mode. I have here a memorandum. It is
11 actually a National Security Council situation report
12 written by Jessica Matthews, which includes a paragraph
13 describing that you met with 50 to 60 industry
14 representatives on April 1st and expressed satisfaction that
15 the best minds in the business are at work on the problems,
16 but went on -- this memo goes on to say, The only company
17 which does not seem to be taking the situation at all
18 seriously is Babcock & Wilcox.

19 Let me show you this, first of all. This is Exhibit 3113
20 in the Special Inquiry, and perhaps you would want to read
21 the whole thing (handing document to witness.)

22 (Witness reading document.)

23 BY MR. BALLAINE:

24 Q Why don't you tell us, by the way, whether you've
25 ever seen that before?

kapMM 1 A No, I haven't seen that before. I have read that
2 now. I had forgotten the question.

3 BY MR. BERNERO:

4 Q The passage I had marked in red ink about the
5 reported occurrence where you reportedly said that you were
6 satisfied on April 1st with industry response, except for
7 the B&W response, do you recall making that statement at an
8 April 1st meeting?

9 A No, I don't recall that statement. That
10 apparently is a summary obtained from the industry itself
11 based on what I told them when I met with them.

12 Q Do you recall ever making that statement about
13 B&W's response?

14 A Yes, I do remember being troubled by a seeming
15 lack of information from B&W themselves. The first few days
16 up there, and apparently on into April 2nd or so, it just
17 seemed like we weren't getting the information from B&W that
18 I felt we should be getting.

19 Q But would you characterize that as a passiveness
20 on B&W's part, or indifference? Did you have a specific
21 feeling about what was the cause of their not providing the
22 information?

23 (Pause.)

24 A I think from the very first day of the accident,
25 we thought that B&W should be a good source of information

kapMM

1 to ask what was going on in a reactor that they had
2 designed. And we found that they did have someone at the
3 plant, I think the day of the accident, and so we had
4 assumed that B&W had turned to and had put their analysis
5 staff to work and would be grinding out answers to show what
6 the status of the core was.

7 During the next couple of days I had the feeling that B&W
8 was not getting even the quality of information at
9 Lynchburg, it seems, that we were getting in the reponse
10 center. And therefore they were unable to do the kinds of
11 calculations. And I knew the B&W organization well enough
12 to know that they had the capability to produce a lot of the
13 analyses and results that we were looking for. And I just
14 got the feeling, I guess -- apparently right up through that
15 date, that they had not as a company made this wholehearted
16 commitment to drop everything else that they were doing and
17 turn really their full attention to this plant.

18 Q Well, I will read to you, now, Bob Arnold, in his
19 deposition before the TMI Special Inquiry Group, in
20 discussing what he was doing on Saturday, states the
21 following -- or stated the following. Let me read it to
22 you. Quote, "On Saturday about noon I recall specifically,
23 I guess a little before noon I met with Harold Denton for a
24 few minutes and I guess got better tuned in to what he
25 perceived to be the technical resources we had in place.

kapMM 1 And I heard his concerns that we weren't bringing B&W
2 resources to bear."

3 "Q As a result of that you made a call to
4 Mr. MacMillan of B&W?"

5 "A Yes, in which I made it clear to him that all
6 resources within B&W that could possibly be made available
7 to this effort, I wanted made available and in effect
8 charged him -- gave the authority from the company for him
9 to expend whatever resources he felt were desirable in
10 supporting this effort that he had available, and went back,
11 and reported to Denton that conversation with MacMillan."
12 End quote.

13 Do you recall that interchange with Bob Arnold on
14 Saturday around midday?

15 A I don't recall that specific words, but I do
16 remember talking with Bob about that kind of situation.

17 Q Did you perceive a change after his attention was
18 brought to bear? Perhaps did you understand that he had
19 done this?

20 A I think I understood that he was going to do it
21 after that conversation you mentioned. And it was a fluid
22 situation, changing -- but I did have some feeling for some
23 time that B&W had just not really turned to -- and
24 sometimes, I did get the feeling they had.

25 In other words, I remember MacMillan appeared at the

kapMM 1 site. He brought up a lot of his staff. And my concern was
2 alleviated. But when I was not -- my opinion wasn't really
3 based on commitments or agreements to pay. It was based
4 more on my staff telling me that they were getting answers
5 that only B&W could provide. And once they began to get
6 those answers my concern about B&W participation went away.

7 Q Okay. You can't give any sort of watershed time
8 where the thing shifted over?

9 A No, I don't recall. But I do think by the middle
10 of the week, the week after the accident, by some time like
11 Wednesday or so, I did begin to see an organizational
12 structure by GPU and by the industry advisory group that we
13 were happy with. And by observing its functioning,
14 everybody had a role to play in the GPU organization and
15 they appeared well defined. And I think my concerns were
16 considerably alleviated, from an organizational standpoint,
17 after that.

18 BY MR. BALLAINE:

19 Q Now, you testified that you when you became
20 concerned about the utility's technical weakness that you
21 first spoke to Mr. Dieckamp and you think that was probably
22 Friday night. You also indicated that some time Saturday
23 you spoke to the president about -- I think it's fair to
24 say, the need to get additional technical support to the
25 site.

kapMM 1 Was there something that you did between the time that
2 you spoke to Mr. Dieckamp and spoke to the president in an
3 effort to solve this problem of your perceived technical
4 inadequacy on the part of the utility?

5 Was the president the next step?

6 A I think somewhere in there I did try to get in
7 touch with the chairman of the board of GPU, and failing
8 that just became increasingly concerned, I guess, over that
9 night, that the level of seriousness from which GPU viewed
10 the need for additional resources other than what they had
11 arranged for, was just not going to come to fruition. And
12 I'm sure that's why I decided to bring it to the president's
13 attention, because the president was interested in these
14 phone conversations.

15 What is it that I can -- what was it that he can do
16 through his office that would materially assist the
17 situation in addition to providing equipment and logistical
18 support and so forth. And by Sunday I must have become --
19 Saturday morning, sufficiently concerned that GPU was not
20 going to make a quantum change in their approach to a
21 technical pool --

22 Q I wondered, because you had other conversations
23 with GPU or Met Ed or because you hadn't seen any
24 improvement being made.

25 A I think it was more that I hadn't seen improvement

kapMM 1 and whatever ongoing discussions I had had tended to -- the
2 GPU attitude generally was, I think, in that first few days,
3 that NRC was grossly overreacting and wanting to get such
4 massive amounts of attention to this problem.

5 Q That was the impression you had as to GPU's point
6 of view?

7 A Yes.

8 Q Can you recall anything that was said by anybody
9 that supports that impression? Just wonder -- your
10 recollection of more specific conversations or steps that
11 were or weren't taken. Something more concrete that
12 supported that impression that you had by Saturday morning.

13 A I'm afraid I can't pin it to any one thing.

14 Q Something you were told by the staff, maybe? Your
15 staff?

16 A I think it was probably reflecting both my staff's
17 anxiety level at not having firm facts available, plus my
18 own assessment from dealing with Dieckamp and Arnold and
19 Herbein, that their sense of priorities and urgency was just
20 different from mine. They thought they were doing an
21 adequate job with the level of attention they were giving
22 it. And I wanted a much higher level. And I didn't know
23 how to achieve this higher level.

24 Q What was the difference in levels of attention
25 more in the nature of contingencies, planning for

kap/MM

1 contingencies?

2 A Contingencies was my number one concern -- I
3 shouldn't say my number one concern. But it was a high
4 concern.

5 Q Is there something else that, you know, you
6 perceived as a difference between what they thought was
7 enough and what you thought was enough?

8 A Another area, I think, was control of effluents,
9 that they didn't have the sense of urgency about stopping
10 iodine and noble gas releases that I had perceived. They
11 were looking at -- more comparing those releases to some
12 sort of federal standards and I wanted to bring them way
13 down to very low levels.

14 So that was another area in which I think we continually
15 had some difference in perception of how serious the problem
16 was and especially changing the filters, for example. Once
17 we found the iodine filters weren't really effective, it was
18 a constant urging on our part to put more men on the job and
19 do more and get it done, and their feeling that they were
20 doing all that needed to be done.

21 Q Again, can you point to any conversations that you
22 personally participated in with some utility people in which
23 there was a discussion about difference in viewpoint about
24 effluents?

25 A My recollections have gotten all too hazy after

kapMM 1 the passage of time, as to why I did certain things.

2 Q Okay. And I did want to clarify this. At the
3 time you spoke to the president it was your purpose, among
4 other things, to bring to his attention your concern about
5 the need for additional technical support?

6 A Yes.

7 Q Now, at the time when you told presidential
8 assistants, I take it, that B&W was one of the potential
9 sources, had you had any telephone contact with somebody at
10 B&W other than Mr. Roy in an effort to specifically get them
11 to throw whatever resources they had into the problem?

12 A I may have had some with MacMillan but the bulk of
13 my conversations were with Don Roy.

14 Q Do I understand correctly that after those, the
15 conversations with the president, that basically something
16 started to happen and the technical support started to come
17 in; is that right?

18 A Yes.

19 Q And am I also correct in understanding that then
20 you didn't have a problem until you realized that now you
21 are going to have a need to start to replace operators, that
22 the hands-on people working at the site, and that that
23 happened maybe Monday or Tuesday?

24 I want to see if I understand the sequence of your
25 concerns for the need for additional help.

kapMM

1 A I think once the industry advisory group got
2 working they convinced me that they were thinking about the
3 things that my staff had been concerned about -- what do you
4 do if this or that fails, and how do you get the reactor and
5 the effluents under control? And it was either Monday or
6 Tuesday that I did turn my attention to carrying out the
7 plans that had been developed by the technical groups.

8 Q Now, with respect to this matter of getting fresh
9 operators in from the other utilities, did you raise this
10 first with GPU and Met Ed? And if so, do they have some
11 initial resistance to that particular idea?

12 A I think it was almost like the industry advisory
13 group, that GPU really thought they could handle it, they
14 had some resources they were calling on themselves, and when
15 I'd ask them what they were doing they've got an operator
16 coming from GPU -- I mean an operator coming from Jersey
17 Central. And maybe they were recalling two operators that
18 were on vacation. And they would always have a response to
19 these questions. They'd have one or two things going.

20 But it was, I guess, the difference between what I
21 thought was needed and what they thought was needed, was a
22 huge gap. And I think I discussed it with them and kind of
23 had the feeling that they wouldn't object if some help could
24 be found. But they really didn't think that they needed it,
25 or needed to initiate it. At least that's the kind of

kapMM 1 perception I had.

2 Q I take it it's also your perception that if you
3 didn't do it then they weren't going to bring in the
4 additional support that you thought was sufficient.

5 A Or they would stick with what they had described,
6 which I thought was not sufficient.

7 Q Do you remember having a conversation --

8 A I think it's fair to say they had far more
9 confidence in the ability of GPU as an entity to handle the
10 whole problem than I had, either from a technical or an
11 operational standpoint.

12 Q By the way, these conversations with respect to
13 bringing in other operators, do you think that took place
14 after the weekend, Monday or Tuesday?

15 I'm just trying to get time frames.

16 A I think it was probably Sunday night -- kind of
17 discussions. Possibly after the meeting with the technical
18 group and it could have been on Monday.

19 Q You testified earlier on that it was shortly after
20 you got to the site there was the big push to get some kind
21 of written contingency plans from GPU Met Ed.

22 Did you ever get such plans from them?

23 A Yes, they did respond. And our view was that you
24 should have a plan for the major possible contingencies,
25 even if it were just a sketchy outline without everything

kapMM

1 filled in. If it just said, Pump A trip start pump B
2 immediately, and then D, and then if that fails, immediately
3 do that -- then I do remember they did respond and began to
4 generate these very simple procedures that just had a
5 skeleton of action.

6 So that my concern was if something happened 1:00
7 a.m. the next morning that there would be steps taken that
8 we would concur in.

9 Q How quickly, as best you recall, did they respond
10 to some kind of skeletal procedures? Are you talking about
11 within hours, or a day or two?

12 A I think by -- my recollection is within a day they
13 were putting in place the skeletal procedures.

14 Q Who do you think they were putting those together
15 -- by the way -- do you think they went to outside sources?

16 A No, I think they had more the station technical
17 staff or people who were involved in procedures doing it. I
18 don't recall who they had doing it.

19 Q Do you recall a conversation on Friday night
20 involving you, Mr. Fouchard and Mr. Creitz? I'm wondering
21 whether you have any recollection -- at the time, if you had
22 a conversation involving those parties?

23 A Yes, I think we all three met in the private house
24 on Friday night.

25 Q Do you recall whether the subject dealings with

kap/MM 1 the press came up at that time?

2 A Yes. Mr. Creitz had a proposed press release that
3 he wanted to put out as a joint statement.

4 Q This was at the meeting. I think I remember you
5 testifying earlier Mr. Fouchard essentially advised you or
6 stepped in and said, no, that the NRC wouldn't join.

7 A Yes.

8 Q Was there any other conversation at that time
9 about the possibility of Met Ed stepping aside altogether?

10 A I think Mr. Creitz did have -- the relations with
11 the press weren't something I was -- had as a high
12 priority. I remember Mr. Creitz and Fouchard would have
13 these discussions about, should you have joint press
14 releases. And maybe they were saying they planned one at
15 9:00 o'clock tomorrow morning, and would we participate in
16 that sort of thing.

17 But at the time I didn't -- I just sort of overheard and
18 relied upon Mr. Fouchard to advise me in what our practice
19 should be.

20 MR. BALLAINE: Let's take a recess.

21 (Recess.)

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pv MM

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BY MR. BALLAINE:

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Q We are following up further on Mr. Denton's recollection. Just anything you can remember that was discussed Friday night in the conversations involving, among others, Mr. Creitz, with respect to dealings with the press.

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A I think GPU was sort of surprised to see me up there and all the retinue that I brought, and I think they had proposed that we have some sort of joint press conferences together. And they had proposed earlier that day a joint press release, and they told us -- I think they even told us that Herbein was going to hold a press conference the next morning and shouldn't we have managed to participate in the same thing.

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By that time, I think, we had reached the conclusion that this being 7:00 o'clock at night, so I had been there for five or six hours, that we were going to do our own thing and they could do theirs and we would do ours. But we just didn't see much opportunity to hold joint ones.

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I don't think there was any discussion among us three that they shouldn't hold theirs. It was more that we weren't going to combine the press conferences in any way.

Q Do you remember any other conversations on either Friday or early Saturday, whether or not involving GPU, Met Ed personnel in which there were conversations perhaps, the

pv MM 1 appropriateness of just having the NRC handle press
2 briefings and press conferences?

3 A I do remember a conversation where GPU told us
4 they weren't going to have any more. And I remember some
5 discussions with some of the White House staff about the
6 fact that Herbein held one Saturday morning and I held one
7 and there was a lot of interest in the differences.

8 But exactly where or when GPU decided to stop or why they
9 stopped, I don't really know.

10 Q The other conversations you have just testified to
11 recalling were conversations that would have taken place
12 sometime at least mid-day Saturday?

13 A Yes, and I do remember Mr. Creitz seemed to be --
14 they also had another public relations person on the staff
15 that was usually present when Mr. Creitz was there, but I
16 have forgotten his name.

17 Q But I take it Mr. Creitz seemed to be the guy with
18 the utility who was most directly involved in this press
19 question?

20 A Yes. You have to remember that by Friday, at
21 least, I had not gotten involved until Friday at 7:15 in any
22 major press conferences; it was just the minor press
23 conference that afternoon sometime.

24 Q Directing your attention now to Saturday, the
25 31st, sometime during this day, Chairman Hendrie down in

pv MM 1 Washington held a press conference, and at that time, among
2 other things, he indicated that there was at least a
3 possibility -- it was more speculation -- but that in the
4 event of certain situations there might have to be an
5 evacuation up to 20 miles.

6 To the best of your recollection, had there ever been any
7 conversations in which you were involved in which the
8 possibility of evacuating that far out, up to 20 miles, had
9 ever been mentioned?

10 A I don't recall having participated in any
11 discussion of 20-mile evacuation on Saturday.

12 Q Or even Friday or Thursday or Wednesday or anytime
13 before mid-day Saturday?

14 A 20 miles may have been mentioned somewhere along
15 the way before I left Bethesda, but after I got to the site
16 and the issue of -- the hydrogen issue -- arose, I just
17 don't remember 20 miles being in any of my discussions with
18 the commission.

19 Q Had you at the site, or had any of your people on
20 your staff at the site, given any thought to how far out an
21 evacuation might have to be made in the event of, you know,
22 the worst-case possibility?

23 A Well, we had -- we had looked at the data in
24 WASH-1400 on core melt times, and using tables -- you could
25 find tables in WASH-1400 to tell you how many hours you

pv MM 1 might have before you penetrate the vessel or you would lose
2 containment integrity, depending on how many days elapsed
3 since the core was originally shut down.

4 And I remember the State of Pennsylvania brought in
5 Dr. Neal Wall as a consultant. He was -- he did some of the
6 WASH-1400 calculations, especially those dealing with
7 evacuations.

8 So, we meet with him and discuss these details, and I
9 remember agreeing with Dr. Wall one time that in the worst
10 case it was hard to see a need for evacuations beyond 10
11 miles.

12 Q When do you think this particular conversation
13 took place?

14 A I think it was early on the following week. I
15 don't believe he was there on Sunday. It was more like
16 Monday or Tuesday kind of thing.

17 Q What about, though, as of Saturday, maybe you
18 hadn't focused on the site, but did you have any distances
19 in mind as the ultimate distance of evacuation in the event
20 of a worst-case scenario?

21 A We hadn't done any particular focusing other than
22 just a knowledge of what was in WASH-1400, that you had a
23 whole range of accidents. And I guess I was feeling that
24 each day that successfully passed, I felt better and better
25 about the situation, and that fission products had decayed

pv MIA 1 off a bit more and the total amount of energy in the system
2 was going down.

3 But on Saturday, I felt the coolability of the core had
4 been established and that the accident wasn't worsening.
5 And while I knew that we were looking at the hydrogen bubble
6 issue, I didn't feel any big apprehension that evacuation
7 might be imminent, as that press story said Saturday night.

8 Q So, anyway, there wasn't any focusing on it, at
9 least at that time up at the site on the question of
10 worst-case contingencies, how far out do we evacuate, those
11 kinds of questions?

12 A Not on Saturday, no.

13 BY MR. BERNERO:

14 Q By point of clarification, Mr. Denton, you
15 indicated talking to Neal Wall probably early in that second
16 week and concluding that the worst-case scenario would not
17 require an evacuation beyond about 10 miles. Was that for
18 the level of decay heat present at that time? Or was that
19 retrospective?

20 A I think it was for the level of decay heat at that
21 time, but I don't think it was all that much difference
22 between three days and five days, for example. The fact
23 that we had gotten beyond the first couple of days and the
24 decay heat curve begins to flatten out.

25 Q Thank you.

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1 BY MR. BALLAINE:

2 Q Now, Saturday morning did you have a conversation
3 on the telephone with Mr. Case in which he mention, among
4 other things, that he disagreed with your statement the
5 prior evening, which I think he took as a suggestion that
6 there was no chance of an explosion and suggest that you not
7 go that far in the future press briefings?

8 A I don't recall the conversation.

9 Q Do you recall at any time Saturday becoming aware
10 of the fact that people in Bethesda were saying, "Look, you
11 can't say as a flat matter that there is no risk of an
12 explosion of the reactor vessel"?

13 A Yes, I do recall becoming aware that Bethesda was
14 doing more calculations about flammability and
15 detonability. My own staff at the site didn't seem to be
16 unduly concerned about that aspect.

17 I remember my last information I had before leaving the
18 site to go to the press conference is that we had a number
19 of days, a week or more, before we would reach conditions
20 where flammability or detonability was a real possibility.
21 I remember raising some concerns about it from a standpoint
22 of ignition sources, that I didn't see an ignition source.
23 And that got studied by Bethesda, and the word came back was
24 that I couldn't depend upon that because agitation in the
25 water and high temperatures and so forth, so I should not

pv MM 1 look upon that as an absolute barrier to ignition.

2 Q All right, let me try to clarify one or two
3 things.

4 Am I correct now that this concern about the potential
5 for an explosive mix in the bubble involved the calculation
6 of two separate conditions: one, a flammable condition; and
7 then, two, sometime after that, what I guess we can call a
8 combustibile --

9 A I would say "detonable."

10 Q -- Detonable condition. Is that right?

11 A Yes.

12 Q Now, you just indicated that you had heard before
13 you went to the press conference Saturday night that it
14 would be a matter of days, one week or more, before it would
15 be combustibile, I think was your word. In any event, I want
16 to clarify: is it your recollection you were told it would
17 be a number of days before it reached a flammable mixture,
18 before you reached a detonable mixture? Which was it
19 referring to, the idea of having a number of days, one week
20 or more?

21 A I remember throughout the day the numbers bounced
22 around a bit on what the concentrations were that would
23 permit either a combustion or a detonation in an atmosphere
24 of hydrogen with oxygen added. And the number depended upon
25 the pressure and perhaps the relative humidity and a number

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1 of things. I sort of used them interchangeably.

2 It seems to me the numbers were like five to seven
3 percent at one time; and depending on when I said them, I
4 was either talking about the combustible one or the
5 detonable one. And the detonable times were always longer.

6 But I can't remember at the moment whether Friday night I
7 was talking detonable or combustible. I would have to look
8 back at the transcript.

9 Q Let me show you a transcript. This is Saturday
10 night conference now. The cover of this says: "Transcripts
11 of State of Pennsylvania Press Conferences" (showing
12 document to witness).

13 For your information, this is taken from the governor's
14 press office. This is the entire transcript for the press
15 conference Saturday, March 31, 11:00 p.m.

16 Why don't I start you at the bottom of this page and up
17 to the top of the third. But really, what interests me the
18 most is where, according to this, you say there is not a
19 combustible mixture in the containment or in the reactor
20 vessel and there is no near-term danger at all.

21 What is the shortest term you're talking about?

22 Certainly days before. I want to clarify what was in your
23 mind, whether you had in mind it was days before you would
24 reach a flammable mix or whether you had in mind reach a
25 detonable mix, or whether you just hadn't really focused on

pv MM 1 the differences between the times.

2 A (Reading document.) Well, at that time I knew the
3 difference between the flammable limits and the detonable
4 limits, and I knew that the detonable limits required more
5 oxygen input than the flammable limits.

6 Q I guess I am wondering what it was that was
7 several days away in your mind, the flammable condition or
8 the detonable condition?

9 A I think, at the time of the press conference here
10 I was really thinking about flammable limits. Then, I
11 think, after returning to the site I found out that the view
12 back in Washington was that maybe flammable limits had been
13 reached and that detonable limits would be reached in a few
14 days depending upon how you calculated the numbers.

15 But I think, at the time I was talking here, I was
16 talking about flammable. I say "flammable limits," and I
17 would have used "detonable limits" if that's what I meant, I
18 assume.

19 Q Combustible, I take it --

20 A Combustible is the same as flammable. Because I
21 say "days before flammability and many more days before that
22 before detonable limits."

23 I should point out that I think all day Saturday the
24 calculations in this area bounced around. We had telefaxed
25 to the sites some tests that had been run on the

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1 flammability of hydrogen mixtures and the numbers that were
2 being pulled off curves varied with the time of day. All
3 the while we were operating with the erroneous assumption
4 about the rate of oxygen input into the bubble. What I
5 think was varying during that day was what are the flammable
6 and detonable limits, assuming the same one percent per day
7 of oxygen.

8 Q Now, according to a memorandum that we have, you
9 spoke with Jack Watson sometime Saturday evening, and you
10 talked about the question of how long it would take before a
11 decision would have to be made as to whether or not or how
12 to intervene in the reactor vessel to get rid of the
13 hydrogen bubble. Do you recall having such a conversation
14 with Mr. Watson sometime Saturday?

15 A Yes.

16 Q Now, at that time we believe you indicated it
17 would be "several days" before a decision would have to be
18 made concerning intervention. Do you think you said that?
19 Do you think that's what you indicated during the
20 conversation with Mr. Watson on that Saturday?

21 A If you've got it, I don't know why you ask me that
22 question.

23 Q Because it's hearsay hearsay, and I am not going
24 to pin you with it when it's fourth-hand.

25 A Yes, I do recall at the time thinking that if we

pv MM 1 were unable to get the bubble out and we were approaching
2 either a flammable limit or a detonable limit, whichever the
3 lower limit was, that we shouldn't wait right up to the last
4 day, that we should take steps to put the civil defense
5 system in a high state of readiness and make a drastic
6 change in the cooling of the core during the daytime hours
7 when everyone is alert, and you could have all the technical
8 people available in the control room for guidance and you
9 would have evacuation plans and readiness to go, and you
10 announce that "We are about to change the mode of cooling in
11 the core."

12 And I do recall telling people like Watson that we had
13 several more days to work on getting the bubble out before I
14 thought it would be a crisis situation that would demand
15 this drastic change in the hydraulics of the core.

16 Q That's what I wanted to clarify, that this
17 question of how much time you had really was dependent on,
18 some kind of conclusion as to the detonability of the
19 bubble.

20 A Yes. And that assumed that the bubble was
21 combustible and detonable, and that I would want to take
22 whatever action I could take to get rid of the bubble, such
23 as to by lowering the pressure in the core, blowing down the
24 reactor system, some safe number of days prior to
25 calculating we would actually reach a combustible or

pv MM 1 detonable mixture.

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1 Q On Sunday, there was a briefing of the President
2 involving you and Dr. Mattson, who was present, and
3 Mr. Stello among others. You had previously received some
4 information directly from Dr. Mattson as respects work done
5 by him and others back in Washington on this explosiveness
6 of the bubble question. What's your best recollection as to
7 what you told the President, just insofar as this question
8 of potential explosiveness of the bubble is concerned?

9 A My recollection is that I told him about the same
10 thing that I said at the press conference at night. Using
11 conservative calculations, it would be days or a week before
12 we would reach a mixture -- but these calculations looked
13 very conservative, and a number of ideas were being
14 considered to release -- to get the bubble out of the
15 reactor vessel. And I think Vic chimed in and gave some
16 comments, and I believe Frank Press asked a few questions,
17 and maybe Roger Mattson responded to those.

18 I think we left him with the impression that it was a
19 serious problem, that we weren't satisfied that it had gone
20 completely away. I think by that time Vic Stello thought
21 the problem was way overblown, and we hadn't had an
22 opportunity to convince Roger Mattson or the Chairman of
23 Vic's views but left the Chairman with the feeling that
24 while it was a problem, it could be handled and didn't
25 require evacuation.

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1 Right before the President arrived, we did have a hall
2 meeting between the Chairman and Vic and Roger and myself,
3 and I think that's when Vic pointed out the views at the
4 site, that you couldn't get oxygen into a bubble at 1000
5 pounds. And I think that insight had been passed over back
6 in Bethesda. They had sort of taken the oxygen input number
7 and had moved on to do calculations, assuming that that was
8 the correct number.

9 Q I take it, though, at least --

10 A We were still acting -- I think when the President
11 arrived, we were still acting on the presumption that we had
12 days, even under the conservative assumptions, before a
13 drastic change in the status of the core would be required.

14 Q Am I correct, though, that the view that was
15 passed on by Dr. Mattson was that you could already be at
16 flammability and that indeed there could be a burn because
17 of some kind of possible ignition source, so at least in
18 that respect there was -- viewing everything most
19 conservatively, a possibility of burn that day?

20 A I think that was a view we found out that they had
21 when they arrived at the site. The moment it was mentioned
22 that your oxygen assumption has just got to be off of this
23 kind of case, I think their -- Roger's concern -- had
24 already gone down considerably.

25 Q So I take it you didn't pass on to the President

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1 this particular theory that, "Look, by the way, we might be
2 at flammability and there could be a burn under this or that
3 condition today"?

4 A I don't think we implied it could be today. I
5 felt we left him with the impression that it was some days
6 off, even conservatively calculated.

7 Q Directing your attention to the following Tuesday,
8 I have a record somewhere of somebody testifying to a
9 conversation involving you, Mr. Stello, Dr. Mattson, and
10 Mr. Dieckamp, in which you complained that GPU did not have
11 a plan for getting to cold shutdown. Does this relate to
12 the thing you testified earlier, or is this some other
13 complaint that you had at that time, if indeed you recall
14 any such conversation?

15 A I think the later complaint or the one you are
16 mentioning about cold shutdown was a desire to more
17 aggressively bring the temperature of the system down and to
18 establish, for example, natural circulation cooling mode.
19 And I think the utility was somewhat more inclined to
20 continue to cool the core the same way it had been cooled
21 from Wednesday afternoon on.

22 Q Well, what if anything happened after you
23 indicated in substance that there wasn't a plan to get to
24 cold shutdown?

25 A The company did come up with a plan to lower the

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1 temperature. The reason for lowering the temperature is to
2 lower the pressure in the system and lower the possibility
3 of a pipe break or equipment failure interrupting core
4 cooling. And they did devise a plan to go to natural
5 circulation, and it was a satisfactory plan. So the company
6 eventually did respond.

7 Q Okay. Over the course of Friday, Saturday, and
8 Sunday, you spoke on a number of occasions to the Governor
9 or members of his staff. During this time, did you ever
10 tell the Governor or his staff or run through with the
11 Governor and his staff the possible ways in which the
12 hydrogen bubble might be removed and what that might mean in
13 terms of having to plan for evacuation, things like that?

14 A Yes, I did.

15 Q Can you tell us some of the specific alternatives
16 you discussed with the Governor, to the extent you can
17 recall, as to how you might go about getting rid of the
18 bubble and what that might mean insofar as evacuation was
19 concerned?

20 A Usually I would take one of the staff members with
21 me to brief the Governor, and I think I took Mr. Stello and
22 Mr. Mattson and maybe others so that the Governor could see
23 some of the faces, and I would have my staff describe
24 usually something that they were closely working on.

25 But as I recall with regard to removing the bubble, we

mgcMM 1 had talked about several ways of trying to reduce it through
2 venting of the pressurizer, for example, or increased
3 letdown flow and those kinds of systems. But I think our
4 thought was that if we couldn't remove the bubble through
5 those means, we'd have to resort to depressurizing the
6 primary system -- in effect, going to very low pressure and
7 repressurizing the system with emergency safety systems.

8 I don't recall the specifics of the plan that had been
9 devised for that.

10 Q Was there ever a time Friday, Saturday, Sunday,
11 Monday when something in writing was presented to the
12 Governor or maybe something was written, transcribed? As
13 you explained things to the Governor, there would be a
14 written record of the kinds of alternatives you were
15 discussing with him?

16 A I don't recall writing anything. I don't recall
17 giving the Governor anything that we wrote. We would pass
18 on the the Governor copies of things that we may have
19 obtained from GPU, for example, and I think their plan for
20 bringing the reactor to cold shutdown is something we would
21 have taken copies to the Governor's office about and
22 explained to him what they contained.

23 Q That would have been much later, I gather --
24 sometime Tuesday or after Tuesday?

25 A Yes. And then there was the overall Commission

mgcMM 1 plan with regard to evacuation that was brought up to the
2 site by Chairman Hendrie that we gave the Governor.

3 Q Okay. I just want to show you what's been marked
4 in deposition of Commissioner Gilinsky as 5105. Is that the
5 document you just referred to in testimony? Take a look and
6 see if it does look familiar.

7 (The witness examined the document.)

8 I'm sure that't the beast.

9 A Either this document or a very similar one in
10 format and substance was brought to the site by the
11 Chairman, and we did give a copy of it to the Governor and
12 explained how it would be implemented.

13 Q By the way, is that type of document something
14 that you had asked to be preped? Was it your impression
15 that you had originally made the request that something like
16 that be generated, or was it something that was initiated by
17 NRC people back in Washington. Bethesda?

18 A I think it was originated in Bethesda. I think
19 the site's input was more in trying to decide what sort of
20 actions would be required -- in other words, back to the
21 contingency planning type of thing -- that we were
22 interested in contingency plans so that if something
23 happens, if the pump fails, what do you do next. But we had
24 not developed it to this extent.

25 So we had probably played some role in some of the items

mgcMM 1 in the table but had not requested the development of the
2 table. I think that was requested in Bethesda.

3 Q Let me see if I can clarify that. My impression
4 is that you had been -- the site people had been working on
5 a contingency, but more of if this fails, what do we do to
6 compensate for that. You hadn't, however, focused
7 necessarily on evacuation implications.

8 A That's right. Or how many failures would it take
9 to prompt a call for evacuation. Yes.

10 Q I think that this Exhibit 5105 indicates various
11 circumstances under which you at the site as Senior NRC
12 Official would have the authority to recommend evacuation
13 and in what situations somebody else would, such as the
14 Commissioners or the Chairman of the Commission. Is that
15 right?

16 A Yes.

17 Q Am I correct that this is the first time that
18 something was ever put in writing to try to memorialize your
19 authority concerning evacuation versus the Commission's?

20 A I think this is the first -- that's correct.

21 BY MR. BERNERO:

22 Q Mr. Denton, I would like to pursue some general
23 questions with you now, these things that we have. First of
24 all, is it common now for operating licenses of reactors to
25 be issued a bit at a time -- that is, a few loading license,

mgc/MM 1 then a few percent power, then a few higher percent power,
2 and so on up to full power? Is this a common or ordinary
3 procedure now?

4 A You used the word "now." Of course, we haven't
5 issued the license --

6 Q I'm referring to recent history, in the past few
7 or two -- two, three years at the most.

8 A I haven't attempted to -- I don't know the answer
9 to that. I know licenses have been issued both ways --
10 completely clean licenses that permitted people to load,
11 fuel, and go to full power, and also that in some cases
12 where there were outstanding issues involved, they would
13 prohibit the issuance of a full power license but would
14 permit the issuance of partial power licenses. We have done
15 that, so I think it's been a mixed practice.

16 Q In your experience, has the commercial operation's
17 status of the plant had any significance in the regulator
18 process?

19 A No, it hasn't.

20 Q Have you ever been contacted by a member of a
21 utility that was awaiting action on an operating license in
22 one way or another with a statement or an explanation of a
23 need to receive a license or an amendment to a license in
24 order to facilitate some financial step of that company,
25 some financial procedure?

mgcMM 1 A I remember only one instance like that.
2 Q Could you tell us what that is?
3 A I have some memory that there was such a request
4 made during the start up of the reactor in Arkansas --
5 Russellville.

6 Q The Arkansas nuclear one in Russellville,
7 Arkansas?

8 A Not that one. It was a test reactor. SEFOR,
9 something about SEFOR going critical in Christmas of one
10 year versus January the next year that made a big
11 difference, and I do remember -- and I wasn't holding the
12 job I hold now, but some sort of push was on to try to
13 complete our action so that a license could be issued in one
14 year versus another year. But that's the only -- and I
15 think that plant has been decommissioned or is no longer
16 operational. That's the only instance I remember where --

17 Q But you don't recall an instance of that sort with
18 a commercial reactor?

19 A No.

20 Q Let me turn to another question. In your earlier
21 deposition with us, you spoke of a heightened awareness of
22 sociological costs of evacuation. Does this suggest in your
23 mind the possibility of reviewing the EPA Protection Action
24 Guides and in some way modifying them?

25 (Pause.)

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1 A Not really. I think it suggests more that to
2 accomplish evacuation of the type envisioned in that EPA
3 Action Guide, you need to be very selective in siting and,
4 that it's very hard to accomplish those actions if you site
5 in densely populated areas or areas that have special
6 institutions that are difficult to evacuate.

7 Q Well, it would seem that there are already a very
8 large number of reactor sites committed, either with
9 operating reactors or reactors under construction, and there
10 are no direct controls of the development of difficult
11 facilities near them such as prisons or old people's homes
12 or things like that.

13 I don't understand your comment in saying care would
14 have to be taken in the implementation and therefore the
15 siting where it appears we have these sites.

16 A I was thinking more in the future than for
17 existing sites. For existing sites, it tells me that you
18 have to look carefully at the states' emergency plans to be
19 sure they could accomplish with any kind of reasonable
20 certainty the actions that are in the EPA guidelines. My
21 own feeling about the EPA guidelines is that they don't
22 attempt to do a balancing of the cost of evacuation. They
23 are more set at what sort of radiation levels -- perhaps
24 they do, but I was not involved in their development. And
25 I think they just tried to balance radiation risk and some

mgcMM 1 sort of vague feeling about evacuation costs rather than
2 doing it on a case by case basis.

3 Q Do I gather from your previous testimony and your
4 present discussion that you feel that the question of
5 evacuation decision is highly site specific -- or situation
6 specific is perhaps a better word?

7 A I have the feeling that the NRC as a body doesn't
8 have very good information about the cost of a local
9 evacuation, that this sort of knowledge is possessed by the
10 local and state governments, and to recommend to the state
11 to evacuate without knowing these other factors, a state of
12 readiness or the adequacy of their evacuation plans is a
13 bit presumptuous. And that's why I tended to take the view
14 that we have an obligation to inform the state as to what
15 the cost of not evacuating might be and let the state make
16 the balancing.

17 Suppose a state was also fighting forest fire and dams
18 and floods in some other part of the state -- things of
19 which we would have no knowledge perhaps. So I think it's
20 really the elected official who has to balance the cost of
21 evacuation against the radiation savings that might be made,
22 and it's our role to make sure he's fully aware of what the
23 risk of radiation exposure might be and the uncertainties in
24 those estimates.

25 Q Let me turn to an even more general area. The NRC

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1 has operated for quite some time with the presumption that
2 the licensee for a nuclear facility is primarily responsible
3 for safety and that NRC will rely on an audit review and an
4 audit inspection of that licensee to gain the necessary
5 assurance that the public health and safety are protected
6 properly.

7 Do you think in hindsight now after Three Mile Island
8 that we can continue with this basic framework for
9 regulation?

10 A Yes, I do.

11 Q Now in the safety review of plants, there has been
12 an evolution over the years of what people sometimes call
13 the design basis accident approach to reviewing the
14 acceptability of at least the nuclear reactor for
15 licensing. You have participated in this in the past.

16 Do you feel that this system can continue the use of a
17 spectrum of design basis accidents to arguably envelope the
18 safety threats within a plant design?

19 A I don't think it's adequate just by itself. And
20 you may recall that in the floating nuclear power plant
21 application, I felt we needed to look beyond design basis
22 accidents, and we did look at core meltdown accidents in
23 order to compare the risk of such plants to land based
24 plants. I also think when it comes to siting, you need to
25 look beyond design basis accidents, and in the Perryman case

mgcMM 1 we did run the so-called CRAC code which calculates
2 consequences for various core melt situations, so that I
3 could get a much better comparison of the relative merits of
4 alternative sites for accidents beyond the design basis. In
5 other words, I have some concern if you just stay with
6 design basis accidents, you are not able to discriminate
7 among alternative sites as well as you might with other
8 approaches.

9 So when I say we can stay with the audit approach -- and
10 the answer is, yes, I do -- I didn't mean to imply that we
11 stay with exactly the same system of audits that we had.
12 I'm thinking maybe we should audit differently and look in
13 different areas. But whether or not an audit is adequate, I
14 think we can do adequate reviews with audits as opposed to
15 doing a full blown review.

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1 A A grest deal of our audit review of a licensee
2 both for his performance and design analysis is based on the
3 establishment of proper quality assurance techniques. We
4 have a highly developed code of quality assurance requirements
5 for licensees.

6 Q Have you ever considered the possibility of applying
7 our own codes to the NRC staff itself?

8 A Yes. The thought has often been raised that we
9 couldn't -- as to whether we'd pass our own standards. And
10 I have considered whether or not we should adopt further ways
11 to assure that we do an adequate job.

12 Q And other ways to audit the audit?

13 A Yes.

14 Q If you proceed with a refinement of the basic review
15 approach, whatever amalgam of design basis accidents and
16 separate considerations, would you expect to include in that
17 a more specific role of the Commission in individual licensing
18 cases? Do you think that would be useful or appropriate?

19 A Well, the Commission has indicated that they do
20 want to be more involved in the issuance of all new licenses
21 and are considering ways to reach down into the process and
22 actually have the Commission make the final decisions. It's
23 an awkward form to do so under the existing framework and
24 ex parte rules, but I am sure a structure can be devised so
25 that they can make each decision.

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1 Q Well, what I'm really seeking is your personal
2 opinion of whether the Commission should come into individual
3 licensing cases as against coming into the delineation of how
4 you would refine the licensing practice, the general or
5 underlying basis for refined licensing techniques.

6 A I think there is something to be gained by having
7 the Commission get more involved in the decision to issue a
8 license. Now, how they narrow the issues down from all those
9 that are potentially to be considered in the application to the
10 ones they want to focus on is not clear to me. But I think
11 the granting of licenses is getting so political, and I use
12 that term not in the pejorative sense but in terms of people
13 who favor or do not favor the issuance of a license, I think
14 it's proper to be made by officials of the Commission.

15 Q By that you mean the Commission itself personally
16 identifies with the Commission?

17 A Yes.

18 Q Not a staff official?

19 A Yes, right.

20 MR. BERNERO: That concludes the questions I wanted
21 to ask.

22 MR. BALLAINE: Mr. Denton, we have no further
23 questions for you at this time. We greatly appreciate your
24 patience in coming back for a second day for more questioning.

25 As this is a continuing investigation, we can only adjourn

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1 it for now, but we think it's highly unlikely that we will
2 have to call you back for further questioning.

3 Again thank you very much.

4 THE WITNESS: I guess there are two things that I
5 should call to your attention on the record before we terminate.

6 The staff has published the second and final report of the
7 lessons learned study. I want to be sure you are aware of that
8 and we are transmitting it formally to you.

9 MR. BALLAINE: Good.

10 THE WITNESS: Yesterday the epicore did begin
11 operation at the site. That's all.

12 MR. BALLAINE: Okay. Thank you very much.

13 (Whereupon, at 11:50 p.m. the hearing was
14 adjourned.)

End t-9
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