

1 PRESIDENT'S COMMISSION ON THE ACCIDENT AT THREE MILE ISLAND

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3
4 PUBLIC HEARING

5 THURSDAY
6 August 2, 1979

7 Hall of Nations
8 Edmund Walsh Building
9 Georgetown University
36th Street N.W.
Washington, D.C.

10 The hearing was convened pursuant to notice at 9:10 a.m.

11 John G. Kemeny, Chairman, presiding.

12 PARTICIPANTS:

13 John G. Kemeny
14 President of Dartmouth College

15 Bruce Babbitt
16 Governor of Arizona

17 Patrick E. Haggerty
18 Retired President of Texas Instruments

19 Carolyn Lewis
20 Associate Professor of Journalism
21 Graduate School of Journalism
22 Columbia University

23 Paul E. Marks
24 Vice President for Health Sciences
25 Columbia University

26 Cora B. Marrett
27 Associate Professor of Sociology
28 University of Wisconsin

29 Lloyd McBride
30 President of United Steelworkers of America

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PARTICIPANTS: (continued)

Harry McPherson
Attorney

Russell Peterson
President of Audubon Society

Thomas Pigford
Professor & Chairman
Department of Nuclear Engineering
University of California at Berkeley

Theodore Taylor
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Anne Trunk
Resident of Middletown, Pennsylvania

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Charles Harvey
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Dauphin County Office of
Emergency Preparedness

Col. Oran K. Henderson
Director of Civil Defense
Commonwealth of Pennsylvania

Thomas M. Gerusky
Director
Bureau of Radiation Protection
Department of Environmental Resources
Commonwealth of Pennsylvania

Gordon K. MacLeod
Secretary of Health
Commonwealth of Pennsylvania

Lt. Governor William W. Scranton, III
Commonwealth of Pennsylvania

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PARTICIPANTS: (continued)

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Environmental Evaluation Branch
Division of Operating Reactors
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1 CHAIRMAN KEMENY: Will the meeting please come to
2 order. This is the opening of the fifth set of open hearings
3 of the President's Commission on the Accident at Three Mile
4 Island.

5 I have been asked by the members of the Commission
6 to make an announcement that we are going to attempt, if
7 humanly possible, to condense these hearings into a single day,
8 to leave the Commission more time tomorrow for planning for the
9 future. We all feel the pressure of our deadline coming up on
10 us, and the Commission is trying to get as much planning done
11 as possible.

12 Would counsel please call the first witness?

13 MR. HARVEY: Kevin Molloy, please.

14 CHAIRMAN KEMENY: Would you swear in the witness?

15 Whereupon,

16 KEVIN J. MOLLOY

17 was called as a witness and, after being first duly sworn,
18 was examined and testified as follows:

19 CHAIRMAN KEMENY: May I ask you to state for the
20 record your full name and your present position?

21 MR. MOLLOY: My name is Kevin J. Molloy. I'm the
22 director of the Dauphin County Office of Emergency Prepared-
23 ness, in Harrisburg.

24 CHAIRMAN KEMENY: Thank you. Counsel?

25 MR. HARVEY: Mr. Molloy, I think it would be helpful

1 for the Commission if we had an idea of what you do in your
2 position. Could you describe your duties on a day-to-day basis?

3 MR. MOLLOY: Basically, I'm in charge of a joint
4 department up in Dauphin County, the civil defense, or Emergen-
5 cy Preparedness Office, and also the County Communications
6 Center. The County Communications Center, we control the
7 police, fire, and ambulance dispatching and communications
8 frequency for the county. On the civil defense end, we assist
9 in drawing up plans for those that request it, help local
10 municipalities with filling out project applications for fund-
11 ing and provide training to the local civil defense people.

12 MR. HARVEY: Now, when did you assume this position?

13 MR. MOLLOY: I was appointed by Governor Shapp in
14 April of 1974.

15 MR. HARVEY: When you arrived in 1974, what was the
16 situation in the county with respect to emergency planning?

17 MR. MOLLOY: It was in very poor shape. The entire
18 department was in very poor shape, as far as the physical
19 facilities that we had to use. We were in very cramped space.
20 And there had not been that much planning or getting involved
21 in anything when I came on board.

22 MR. HARVEY: Did the local municipalities have written
23 plans?

24 MR. MOLLOY: No, they didn't. They did not come up
25 with any type of written plan at all, until the weekend of the

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1 particular incident. There has not been a great deal of inter-
2 a. t on the part of local municipalities to participate in an
3 emergency preparedness program.

4 MR. HARVEY: Could you give us an example of that,
5 please?

6 MR. MOLLOY: Well, several things that we did to
7 help the local directors, as an example, a resource manual,
8 which to me is an extremely important document. And it basi-
9 cally tells you where you can get certain things during an
10 emergency situation, such as school buses or things of that
11 nature. For the longest time, we tried to get the local
12 directors to come up with a resource manual. We went so far as
13 to come up with a master copy, and it put down, as an example,
14 doctors, nurses, and we left blank spaces, and all they had to
15 do was fill in the blank spaces. Out of 40 political sub-
16 divisions in Dauphin County, to the best of my knowledge, I
17 think we had two fill them out, maybe. That's one example.

18 Another example is we, at the county level, put on
19 training programs, perhaps three or four times a year, which
20 we get all our local directors in and pass down information
21 that we receive from the state or Federal Government at our
22 training seminars. And once again, I've held them in the
23 lower end of Dauphin County, I've held them at the court house,
24 which is basically in the middle of Dauphin County, and we've
25 held them in the upper end. And our normal attendance at those

1 meetings was about five or six local directors out of 40.

2 MR. HARVEY: Dauphin County includes Three Mile
3 Island nuclear power plant, does it not?

4 MR. MOLLOY: Yes, sir.

5 MR. HARVEY: Now, did you develop, during your term
6 in office, a plan with respect to Three Mile Island?

7 MR. MOLLOY: Yes, in 1975, early 1975, we developed
8 basically an operations manual, a combined resource and opera-
9 tions manual, for the emergency personnel down in the five-
10 mile area.

11 MR. HARVEY: Could you describe what you were seeking
12 to achieve by the plan?

13 MR. MOLLOY: Basically, to make sure that we knew
14 where our resources were in advance, that everybody understood
15 their responsibility during an incident. The police knew
16 exactly what they were going to do, fire, and so forth. In
17 addition, when we did come up with that, we once again explained
18 to the local directors and so forth that it is their respon-
19 sibility to also come up with a local, more comprehensive
20 plan, which met with no success at all.

21 MR. HARVEY: In other words, they didn't come up with
22 a plan?

23 MR. MOLLOY: No, not at all.

24 MR. HARVEY: Now, why was the five-mile radius
25 selected?

1 MR. MOLLOY: To the best of my knowledge, that deci-
2 sion came from the state. And I just found out recently, the
3 basis for that apparently is that at each plant, the NRC
4 requires that you have a plan for the low population zone. It
5 varies from plant to plant. And they decided to come out with
6 a standard for across the state.

7 MR. HARVEY: With a five-mile radius, would that plan
8 require you to coordinate with any other counties with respect
9 to the resources you would use?

10 MR. MOLLOY: Yes, we would coordinate with Cumberland
11 County, as an example, to get additional resources in.

12 MR. HARVEY: Turning to the Three Mile Island inci-
13 dent itself, on Wednesday, the 28th, could you describe how
14 you learned about the incident?

15 MR. MOLLOY: Well, I first got a phone call, some-
16 where in the vicinity of five to ten minutes after 7:00 in the
17 morning. I received a phone call at my residence, from
18 Margaret Riley. And she advised me that they had had an inci-
19 dent down at Three Mile Island. My basic concern was, do we
20 have to evacuate or anything. And she indicated not. While
21 Mrs. Riley was -- while I was on the phone with her -- I have
22 a fire monitor at home -- my communications center, which
23 operates 24 hours a day, was calling me over that particular
24 unit to clear my phone, which I did. And then they basically
25 advised of the same thing, that an incident had occurred. So

1 I told them that I'd be in shortly. A few minutes later, I
2 headed into the courthouse.

3 MR. HARVEY: All right. Could you describe generally
4 what your activities were during Wednesday?

5 MR. MOLLOY: Basically, during Wednesday -- well, like
6 when I first got in the courthouse, as an example, I called
7 over to PEMA, which is the state Emergency Management Agency,
8 to find out basically what was going on. And then I passed
9 the information on to some of the local directors and a couple
10 of the adjoining counties and state police, made several calls
11 to people. Basically, throughout the day Wednesday, this is
12 what we did, we took what little information we received from
13 the state and passed it on to the locals.

14 MR. HARVEY: So am I correct that the chain of infor-
15 mation would be from PEMA, the state Emergency Management
16 Agency, to your organization and to other county organizations,
17 and you, in turn, would pass that information along to the
18 municipalities?

19 MR. MOLLOY: Right. Concerning Three Mile Island,
20 the procedure that occurred was what we had planned. The site
21 notifies my office and also the state. Then the state channels
22 the information back down to me, and then I get it to the local
23 directors.

24 MR. HARVEY: So you would expect to get information
25 from the state to pass along to the localities. And then, in

1 turn, the information chain would go in reverse order from the
2 municipalities to you to the state.

3 MR. MOLLOY: Right.

4 MR. HARVEY: All right. Now, was Thursday roughly
5 the same kind of activity?

6 MR. MOLLOY: Right. Basically, during Thursday, we
7 were once again in touch with the locals throughout the day,
8 telling them that they'd better work on plans if they didn't
9 have anything.

10 MR. HARVEY: What kinds of plans were you asking them
11 to work on?

12 MR. MOLLOY: Well, just to make sure that, in the
13 event an evacuation was necessary, that they knew which way
14 they were going to let traffic flow, what resources would they
15 need, would they need extra buses, extra traffic control,
16 things of that nature.

17 MR. HARVEY: Did they have written plans at that
18 time?

19 MR. MOLLOY: No, they did not.

20 MR. HARVEY: Did any of the communities within a
21 five-mile radius of the plant have written plans?

22 MR. MOLLOY: No.

23 MR. HARVEY: All right. What happened the rest of
24 Thursday?

25 MR. MOLLOY: During Thursday, then, I met with

1 different resource groups that I knew we might deal with, like
2 the Red Cross and our radio amateur people for extra communica-
3 tions and things of that nature. So once again, we were pass-
4 ing what little information we had on to the locals. And then
5 we at our level were making our contacts with the people that
6 we normally work with.

7 MR. HARVEY: At this point, was the information chain
8 appearing to be working?

9 MR. MOLLOY: Yes, to the best of my knowledge, it
10 appeared to be at that particular time.

11 MR. HARVEY: Could you tell us what happened on
12 Friday morning?

13 MR. MOLLOY: Okay. About -- oh, once again, we were
14 there all night. And basically, from 8:00, we were in the
15 process of notifying people in the ten-mile area and so forth.
16 We were just spreading the word out a little bit further to
17 the emergency people. About 8:34 -- well, about 8:00, I
18 received a call from the state Emergency Management Agency
19 that they were still cooling the unit down, there basically was
20 no change, no off-site problems at all.

21 MR. HARVEY: That was an ordinary progress report?

22 MR. MOLLOY: Well, at that particular time, there was
23 no set schedule as far as getting reports. I would either call
24 them or they would call us, basically about every hour or two
25 hours. About 8:34 on Friday morning, I received a call from

1 a Jim Floyd, who's an employee down at the Three Mile Island
2 facility.

3 MR. HARVEY: He's employed by Metropolitan Edison?

4 MR. MOLLOY: Correct. And he wanted me to have the
5 state Emergency Management Agency call him immediately. A
6 rather rapid phone conversation. I don't remember it word for
7 word. So then I immediately got a hold of the state and
8 explained to them that they were to call this gentleman back.

9 MR. HARVEY: If I can stop you there, an employee of
10 Metropolitan Edison called you and asked you to call the state
11 to have the state call him?

12 MR. MOLLOY: That's correct.

13 MR. HARVEY: Did he say the reason for it?

14 MR. MOLLOY: I don't recall, as I said, the specifics
15 of the particular conversation, ~~other than it was~~ very short
16 and that he wanted the state to get in touch with him as
17 rapidly as possible.

18 MR. HARVEY: Okay. And you called the state and
19 asked them to get in touch with him?

20 MR. MOLLOY: That's correct.

21 MR. HARVEY: What happened then?

22 MR. MOLLOY: Okay, then about 8:54 that morning, I
23 received a call from the state, the Pennsylvania Emergency
24 Management Agency, saying that they'd had another incident on
25 site, but that no evacuation was needed. And, as I say, that

1 was about 8:54. So I passed that information on to the local
2 people and so forth. About 9:25, I received a call from Col.
3 Henderson.

4 MR. HARVEY: Who is Col. Henderson?

5 MR. MOLLOY: He's the director of the state Emergency
6 Management Agency. He indicated -- once again, I don't remem-
7 ber the specifics -- but basically that there had been some
8 type of release and that a decision was being made, and
9 probably very shortly I'd be getting a call, saying that we
10 were to start an evacuation procedure.

11 MR. HARVEY: Well, did you get the impression that
12 this was just advance notice, that the official call was on its
13 way?

14 MR. MOLLOY: That's correct.

15 MR. HARVEY: All right. What did you do?

16 MR. MOLLOY: Okay, immediately what we did is -- I
17 had other staff members in there with me -- we put the fire
18 companies on standby and notified the different groups, talked
19 to the schools in the area, and so forth. I went over WHP
20 radio, which is the primary emergency broadcast station, and
21 advised that, you know, there had been an incident down there
22 and, as a result of the incident, there was a possibility that
23 we might have to evacuate, and if we did, that this is what
24 the people should take with them and basically this is where
25 they should go. And we picked out two staging areas, one in

1 Harrisburg and one in Hershey.

2 MR. HARVEY: So that you got a call from Col.
3 Henderson, saying, in effect, that you would be getting a call
4 very soon to evacuate, and that was sort of advance notice?

5 MR. MOLLOY: That's the way I interpreted the call.

6 MR. HARVEY: And then you went on the radio to tell
7 people that if they had to evacuate, this is what they should
8 be doing?

9 MR. MOLLOY: That's correct.

10 MR. HARVEY: And what that broadcast?

11 MR. MOLLOY: Yes, it was.

12 MR. HARVEY: All right. Did you receive the official
13 call shortly after going on the radio?

14 MR. MOLLOY: No, we didn't. The next call we got
15 from the state -- and I personally don't recall receiving it --
16 but my staff has indicated to me it was somewhere around 10:00,
17 with an update on the situation.

18 MR. HARVEY: And 10:00 was roughly the time that the
19 governor issued his advisory for people to take cover?

20 MR. MOLLOY: From what I can understand. I did not
21 hear it myself. We were rather busy at that particular time.

22 MR. HARVEY: So that from what you knew, you'd
23 received a call that an evacuation was about to take place,
24 you'd notified people over the radio, and then no evacuation
25 did take place.

1 MR. MOLLOY: That's correct.

2 MR. HARVEY: Now, during Friday, did you start to
3 expand the plans that you'd worked on from five miles to a
4 larger radius?

5 MR. MOLLOY: That was, I think, late Friday night
6 that we started expanding the plans. After I went on the
7 radio and after the initial notification of everybody, then we
8 got in touch with the locals and we told them that if they
9 didn't have anything planned up to this stage of the game,
10 they had better get it done fast, because we weren't sure what
11 was going to take place.

12 MR. HARVEY: And then later on Friday, you would have
13 to start planning for a ten-mile radius?

14 MR. MOLLOY: It seems, as I say, late Friday night
15 that we really started getting into the ten-mile planning
16 effort.

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1 MR. HARVEY: Did that present any particular prob-
2 lems as opposed to the five mile plan?

3 MR. MOLLOY: Yes, it did. If you got involved with
4 a five mile situation, that was strictly an intercounty eva-
5 cuation. In other words we had the shelter capacity within
6 the county. We had resources from the northern end of the
7 county that could be utilized and once we expanded out to ten
8 miles, that literally cut away about half of our shelter capa-
9 bility, half of our resources that we could use and also it
10 included some of the hospitals.

11 MR. HARVEY: So, from five miles to ten miles, you
12 would have to start coordinating with other counties and
13 start worrying about hospital evacuations?

14 MR. MOLLOY: That is correct.

15 MR. HARVEY: Was the ten mile radius expanded that
16 weekend?

17 MR. MOLLOY: On Saturday morning is when we started
18 some planning towards the 20 mile and, of course, we geared
19 more into that throughout the day on Saturday and late Satur-
20 day.

21 MR. HARVEY: All right. At whose request did you
22 begin to plan for 20 miles?

23 MR. MOLLOY: This was based on information received
24 from the state agency.

25 MR. HARVEY: All right. Now, we can go up to late
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1 Saturday night or early Saturday morning. Was an information
2 flow problem developing at the county level?

3 MR. MOLLOY: To the best of my knowledge that sort
4 of seemed to crop up sometime Saturday and that is when we
5 were getting calls from citizens saying that they had heard
6 this on the radio or --

7 MR. HARVEY: Could you give us a specific example?

8 MR. MOLLOY: Well, as far as the bubble was concerned,
9 it seemed to me as though we found that out from a citizen who
10 had something on the radio about a bubble. The exact time,
11 whatever, I just can't remember, but that type of thing or
12 there had been a release.

13 MR. HARVEY: The citizen would call your office to
14 ask about information?

15 MR. MOLLOY: Right. They would ask us to verify it
16 or what did we know about it.

17 MR. HARVEY: And what was your response?

18 MR. MOLLOY: Well, in many cases we didn't know and
19 then what we had to do is we had to turn around and call the
20 state agency and say we just received a phone call and some-
21 body heard something on the air and a lot of times they were
22 not aware of what was going on either in terms of what was
23 being disseminated to the public and it just presented a
24 problem.

25 MR. HARVEY: Now, as of Saturday night, did your

1 organization and Senator Gekas call Lt. Governor Scranton's
2 office about this information problem?

3 MR. MOLLOY: Yes, that was somewhere around 11 o'clock
4 or 11:30 at night and my commissioners were in there and, as
5 I say, at that particular time, we felt that we were not get-
6 ting information in advance. It just appeared that the public
7 knew, perhaps, more of what was going on down at the site than
8 we did. Senator Gekas called the Governor's office; couldn't
9 get through to him and then he called the Lt. Governor's office.
10 I don't remember who he talked to, but basically what he said
11 is that we were unsatisfied with the type of information that
12 we were getting and that we were very seriously considering
13 an evacuation ourselves the next morning unless the problems
14 were straightened out to our satisfaction.

15 MR. HARVEY: What happened then?

16 MR. MOLLOY: Well, I received a call ~~had~~ from the
17 Lt. Governor about 2 o'clock that morning. He asked if we
18 were contemplating an evacuation. I indicated that we were
19 and I explained to him what we felt our problem was in terms
20 of information flow. He indicated several reasons why we
21 shouldn't do it and I told him that we had discussed it, but
22 that we would like to see him in the morning and that we would
23 make our decision based on what was accomplished at that parti-
24 cular meeting.

25 MR. HARVEY: Could you describe what happened at the

1 meeting?

2 MR. MOLLOY: Basically, once again, we went over the
3 fact that we felt that we were not getting information, that
4 we didn't appreciate press conferences being called and us
5 finding out things second, third, fourth, fifth hand. We also
6 explained to him what we had accomplished in terms of our
7 planning effort. We explained to him, as an example, problems
8 that you run into with the hospitals. You don't just pick up
9 a hospital and move it.

10 MR. HARVEY: Did you discuss the lead time involved
11 in evacuation at all?

12 MR. MOLLOY: There was a discussion concerning times;
13 times that it would take. As an example, with the hospitals,
14 we gave him -- one of my staff members gave him a time of about
15 48 hours to move the hospitals.

16 MR. HARVEY: Did he seem surprised by that?

17 MR. MOLLOY: He was surprised; extremely, I think.
18 I don't think that he was fully aware of some of the problems
19 that we were facing at our particular level and, perhaps, this
20 was part of the problem, too.

21 MR. HARVEY: Would you say that the information flow
22 problem was the biggest problem that you encountered during the
23 evacuation sequence over the weekend?

24 MR. MOLLOY: I would say, basically, it was -- the
25 chain of command during any incident at all -- you have a chain

1 of command for your flow of information and a chain of command
2 that you utilize for requests for assistance and so forth and
3 the requests for assistance, up and down the chain, there was
4 no problem. We would make a request and get it verified and
5 so forth. There was no problem there. But it seemed this
6 informational flow somewhere at the state level, it just fell
7 apart. It was not going as planned.

8 MR. HARVEY: Thank you. I have no further questions.

9 CHAIRMAN KEMENY: Thank you, Counsel.

10 Mr. Molloy, could I ask you, clearly you must have
11 given a great deal of thought since the accident about all of
12 the things that happened. If you wanted to make one, two or
13 three major recommendations for improvements, what would you
14 consider would be most important?

15 MR. MOLLOY: Well, I think that we have to have some
16 changes in the laws that govern emergency preparedness. As I
17 say -- and I don't think it is, perhaps, unique to Pennsylvania,
18 but at the local level, where you get involved with a local
19 volunteer director who is not paid or supported by his local
20 elected officials, not required to have any training and things
21 of that nature, that is a real problem because your emergency
22 planning and preparedness starts at the local level. It
23 doesn't start at the federal, state or county level. That is
24 one big recommendation.

25 The second recommendation, if an event like this ever

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1 happens in the future, I wish people at higher levels of
2 government than the county would learn what the chain of com-
3 mand is, which is very simple and just follow the chain of
4 command. It just saves everybody an awful lot of headaches.
5 Those, just off the top of my head, are basically recommenda-
6 tions that I would make.

7 CHAIRMAN KEMENY: Professor Marrett.

8 COMMISSIONER MARRETT: I would like to get clear on
9 what happened with reference to your contact with the locali-
10 ties. I believe you said, after having learned of the event
11 at Three Mile Island, you contacted the localities and indica-
12 ted a need for them to develop plans with reference to evacua-
13 tion.

14 MR. MOLLOY: We notified the local municipalities
15 and basically what we were telling them was that if you have
16 something, you had better review it and if you don't have some-
17 thing, then you really had better get your act together.

18 COMMISSIONER MARRETT: Now, as I understand your
19 county plan, it includes a whole section on evacuation, does
20 it not?

21 MR. MOLLOY: Our county plan mainly listed the major
22 evacuation routes that would be used to take people from out
23 of the danger area. What you need at the local level -- and
24 let's take Middletown as an example -- they have to have a
25 plan that shows where all of the small streets -- you know,

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1 which way the traffic is going to flow, where they need traf-
2 fic control, things of that nature. That has to be done down
3 at their particular level. It can't be done at a county level.

4 COMMISSIONER MARRETT: But you are indicating that
5 a number of localities did not have such detailed plans at the
6 time. Is that right?

7 MR. MOLLOY: None of them did.

8 COMMISSIONER MARRETT: Then what assurance was there
9 to the general public that, in fact, the county could have
10 evacuated people successfully, if, in other words, all of these
11 details were missing? Was there any assurance that you could
12 have evacuated?

13 MR. MOLLOY: Well, I think in the five mile zone,
14 we definitely could have. The basic thing with having a plan
15 in writing, of course, is that it facilitates an operation.
16 In Dauphin County, since 1974, we have been involved in several
17 major emergencies, flood, tornado, things of this nature and
18 each and every time the situation has cropped up, it has been
19 handled extremely well and so forth, efficiently, by the emer-
20 gency personnel. And I think, unfortunately, this is always
21 the attitude is, well, everytime something has happened in the
22 past, we have handled it. We have evacuated people. We have
23 moved them and so forth; therefore, we don't need anything in
24 writing.

25 COMMISSIONER MARRETT: You are suggesting that there

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1 was not very much attention to developing plans because plans
2 were peripheral to the response. Is that the way it has been
3 viewed?

4 MR. MOLLOY: Well, like I say, I think that most of
5 the people felt if anything comes up, we will handle it and
6 we don't have to have anything in writing.

7 COMMISSIONER MARRETT: But apparently, post TMI, your
8 idea about developing additional plans suggests that that was
9 a limited view. In other words, you are talking about planning
10 now. So, is this a changed position?

11 MR. MOLLOY: Well, I am saying at the local level
12 they felt that they didn't need anything in writing.

13 COMMISSIONER MARRETT: I am concerned about the local
14 as related to the county, because the county plan assumes cer-
15 tain actions on the part of localities. If the localities have
16 not developed the plans, to what extent could the county re-
17 spond effectively?

18 MR. MOLLOY: Well, basically, what we would have
19 done is as the problems cropped up in terms of traffic control
20 and things of that nature, is as they made requests for assis-
21 tance and so forth, filled them as rapidly as possible.

22 COMMISSIONER MARRETT: One final question with re-
23 ference to the planning activities at the county level, when
24 you were developing the Dauphin County plan, to what extent
25 did the TMI site plan make any difference? In other words, did

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1 you take into account the TMI plan?

2 MR. MOLLOY: Not really. Ours was geared strictly
3 offsite.

4 COMMISSIONER MARRETT: Were you familiar with that
5 plan?

6 MR. MOLLOY: Not extremely familiar with it at all,
7 no.

8 COMMISSIONER MARRETT: Any integration with the
9 other planning that has gone on?

10 MR. MOLLOY: The basic interconnect between the
11 site and the county would be through the communications chan-
12 nels of notification that an incident has occurred. That is
13 about where the biggest planning effort was made with the
14 utility.

15 COMMISSIONER MARRETT: So, in terms of identifying
16 the kinds of events that could place, that was not something
17 that would have been coordinated. It was on a communication
18 on the transmission of information. Is that correct?

19 MR. MOLLOY: That is correct. Yes, ma'am.

20 CHAIRMAN KEMENY: Dr. Marks.

21 COMMISSIONER MARKS: Mr. Molloy, does your office
22 have any activity or involvement in terms of the prevention
23 or minimizing adverse effects on the health and safety of the
24 public in the event of a disaster?

25 MR. MOLLOY: Yes, sir. The Emergency Preparedness

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1 Organization is to, hopefully, try and alleviate as many prob-
2 lems as possible.

3 COMMISSIONER MARKS: Right. Above and beyond the
4 actual physical evacuation?

5 MR. MOLLOY: Yes, sir.

6 COMMISSIONER MARKS: Could you describe for us what
7 sort of procedures you have in place, what sort of programs
8 you have ongoing with respect to public education or other
9 activities whose goals are to minimize or prevent adverse
10 effects to the health of the public in the event of an accident
11 such as the TMI accident?

12 MR. MOLLOY: Well, just to cite a couple of examples,
13 as I say, we try to have a training program for local directors,
14 so that they know what resources they have on hand in their
15 community that they can, in the event of an emergency situation,
16 literally put their hands right on it or if they don't have it,
17 they can let us know what they don't have and then we can get
18 it fast. The faster you can get help in, say, during a flood,
19 you can move people out faster, get shelters open. We work
20 very closely with the Red Cross. They man our shelter facil-
21 ities -- to make sure that we have shelters, cots, blankets
22 and things of that nature. And then even after the fact, as
23 an example, we will take a flood. We try to line up volunteers
24 to work with the fire companies and other existing units to
25 help clean things up and get the people back in their homes

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1 as rapidly as possible.

2 COMMISSIONER MARKS: Do you have any programs de-
3 signed to try and inform or educate the public with regard to
4 the real or potential hazard, say, of radioactivity?

5 MR. MOLLOY: Not dealing specifically with that. In
6 the past, myself, my assistant, we have gone out and gave talks
7 to many groups to try and make them aware of the program. I
8 know of one particular time, we got some pamphlets in. I
9 think it was entitled "In Time of Emergency", basically what
10 you do in an emergency situation. We had an article in the
11 paper about it, if anybody was interested, as far as the gen-
12 eral public was concerned, to get a copy, just give us a call,
13 give us your name and address and we will send you a copy. And
14 out of about 230,000 residents of Dauphin County, we got a
15 request, I think, for one or two.

16 COMMISSIONER MARKS: One or two.

17 MR. MOLLOY: That was about it.

18 COMMISSIONER MARKS: Has there been any increased
19 interest in these activities since the accident?

20 MR. MOLLOY: There has been a marked increase in
21 interest on the part of the public, but, I think, more import-
22 antly, on the part of the local, elected officials and the
23 local emergency preparedness personnel, who didn't have the
24 time before. What we hoping to do, now that we have the in-
25 terest there, to expand it into more than just strictly

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1 related to TMI. Now, is a good time to go with the whole ball
2 of wax. Unfortunately, I think, perhaps a month or so after
3 the incident occurred, I set up a meeting -- I had Dr. Pali-
4 dino, who is the dean of engineering up at Penn State Univer-
5 sity. He agreed to come down on his own time. He brought
6 another gentlemen with him. I think it was Roger Grundland,
7 a nuclear physicist, as I recall and I had Bill Dornsife from
8 the State Bureau of Radiological Protection and basically what
9 we wanted to do was to just explain, since things had calmed
10 down and so forth, what basically had happened down at the
11 plant. What radiation is and what it can do -- just a very
12 small educational program, as it were. And I sent letters out
13 to all of the local civil defense directors, all of the local
14 police chiefs, fire chiefs. We sent out, I guess, 125 or 130
15 letters, something like that, and we had 39 people show up for
16 the program.

17 COMMISSIONER MARKS: Despite the fact that in
18 essence the accident really isn't over yet, because the cleanup
19 job isn't completed, have you developed a registry yet of health
20 professionals or health care institutions qualified to deal
21 with accidents such as the Three Mile Island, within Dauphin
22 County?

23 MR. MOLLOY: No, I have not done it. My medical
24 group chief would be better qualified to answer that and,
25 obviously, he is not here right now.

1 COMMISSIONER MARKS: Do you think such a registry
2 is useful?

3 MR. MOLLOY: I would assume it would be. I know
4 that, as an example, the site has an agreement with Hershey
5 Med Center to handle those particular types of problems, but
6 this is something that should be done.

7 COMMISSIONER MARKS: Could you let us know -- you
8 know, check with your health chief and let us know specifi-
9 cally what has been done with regard to such a registry since
10 the accident?

11 MR. MOLLOY: Yes.

12 COMMISSIONER MARKS: Do you have any recommendations
13 with regard to procedures, plans, support, interaction with
14 the utility or the State Department of Health or Bureau of
15 Radiological Protection that would help you in sort of mini-
16 mizing or preventing adverse effects on the health of the pub-
17 lic?

18 MR. MOLLOY: I think we are going to have to work
19 very closely with those groups. I know I have discussed with
20 Mr. Gerusky, who is the head of the State Bureau of Radiologi-
21 cal Protection, that we have to come out with more information
22 for the general public and the emergency personnel that they
23 can understand; really written in layman's terms and so forth.
24 Up until this point, we have been extremely busy with trying
25 to refine what we have accomplished thus far. In addition,

1 there are a few municipalities that have yet to get us their
2 written plans and we are trying to get that. Plus, there is
3 the regular day to day and then all of the testimony -- the
4 differenc committees that we have appeared before. Perhaps,
5 when things calm down a bit --

6 COMMISSIONER MARKS: In other words, we ought to let
7 you go home and get to work.

8 Has Mr. Gerusky responded to your request yet?

9 MR. MOLLOY: We were discussing it coming down in
10 the car, as a matter of fact, and we will be getting together
11 to work on some projects.

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1 COMMISSIONER MARKS: Again, I would appreciate it if
2 you could keep the Commission informed as to the reponse you
3 are getting.

4 CHAIRMAN KEMENY: Commissioner McBride?

5 COMMISSIONER MCBRIDE: In respect to your work for
6 the County, I would assume that you had occasion to participate
7 in conferences across the state or perhaps nationally with res-
8 pect to the kind of work that you are responsible for? Is that
9 true?

10 MR. MOLLOY: At the state level?

11 COMMISSIONER MCBRIDE: At the state level.

12 MR. MOLLOY: Yes, sir.

13 COMMISSIONER MCBRIDE: Are the circumstances that you
14 describe for Dauphin County typical of circumstances across the
15 State of Pennsylvania, or were they the exception?

16 MR. MOLLOY: You mean in terms of local apathy?

17 COMMISSIONER MCBRIDE: Preparedness, apathy, yes.

18 MR. MOLLOY: I don't really feel that I would be
19 qualified to say that. I think Colonel Henderson might.

20 COMMISSIONER MCBRIDE: You have no feel for that?

21 MR. MOLLOY: Well, I don't feel it is unique to
22 Dauphin County.

23 COMMISSIONER MCBRIDE: I beg your pardon?

24 MR. MOLLOY: I don't feel the situation is unique to
25 Dauphin County.

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G 2 1 COMMISSIONER MCBRIDE: I see. That is all.

2 CHAIRMAN KEMENY: Governor Peterson?

3 COMMISSIONER PETERSON: Mr. Molloy, you testified
4 earlier that Mr. Henderson, head of the Pennsylvania Emergency
5 Planning Association -- whatever it is called, called you on
6 Freiday morning to say that you would be getting an order to
7 evacuate in five minutes. From whom do you take your orders to
8 initiate an evacuation?

9 MR. MOLLOY: In that particular instance I was under
10 the impression that we would be getting the call from the
11 Governor's office.

12 COMMISSIONER PETERSON: Is that clear that you don't
13 evacuate unless you get a call directly from the Governor's
14 office?

15 MR. MOLLOY: No. If the situation, when it initially
16 occurred had been severe enough that the people down at the
17 utility felt that an evacuation should be undertaken right off
18 the bat when we received the initial phone call from the site
19 they were to advise us of that particular thing. I think some
20 people are under the impression that the Governor is the only
21 that can order an evacuation and that is not really, really the
22 case. In this particular instance the Governor would have
23 issued the order because it involved so many counties. Well,
24 to cite you an example, we had a train wreck in the county in
25 one local municipality and the local director ordered an area

1 evacuation. So an evacuation order doesn't necessarily have to
2 come from the Governor's office.

3 COMMISSIONER PETERSON: Could you have ordered the
4 evacuation to implement your five mile evacuation plan?

5 MR. MOLLOY: My commissioners and I could have done
6 that, yes.

7 COMMISSIONER PETERSON: In planning for an emergency,
8 do you have some specific plans for dealing with such things
9 as the release of radioactive iodine, or radioactive cesium?

10 MR. MOLLOY: No, sir.

11 COMMISSIONER PETERSON: For controlling the use of
12 milk or food that might be contaminated?

13 MR. MOLLOY: No, sir.

14 COMMISSIONER PETERSON: Okay.

15 CHAIRMAN KEMENY: Could I follow that question up?
16 To whom would you turn for that kind of information or that
17 kind of help?

18 MR. MOLLOY: To the people at the Bureau of Radio-
19 logical Protection. You know, they would take the information
20 that they would receive from the plant as an example and make
21 their decisions concerning what action should be taken or not
22 taken, pass it to PIMA, the state agency, and in turn it would
23 come down to us.

24 CHAIRMAN KEMENY: That could for example say that
25 none of the milk should be used, or anything?

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MR. MOLLOY: Yes, sir.

CHAIRMAN KEMENY: Commissioner Trunk?

COMMISSIONER TRUNK: Mr. Molloy, I would like to ask you if an accident like this were to happen in the winter time, how long would it take you to evacuate Middletown, or the five mile radius, with snow on the ground?

MR. MOLLOY: Well, we feel basically that we could evacuate the five mile zone, and we have always felt this, in about six hours. Perhaps you would need an hour to get road crews out.

COMMISSIONER TRUNK: On a normal winter day we can't get our roads cleaned for a week.

MR. MOLLOY: Well, some of the side roads perhaps -- the major evacuation routes -- there would be extra problems. You know, I want to make it clear that, you know, when we say we can accomplish an evacuation we are not saying that it would be done without problems. It would be done as safely and efficiently as possible. An interesting thing -- and I would assume that part of why you would be referring to winter is possibly because of a lot of accidents and things of that nature which could cause a problem, of course --

COMMISSIONER TRUNK: I am not so much worried about accidents. Our interstate highways do not get ploughed, it takes them a while to get ploughed, our streets in the towns are impassable. You can't go through them. I mean, I just can't

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sg 5 1 see you evacuating in six hours.

2 MR. MOLLOY: Well, as I say, the six is perhaps more
3 summerish but as I indicated a minute ago it is going to take
4 longer in the winter, obviously, to move people out. Just to
5 say that it is going to take ten hours or twelve hours is ex-
6 tremely difficult. It depends on many factors. If we were to
7 have an ice storm which we have been noted to have, no snow but
8 a lot of ice, you are obviously going to have quite a problem
9 there. The only thing we would hope to do there is get a hold
10 of Penn DOT and the local crews and get them to work a little
11 bit faster than they perhaps might otherwise do.

12 COMMISSIONER TRUNK: Okay.

13 CHAIRMAN KEMENY: Thank you very much, Mr. Molloy.
14 You are excused. Would counsel please call the next witness?

15 MR. HARVEY: Colonel Henderson?

16 CHAIRMAN KEMENY: Would counsel swear in the witness
17 please?

18 Whereupon,

19 COLONEL ORAN K. HENDERSON
20 was called as a witness and, after being first duly sworn, was
21 examined and testified as follows:

22 CHAIRMAN KEMENY: Would you please state your full
23 name and your current position for the record?

24 COL. HENDERSON: Oran K. Henderson, Director of the
25 Pennsylvania Emergency Management Agency, Commonwealth of

1 Pennsylvania.

2 CHAIRMAN KEMENY: Thank you. Counsel?

3 MR. HARVEY: Colonel Henderson, could you describe
4 just what the Pennsylvania Emergency Management Agency is and
5 what its function is in state government?

6 COL. HENDERSON: The Agency is responsible for the
7 judicious planning and the coordination and commitment of re-
8 sources in times of emergency whether manmade, natural, or
9 enemy attack.

10 MR. HARVEY: How does it coordinate with the state
11 agencies?

12 COL. HENDERSON: Well, we have a very close working
13 relationship but under emergency conditions we activate our
14 emergency operation center which includes membership from all
15 of the Pennsylvania State agencies having emergency responsi-
16 bilities.

17 MR. HARVEY: And in conjunction with the day to day
18 operations of the agency, have you drafted a plan for emergencies
19 in the State of Pennsylvania?

20 COL. HENDERSON: We have.

21 MR. HARVEY: Could you describe the plan and what
22 its objectives are?

23 COL. HENDERSON: This is a family of plans designed to
24 give guidance and direction to counties and to state agencies
25 for their areas of responsibility during any kind of an emergency

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1 situation.

2 MR. HARVEY: Is part of that plan devoted to emergency
3 planning with respect to nuclear incidents?

4 COL. HENDERSON: Yes.

5 MR. HARVEY: Has the plan been submitted to the
6 Nuclear Regulatory Commission for concurrence?

7 COL. HENDERSON: No.

8 MR. HARVEY: Could you describe the chain of command
9 within the state government in a radiological emergency? In
10 other words, where would information flow from one agency to
11 another in order to initiate an evacuation or other protective
12 action?

13 COL. HENDERSON: Under a normal situation, the plant
14 has the responsibility for notifying one, the county in which
15 the plant is geographically located, and secondly, my organi-
16 zation. My organization in turn has a responsibility for noti-
17 fying the Bureau of Radiation Protection and the office of
18 the Departmental Resources; secondly, notifying those counties
19 that are affected within the five mile area; and thirdly, noti-
20 fying other states and state agencies. Following our noti-
21 fication to the Bureau of Radiation Protection of DER, the
22 Bureau of Radiation Protection is responsible for notifying --
23 for contacting the facility and determining the parameters of
24 the incident; returning to us with a proposed course of action.

25 MR. HARVEY: All right. So your agency works in

1 conjunction with the Bureau of Radiation Protection, the Bureau
2 advising you when protective action is necessary, and then your
3 agency, in turn, implementing the action. Is that correct?

4 COL. HENDERSON: That is correct.

5 MR. HARVEY: Now, do I understand that the nuclear in-
6 cident plan that PEMA, your agency, has concerns of -- or at
7 the time of the incident was limited to a five mile radius?

8 COL. HENDERSON: That is correct.

9 MR. HARVEY: Could you tell us how that five mile
10 radius was reached?

11 COL. HENDERSON: Yes. Based on the three nuclear sites
12 facilities we have within the Commonwealth of Pennsylvania, the
13 safety annex prepared by the NRC for each of those installations
14 required one at Peach Bottom, which is in York County, to have
15 the data to identify the low population zone as four and a half
16 miles. At Beaver County, the low population zone was identi-
17 fied as 3.6 miles. And at Three Mile Island, the low popu-
18 lation zone was identified as two miles.

19 MR. HARVEY: Those are NRC requirements, the low
20 population zone?

21 COL. HENDERSON: Yes.

22 MR. HARVEY: Those do not originate with the state?

23 COL. HENDERSON: That is correct.

24 MR. HARVEY: All right.

25 COL. HENDERSON: So, as a consequence, to be uniform

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1 within the state, we decided that since the largest one was
2 4.6 miles, that we would make an arbitrary decision to plant
3 out for any evacuations to the range of five miles.

4 MR. HARVEY: So you were trying to make this a uniform
5 requirement for all nuclear facilities within the state?

6 COL. HENDERSON: That is correct.

7 MR. HARVEY: Are there any nuclear facilities with-
8 in the state whose five mile radius, or radii, encompass another
9 state border?

10 COL. HENDERSON: The five mile range does not encom-
11 pass another state except Peach Bottom and, as I recall, it is
12 just a bare minimum of a broad pencil dash into Maryland. How-
13 ever, the ten mile area does include Maryland in that instance.
14 And Beaver County in western Pennsylvania -- the ten mile area
15 includes both West Virginia and Ohio.

16 MR. HARVEY: So there are two nuclear facilities in
17 Pennsylvania which, if you were to extend the five mile radius
18 to ten miles, you would be coordinating with other states in
19 emergency planning. Is that correct?

20 COL. HENDERSON: That is correct.

21 MR. HARVEY: If you could turn to Wednesday the 28th
22 and describe to us how you first became aware of the Three Mile
23 Island incident?

24 COL. HENDERSON: At approximately 7:25 Wednesday mor-
25 ning I was in the office and my operations officer came in and

10 1 notified me that the watch officer, my watch officer, had re-
2 ceived notification at 7:02 of an on site incident. I main-
3 tain a 24 hour watch officer, duty officer, status in my Agency.
4 However, my watch officer does not remain in the office but re-
5 mains at home and after four o'clock in the evening we have a
6 diverter on our switchboard and we dial this individual's num-
7 ber so any calls coming in to the Pennsylvania Emergency Manage-
8 ment Agency during non-duty hours is automatically diverted to
9 the watch officer's home. So I found out at 7:25 from my
10 operations officer.

11 MR. HARVEY: And what were you told?

12 COL. HENDERSON: I was told that there was an inci-
13 dent at Three Mile Island. That there had been an emission.
14 However, it was being contained on the Island.

15 MR. HARVEY: All right. Now, during that Wednesday
16 morning did the event seem to get more serious?

17 COL. HENDERSON: At 7:35 that morning we received a
18 second call from Three Mile Island indicating that there had
19 been another release and that there was a potential that it was
20 going off site in a direction of 30 degrees, and recommending
21 that we be prepared to evacuate Brunner Island a. Goldsboro.

22 MR. HARVEY: Those are two locations in close proxi-
23 mity to the plant?

24 COL. HENDERSON: That is correct.

25 MR. HARVEY: Having received that information, what

1 did you do?

2 COL. HENDERSON: We immediately notified the Bureau
3 of Radiation Protection for guidance and direction. We notified
4 the three counties that were involved with York County being
5 notified first, and notifying the York County to get an im-
6 mediate state of readiness to execute an evacuation.

7 MR. HARVEY: So that you were telling them to be on
8 the alert but not necessarily to evacuate yet?

9 COL. HENDERSON: That is correct.

10 MR. HARVEY: And you had called the Bureau of Radi-
11 ation Protection to verify that the releases were off site. Is
12 that correct?

13 COL. HENDERSON: That is correct.

14 MR. HARVEY: All right. Did you receive any advisory
15 from the Bureau of Radiation Protection?

16 COL. HENDERSON: Subsequently we received work back
17 from, I believe it was Miss Riley, from the Bureau of Radiation
18 Protection that the emission had halted and that it had been
19 contained on the Island and that -- well, there was no need for
20 any evacuation; that we should stand down any alerted forces.

21 MR. HARVEY: And did you pass that information along
22 to the counties?

23 COL. HENDERSON: I did.

24 MR. HARVEY: So is it fair to say that the chain of
25 command and the information flow on Wednesday morning at that

1 point, at any event, was functioning just as it was planned to
2 function with you getting a notification, advising the Bureau
3 of Radiation of Protection, and awaiting for a word from them,
4 and at the same time placing the counties on alert until such
5 time as the Bureau of Radiation Protection could make a recom-
6 mendation to you concerning protection action. Is that a fair
7 statement?

8 COL. HENDERSON: Yes, that is correct.

9 MR. HARVEY: All right.

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1 MR. HARVEY: Could you tell us what your activities
2 were generally on Wednesday and Thursday?

3 COL. HENDERSON: Primarily we were encouraging
4 the affected counties to refine their evacuation plans to
5 ensure that they were prepared. We were continuing to
6 receive reports both from, well, primarily through the
7 Bureau of Radiation Protection, and, also, conducting several
8 press conferences.

9 The --

10 MR. HARVEY: Excuse me. Were you getting
11 information directly from the Governor's office at that
12 point? In other words, were you participating in some of
13 the press conferences?

14 COL. HENDERSON: I was participating with the
15 Lieutenant-Governor in the press conferences, yes.

16 MR. HARVEY: So, is it fair to say that on Wednesday
17 and Thursday it was primarily a watch and wait situation, with
18 the information flow acting according to plan?

19 COL. HENDERSON: Yes.

20 MR. HARVEY: All right. Could you tell us what
21 happened on Friday morning?

22 COL. HENDERSON: On Friday morning about 8:40, we
23 received a call from Kevin Molloy that somebody from the
24 plant wanted us to get hold of them in a hurry. I forget who
25 it was.

1 I went into the Operations Center, and at that time
2 I had two operators who were on the line with Three Mile
3 Island. One was Carl Keene, my communications officer, and
4 another was Jim Cassidy from my operations officer. They
5 both had somebody from Three Mile Island on the phone at that
6 time.

7 As soon as Carl Keene hung up the phone, he turned
8 to me and the operations officer and said, "They have got a
9 serious incident at Three Mile Island. They have reported
10 a reading of 1200 milliroentgens at 600 feet. They are
11 recommending that we get prepared for evacuation downwind.
12 They are prepared to evacuate non-critical personnel from the
13 Island now, and they have their own buses and do not need any
14 help from us."

15 MR. HARVEY: Did your duty officer say anything to
16 you that indicated whether or not this caller was excited?

17 COL. HENDERSON: As best I can recall the first
18 statement Carl Keene made to me, "This guy is going ape,"
19 highly excited.

20 MR. HARVEY: What did you do as a result of receiving
21 that call?

22 COL. HENDERSON: I had the operations officer
23 immediately notified. First of all, I had one of my
24 operations people get me a ground wind reading, a wind reading
25 from both the National Weather Service and, also, from the

1 airport. Also, operations officer notified Bureau of
2 Radiation Protection and notified the affected counties.

3 MR. HARVEY: That was according to the plan as it
4 was on Wednesday?

5 COL. HENDERSON: That is correct, and I, personally,
6 notified the Lieutenant-Governor.

7 MR. HARVEY: All right. Then what happened that
8 morning?

9 COL. HENDERSON: At about 0915 hours I received a
10 telephone call from a Mr. Collins, from Bethesda, Maryland,
11 NRC, informing me that or asking me if I had the latest
12 report from Three Mile Island.

13 I told him I had. He asked me what did I know.
14 I repeated to him the information we had gotten. He said,
15 "That is the same information we have. We are recommending
16 that you execute immediately a 10-mile evacuation around
17 Three Mile Island."

18 MR. HARVEY: What did you say?

19 COL. HENDERSON: I told him we had no plans for
20 a 10-mile evacuation, that we were giving consideration to
21 a possible 5-mile evacuation.

22 About a few minutes later, within 5 or 10 minutes
23 after this I received a second call from Mr. Collins to
24 inform me that the recommendation that he had just made to me
25 was not only, was not his recommendation but had the backing

1 or support, and I am confused now whether he said, "The
2 Commissioner" or "The Commissioners," but it lent emphasis
3 in my mind, at least, to the seriousness of this incident.

4 MR. HARVEY: Was this the first time that you had
5 received a direct recommendation from the NRC during this
6 incident?

7 COL. HENDERSON: That is correct.

8 MR. HARVEY: All right. What did you do as a
9 result of the Collins' call recommending evacuation 10 miles
10 downwind?

11 COL. HENDERSON: About the same time that I hung
12 up the phone from Collins, I received a, oh, after I had
13 received the first call from Collins, I then notified the
14 Lieutenant-Governor of this recommendation, and the Lieutenant-
15 Governor asked me to stand by, that he would get back to me
16 immediately.

17 I then received a call almost immediately after
18 this second call from the Governor, asking me how well I knew
19 this man Collins, and what our working relations with him
20 were. I told him that Collins from, I did not know him
21 personally, but from the people in my office, that he enjoyed
22 a good reputation.

23 MR. HARVEY: Did the Governor ask for your
24 recommendation?

25 COL. HENDERSON: He did.

1 MR. HARVEY: And what did you say?

2 COL. HENDERSON: I recommended we evacuate.

3 MR. HARVEY: On what basis?

4 COL. HENDERSON: On the basis of not having any
5 further information but one, a report from TMI, secondly a
6 report from Collins, and thirdly, and which I told the
7 Governor that I have not yet had the recommendation from the
8 Bureau of Radiation Protection, but lacking that recommenda-
9 tion, I have no alternative but to recommend that we evacuate
10 at 5 miles.

11 MR. HARVEY: And your reason for selecting the
12 5-mile radius as opposed to the 10-mile downwind recommendation
13 by the NRC?

14 COL. HENDERSON: It was two things; one, the winds
15 were very unstable. Following this notification from Three
16 Mile Island, within 20 minutes the wind had shifted almost
17 180 degrees, what wind there was; the fact that we did not
18 have a 10-mile evacuation plan.

19 MR. HARVEY: Did you later find out that morning
20 what the recommendation of the Bureau of Radiation Protection
21 was with respect to the NRC's recommendation for evacuation?

22 COL. HENDERSON: Yes, a few minutes later I had
23 a telephone call from the Lieutenant-Governor, asking me to
24 come over to the Governor's Office immediately.

25 I told the Lieutenant-Governor that I wanted to get

1 some things going on some emergency planning for a 10-mile
2 evacuation and asked his permission to send my deputy. He
3 said, "Okay."

4 I walked into my deputy's office to ask him to get
5 over to the Governor's Office, and Bill Dornsife from the
6 Bureau of Radiation Protection was in there with my deputy,
7 and he told me that they had been trying to call me on the
8 telephone and had not been able to get through and that the
9 emission had halted at Three Mile Island and that the Bureau
10 of Radiation Protection was recommending against any
11 evacuation and that Mr. Gerusky, the Director of the Bureau
12 of Radiation Protection was on the way, was over at the
13 Governor's Office at that time, so advising the Governor.

14 MR. HARVEY: So that he had tried to call you from
15 the Bureau of Radiation Protection to make the recommendation
16 according to the plan and could not get through. Is that a
17 fair statement?

18 COL. HENDERSON: That is correct.

19 MR. HARVEY: So, he came over physically to your
20 office to try to stop any evacuation that the NRC had
21 recommended?

22 COL. HENDERSON: Mr. Gerusky had sent Mr. Dornsife
23 over to so inform us. That is correct.

24 MR. HARVEY: And no evacuation under the NRC
25 recommendation, at least a 10-mile downwind evacuation was

1 undertaken that morning, was it?

2 COL. HENDERSON: That is correct.

3 MR. HARVEY: But was the radius extended from
4 5 miles to 10 miles and then from 10 miles to 20 miles
5 over the course of that weekend?

6 COL. HENDERSON: Over the course of that day, yes,
7 Friday. Almost immediately we notified the counties, the
8 three affected counties, well, by this time now, we are up
9 to four counties. We are, also, including Dauphin County
10 within the 10-mile area, I mean, including Cumberland County.

11 We notified as of Friday morning these counties to
12 be prepared or to extend their plans out to the 10-mile range.
13 At 10 o'clock that morning, a little before 10, I notified
14 the risk counties that the Governor would be advising all
15 people within the 10-mile area to remain under cover the rest
16 of the morning. The Governor's press officer made that
17 statement then about 10 o'clock that morning.

18 MR. HARVEY: How did the 20-mile radius come about?

19 COL. HENDERSON: About 8:30 that evening, I was in
20 the Governor's Office, and Mr. Denton arrived for the first
21 time to meet with the Governor, and within his assessment
22 of potential incidents that might occur at Three Mile Island,
23 he indicated that it was prudent that we have plans for
24 precautionary evacuations out to a range of 20 miles.

25 MR. HARVEY: Did you discuss the amount of lead time

1 you might have for evacuation?

2 COL. HENDERSON: No.

3 MR. HARVEY: All right. Did Mr. Denton?

4 COL. HENDERSON: Yes -- no. This is the first time
5 that I heard the 20-mile figure thrown out.

6 MR. HARVEY: So that as of from Friday morning
7 to that meeting at 8:30 on Friday evening, a 5-mile radius
8 had been extended to 10 miles, and then the 10-mile radius
9 extended to 20 miles for planning. Is that a fair statement?

10 COL. HENDERSON: That is correct.

11 MR. HARVEY: Could you tell the Commissioners the
12 ramifications of extending those radii?

13 COL. HENDERSON: Within the 5-mile area we have
14 approximately 36,000 people living within that area. We have
15 a small number of nursing homes, but basically it is primarily
16 family-type dwellings and businesses in this particular area.

17 At the 10-mile area, it takes in approximately
18 135,000 people. There are several nursing homes, and three
19 major hospitals.

20 The 20-mile area includes a population of
21 approximately 700,000 people, at least 13 hospitals, a
22 major prison and a considerable number of nursing homes
23 requiring special care handling devices.

24 MR. HARVEY: And the 20-mile radius plan had to be
25 written up over that weekend. Is that right?

1 COL. HENDERSON: That is correct.

2 MR. HARVEY: I have no further questions.

3 Thank you.

4 CHAIRMAN KEMENY: Colonel Henderson, I think most
5 of the Commissioners have problems with the various distances
6 and how they were arrived at. Do you have any knowledge
7 directly as to how NRC arrives at these various distances
8 you mentioned for the low population zone?

9 COL. HENDERSON: I have asked the same question, and
10 it has been explained to me, and I am not certain I can
11 explain it, but I have been told by NRC that the low population
12 zone is based upon the safety factors at the plant, that the
13 design -- it takes into consideration not only population,
14 but also, the design features and the redundancy of safety
15 devices, and some way they come up with this formula and
16 although I expressed it in miles, it is actually expressed
17 in meters in the report.

18 CHAIRMAN KEMENY: I believe you mentioned that
19 the smallest distance was the one connected with Three Mile
20 Island.

21 COL. HENDERSON: 3200 meters, yes.

22 CHAIRMAN KEMENY: Yes, and it had the smallest
23 number, presumably because it was judged to be the safest
24 plant?

25 COL. HENDERSON: That is what I have been led to

1 believe.

2 CHAIRMAN KEMENY: Now, the extension from 5 -- I
3 understand the reasoning of the state wishing a uniform
4 5-mile limit. I am not asking about that. What reasoning
5 did you, personally, hear that led first to 10 miles and then
6 to 20 miles?

7 COL. HENDERSON: I was not so surprised when I
8 heard the 10 miles because the 10-mile figure has been
9 debated for at least the six months prior to this time as to
10 whether the safety areas around nuclear power plants should
11 be extended, but this conversation, with me has been primarily
12 with other state Civil Defense Directors, and some of them
13 have been taking this route, and I met with the Washington
14 State Director, and she had decided to go out 8 miles, but
15 there did not appear to me to be any general uniformity, but
16 the 10-mile one did not strike me as strange, since I had
17 been over six months hearing other states that were at least
18 giving consideration to extending it out somewhat further. The
19 20 one, I have never had any rationale for going out to the
20 range of 20 miles.

21 CHAIRMAN KEMENY: What kind of problems did that
22 involve for you, for example, you mentioned the 20-mile
23 radius would include the prison. How do you evacuate the
24 prison?

25 COL. HENDERSON: We had forces standing by, buses,

1 and additional hand irons and all of the paraphernalia that
 2 were needed, and we had a new location in Wayne County where
 3 the prisons would have been; there were over 1200 prisoners
 4 there, where they would have been evacuated to, and the
 5 responsible department had forces standing by prepared to
 6 execute such an evacuation on order.

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1 CHAIRMAN KEMENY: How about -- you mentioned even
2 with 10 miles, I believe you said there were three major hos-
3 pitals. What does it involve to evacuate major hospitals?

4 COL. HENDERSON: Well, there were several things
5 that happened starting actually on Friday. The doctors of
6 all of these hospitals, through our Department of Health,
7 started reducing the patient load within these hospitals.
8 People who could be released were released. People who were
9 in or scheduled to come in for elective surgery were cancelled,
10 and as a consequence, our population went down.

11 We made a survey of all of the hospitals to deter-
12 mine those who were litter cases and those who could otherwise
13 move and determined what the unmet needs were. We placed in
14 the way of doctors, nurses, ambulances, and so forth, and we
15 placed these requirements of our unmet needs, after we had
16 determined what else we could supply from other state resources,
17 upon the federal government, and they in turn determined where
18 they could supply us with the necessary resources.

19 So we would have had the problem of moving in a
20 large number -- in fact, I think it was somewhere in the
21 neighborhood of 400 additional ambulances that we would need
22 from outside of the state resources. There were several
23 hundred doctors and nurses involved who had been identified
24 either through Red Cross or by military sources who were pre-
25 pared to be moved into the area or into the area of the

1 receiving hospitals.

2 So there is a great amount involved, and I would
3 prefer to defer to Dr. MacLeod this afternoon, who could
4 explain more particular problems associated with the hospital
5 evacuations.

6 CHAIRMAN KEMENY: I have one final question, and
7 that is, I am asking here for a pure guess, but you are an
8 experienced emergency management officer. Suppose there had
9 been a major release on Wednesday morning and an order to
10 evacuate, let's say, 10 miles -- I won't probe the 20 miles,
11 but 10 miles -- what do you think would have happened?

12 COL. HENDERSON: We would have evacuated it. Even
13 -- I don't think we should undersell the ability of the Ameri-
14 can people to take care of themselves. When the Governor or
15 when the Commissioner, the County Commissioner, or others go
16 on the radio on the emergency broadcast system and identify
17 the area to be evacuated and tell people to evacuate, people
18 will evacuate. The fire departments and the police depart-
19 ments and everybody will shoulder in to do what needs to be
20 done.

21 We see it happen, not daily, but periodically, in
22 floods in the Commonwealth of Pennsylvania. Eighty percent
23 of our communities are built within the 100-year flood plain,
24 so we experience a lot of floods and a lot of evacuations.
25 We experience precautionary evacuations, especially on the

1 great number of chemical spills that we have within the
2 Commonwealth of Pennsylvania. We have at least one a month
3 where we have to do some precautionary type evacuation. Now,
4 we are not talking about 35,000 people, I agree with that,
5 but we are talking about a community of 800 or 1,000 that we
6 pick up and move.

7 People help people, and people do move and they do
8 evacuate. I don't think we should undersell that we need a
9 strong organization where -- and everybody has to go and
10 rehearse an evacuation. It is not necessary. But the prob-
11 lems of once you evacuate the people, of having the mass care
12 centers to take care of those people, the food to take care
13 of them, and the other business, requires the kind of an
14 organization, emergency management organization.

15 CHAIRMAN KEMENY: May I just follow that up for
16 one second, because we had heard in much earlier testimony
17 that the concern about evacuation was that evacuations are
18 very dangerous and often evacuations themselves lead to a lot
19 of injuries. Is that your experience, since you mentioned
20 you have had a number of evacuations for many causes?

21 COL. HENDERSON: Absolutely not. There is no
22 scientific data available from studies going back to the
23 second World War when London was -- when over a million and
24 a half women and children were evacuated from London and over
25 2 million additional people from London evacuated voluntarily.

1 From there on, there is no single evacuation that has ever
2 been studied where they have ever proven panic was a primary
3 concern.

4 Now, I am not talking about a fire in a theater
5 where you can't get out the doors and things of this nature,
6 but I am talking about a deliberately planned or even an
7 emergency planned evacuation as a result of water, result of
8 war, and so forth and so on. Stress and strain; panic, no.

9 CHAIRMAN KEMENY: Thank you.

10 Professor Marrett?

11 COMMISSIONER MARRETT: I would like to turn to the
12 PEMA plan as identified in the annex for TMI. According to
13 the plan, there are three different types of accidents that
14 are identified: the unplanned release to the Susquehanna
15 River, potential release to the atmosphere, and release to
16 the atmosphere as a result of system failure. How was this
17 division arrived at or how was the classification scheme
18 developed?

19 COL. HENDERSON: I am sorry, I am not familiar with
20 the document that you are referring to. Is that our Annex E?

21 COMMISSIONER MARRETT: Yes. Are you -- well, what
22 has happened with reference to defining what types of accidents
23 would demand response by PEMA? To what extent have you worked
24 on identifying different kinds of accidents?

25 COL. HENDERSON: Subsequent to this incident or --

1 COMMISSIONER MARRETT: No, before the incident.

2 COL. HENDERSON: Oh, before the incident. We had
3 identified, and I do not have it in front of me, three kinds
4 of incidences. There was the -- one was the incident at the
5 plant that did not involve the public in any manner. It was
6 an incident at the plant.

7 The second incident was an on-site incident or an
8 incident in which the public would be involved either by the
9 evacuation of people from the plant to a hospital or some
10 involvement on the part of the public.

11 The third incident was a general site emergency at
12 which time -- where there would be a major release or an
13 incident in which precautionary protective action measure
14 would need to be taken by the public.

15 COMMISSIONER MARRETT: And how were these incidents
16 defined? Who had responsibility for defining the different
17 kinds of incidents that might occur?

18 COL. HENDERSON: This has always been -- my impres-
19 sion is it is a judgment of the plant.

20 COMMISSIONER MARRETT: PEMA has not defined for
21 itself the kinds of incidents that might require a response?
22 Are you saying that it is a matter of the plant determining
23 what kinds of emergencies occur and PEMA's response to those,
24 or has there been any effort to ask what would constitute an
25 accident, what would constitute an event which would demand

1 PEMA response? I am simply trying to find out whether there
2 has been any attempt to get into the definition of events
3 demanding response on the part of your agency.

4 COL. HENDERSON: Any kind of -- any time -- first
5 of all, it is the judgment -- it has been my interpretation
6 that it is the judgment of the plant when they notify us as
7 a Class I, II, or III incident, that once we are notified --
8 we are not notified of any of the technical details of the
9 incident. It is our policy and our standard operating pro-
10 cedure that we immediately notify our Bureau of Radiation
11 Protection.

12 The Bureau of Radiation Protection telephones, then,
13 the Island and determines -- or whatever nuclear site it is --
14 and determines in the protective actions or the actions that
15 we, PEMA, should take, and notifies us accordingly.

16 COMMISSIONER MARRETT: The TMI site plan does
17 differentiate between on-site, off-site emergencies. The
18 annex does differentiate these three types, and they get into
19 questions of technical developments; for example, the one
20 having to do with potential release identified free fall of
21 loaded spent fuel cask, complete loss of cooling capacity.
22 So in some way there has been an attempt to define what tech-
23 nical development there must have been at the plant to demand
24 a response on the part of the Pennsylvania agency.

25 So I am not quite clear on how this has developed,

1 if indeed what you are suggesting is you simply respond to
2 the plant having said there has been something that happened.
3 Is that what I understand, that for you it will not matter
4 what type of accident has occurred; you simply need to know
5 whether there has been something for which there needs to be
6 a response?

7 COL. HENDERSON: That is correct, and we then depend
8 on our Bureau of Radiation Protection for a discussion of the
9 technical information in layman's terms to us, with a recom-
10 mended course of action.

11 COMMISSIONER MARRETT: Then has there been any
12 response --

13 CHAIRMAN KEMENY: One moment, Professor Marrett.
14 I am trying to follow the lesson we learned so far that in
15 case of a potential emergency, it is good to inform the pub-
16 lic. I know many members of our audience have noticed that
17 a fire truck stopped in front of this building.

18 (Laughter.)

19 As a matter of fact, we may be very grateful that
20 you are here, Colonel Henderson. We may need your advice.
21 But the latest information we have is that there was a small
22 electrical fire in another part of the building. The elec-
23 tricity has been turned off, and the recommendation we are
24 getting is that there is no need for evacuation at this time.

25 (Laughter.)

1 COL. HENDERSON: I am delighted to hear that. I
2 recommend everybody remain cool.

3 (Laughter.)

4 CHAIRMAN KEMENY: Thank you very much, Colonel.
5 Go ahead, Professor.

6 COMMISSIONER MARRETT: In terms of defining, then,
7 when the agency gets called in, has there been any input from
8 PEMA with reference to the TMI site emergency plan, or is it
9 again simply responding to that existing plan?

10 COL. HENDERSON: I think from our agency's viewpoint,
11 we are responding to the plan rather than input into their
12 plan. We are concerned with, primarily, with the reporting
13 procedure and that the reports are made and that we in turn
14 notify the Bureau of Radiation Protection, upon whom we look
15 to for the recommendation of our course of action, the course
16 of action that we should take.

17 COMMISSIONER MARRETT: All right. One of the
18 things that has been at least reported is that there is a
19 great deal of planning activity that is going now within the
20 state of Pennsylvania, including, of course, the localities
21 and their plans. What assurance is there that there will be
22 any coordination in the definitions of accidents and the
23 planned response? One might get the feeling that there is
24 probably so much activity that the question is, how is it all
25 going to insure any protection of health and safety? Is there

1 the chance that this will be terribly disjointed and far too
2 much activity? What is your agency doing to coordinate the
3 various plans, the various definitions and responses within
4 the state?

5 COL. HENDERSON: Within the past two weeks, we have
6 met with all of the power plants within the Commonwealth of
7 Pennsylvania, both the three that are on line and the two that
8 are coming on line, to resolve the very issue that you are
9 talking about.

10 As a consequence, we have come with, instead of
11 having three categories, we have reduced it down to two. One
12 is an administrative kind of an incident where there is no
13 effect; however, NRC requires notification. The second one
14 covers everything else, all emergencies.

15 So, hopefully, by having it reduced to these two
16 kinds of incidents, naturally we are going to get more calls,
17 but it does not -- it leaves out some of the guesswork as to
18 whether this is a Class I, a Class II, or a Class III, by
19 having one administrative notification and an emergency noti-
20 fication, emergency phases -- two categories, I'm sorry.

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CHAIRMAN KEMENY: Professor Pigford was next.

COMMISSIONER PIGFORD: As to these plans, do you know some criteria as to what radiation levels would be the threshold for initiating evacuation?

COL. HENDERSON: Yes, sir; between 1 and 5.

COMMISSIONER PIGFORD: One and 5 what? One and 5 what?

COL. HENDERSON: Upon the receipt of between 1 to 5 roentgens, we would consider evacuation.

COMMISSIONER PIGFORD: I see. Those are the criteria by the State of Pennsylvania.

COL. HENDERSON: Those are the criteria that I understand are outlined by NRC which is part of our plan, which is part of the Bureau of Radiation's protection -- our Bureau of Radiation's protection, guidance to us, as included in our plan.

COMMISSIONER PIGFORD: This means that the state has adopted that criteria.

COL. HENDERSON: That is correct.

COMMISSIONER PIGFORD: Their criterion on -- I suppose that is a whole body irradiation.

COL. HENDERSON: That is correct.

COMMISSIONER PIGFORD: Is there another criterion on the thyroid irradiation?

COL. HENDERSON: There is. ~~It is~~ ~~greater~~ ~~than~~ ~~that~~, but I can't think -- I can't recall right now.

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1 COMMISSIONER PIGFORD: Would it be something like
2 25 rems thyroid?

3 COL. HENDERSON: That is correct.

4 COMMISSIONER PIGFORD: Now, when you received this
5 recommendation from NRC on evacuation, what was your under-
6 standing of the estimated radiation exposure that would occur?

7 COL. HENDERSON: 1.2.

8 COMMISSIONER PIGFORD: I see. So then the estimated
9 exposure would not have reached your criteria. Is that correct?

10 COL. HENDERSON: It was in the zone of consideration,
11 but it was not high in that zone.

12 COMMISSIONER PIGFORD: Was it your understanding, then,
13 that NRC was saying they estimated that some individual could
14 receive as high as 1.2 rems whole body?

15 COL. HENDERSON: Yes.

16 COMMISSIONER PIGFORD: I see. At any particular
17 location? Was that specified?

18 (Pause.)

19 COL. HENDERSON: I am uncertain at this time, without
20 referring to my records, whether we were given a wind direction
21 by either the plant or the NRC at that particular time. The
22 NRC were talking about evacuation downwind, so I am fairly
23 comfortable with --

24 COMMISSIONER PIGFORD: I understand. From your
25 knowledge now, was that a correct estimate of the radiation

1 exposure that could have been received?

2 COL. HENDERSON: Now, no. It is my understanding
3 that although that was the reading over the plant, that was
4 not the reading outside the plant proper.

5 COMMISSIONER PIGFORD: Now, the reading over the
6 plant, I think the record shows, was on Friday morning by
7 helicopter, 1.2 rem per hour. Is that correct?

8 COL. HENDERSON: That is correct.

9 COMMISSIONER PIGFORD: Now, could you please tell
10 me how you then conclude -- now, that is a rate of radiation
11 exposure. Your criteria are in terms of an accumulated exposure
12 over some given time, not in terms of rate. Is that correct?

13 COL. HENDERSON: That is correct.

14 COMMISSIONER PIGFORD: And so it would not be correct
15 to take the 1.2 rems per hour and compare it to a 5 rem
16 integrated exposure, would it?

17 COL. HENDERSON: No. You are correct.

18 COMMISSIONER PIGFORD: Now, is it correct that your
19 criteria go further and talk about probable evacuation within
20 the -- between the plant -- or within the low population zone
21 if radiation exposures were to be greater than 5 rems whole
22 body? Is that correct?

23 The thing I am emphasizing is within the low popula-
24 tion zone.

25 COL. HENDERSON: I don't think our plan per se makes

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1 any reference to low population zone.

2 COMMISSIONER PIGFORD: Have you or your agency re-
3 viewed the evacuation plan for the TMI-2 facility?

4 COL. HENDERSON: We have a copy of their plan.

5 COMMISSIONER PIGFORD: Have you reviewed it?

6 COL. HENDERSON: I have not personally; my people
7 have.

8 COMMISSIONER PIGFORD: Well, the statement by the
9 utility is that the State of Pennsylvania Radiation Protection
10 Guide values for probable evacuation of the low population
11 zone are greater than 5 rems whole body, and so forth. That
12 is the source of my question. Does that now refresh your
13 memory on this subject?

14 COL. HENDERSON: No, I am sorry, it doesn't.

15 COMMISSIONER PIGFORD: All right. Well then, let
16 me tell you what I am getting at. And again, a question that
17 was raised earlier: Your agency has reviewed the utility's
18 evacuation plan, you reviewed the establishment of the low
19 population zone. Do you recall what radiation exposure the
20 low population zone is calculated for, such that a person just
21 at that zone level, if not evacuated, would receive how many
22 rems of radiation? Do you recall that?

23 COL. HENDERSON: No, sir.

24 COMMISSIONER PIGFORD: You stated a moment ago it
25 was your understanding that NRC uses the 5 rem criterion which

1 you are using?

2 COL. HENDERSON: Yes.

3 COMMISSIONER PIGFORD: Are you familiar with the
4 regulation: 10CFR100 which state that the criteria for the
5 low population zone are 25 rems whole body?

6 COL. HENDERSON: No, sir.

7 COMMISSIONER PIGFORD: Are you familiar with that
8 regulation at all?

9 COL. HENDERSON: I am only familiar with it by
10 title. When we get into the actual technical details concern-
11 ing roentgens and rems and so forth, we depend upon our Bureau
12 of Radiation Protection.

13 COMMISSIONER PIGFORD: All right. Then I will direct
14 it this way. As I said, the utility is stating that the state's
15 protective guide values are such that evacuation within the
16 low population zone will occur if a person within that zone
17 receives greater than 5 rems whole body. Now then, let me
18 make this proposition to you. If the low population zone has
19 been calculated under the guidelines of the federal regulations,
20 such that a person from an accident would receive 25 rems, then
21 isn't that inconsistent with the state adopting the low popula-
22 tion zone as being the area to be evacuated?

23 Your criteria are 5; the federal are 25. Isn't that
24 inconsistent?

25 COL. HENDERSON: It appears so. 617 165

1 COMMISSIONER PIGFORD: Provided my proposition is
2 correct.

3 COL. HENDERSON: Yes.

4 COMMISSIONER PIGFORD: Then I would like then to
5 leave this as an observation, and maybe you might want to
6 consider it and respond to it later. If you would please
7 review, is the statement that I have quoted from the utility's
8 evacuation plan correct -- and it appears on their plan, revi-
9 sion 6, 1978, stating that your criteria for the low popula-
10 tion zone of 5 rems -- is that correct? And I think it may
11 take some review.

12 Then, secondly, is it correct that the guidelines
13 by NRC in fact state that the low population zone in the
14 distance you put it earlier shall be calculated in fact on the
15 basis of 25 rems?

16 Then those are the two questions I am just going to
17 leave at this time.

18 COL. HENDERSON: All right, sir, thank you.

19 COMMISSIONER PIGFORD: Thank you.

20 CHAIRMAN KEMENY: Let's see -- Professor Pigford,
21 just so I want to be sure I understand it -- if your numbers
22 as quoted are correct, that would mean that the Pennsylvania
23 State's criteria are stricter than those of NRC. Is that not
24 correct?

25 COMMISSIONER PIGFORD: Chairman Kemeny, I don't think

1 it means necessarily that. If one were to recalculate the --
2 and I should ask this as a question -- if one were to recalculate
3 the low population zone for the TMI facility on the basis of
4 5 rems, it would seem logical that it would be at a greater
5 distance than the one you quoted earlier, if the one you quoted
6 earlier was calculated for 25 rems. Is that not correct?

7 COL. HENDERSON: It sounds reasonable. I would like
8 to defer to Tom Gerusky who is the next witness to that point.

9 CHAIRMAN KEMENY: I see. So, Professor Pigford, is
10 the point that if 25 rem criterion was used, the low population
11 zone may have been defined as smaller?

12 COMMISSIONER PIGFORD: Yes, sir. I think that is
13 the point of the question I am leaving.

14 CHAIRMAN KEMENY: I see. Thank you very much. Dr.
15 Marks was next.

16 COMMISSIONER MARKS: Colonel Henderson, I would like
17 to turn to a somewhat different area. Could you tell us in what
18 ways PEMA is involved in the education of the public as regards
19 radiation hazards?

20 COL. HENDERSON: Yes. We have a couple areas. One
21 is we had prepared, several years ago, a booklet titled "What
22 You Should Know About Radiation," which we were proposing to
23 distribute to citizens living within the vicinity of power
24 plants within the five-mile area. That was never distributed.
25 We are in the process of having it printed. In fact, it is to

1 be printed by the end of this month.

2 We also have a series of films on radiation from our
3 film library, which we loan to groups and organizations. We
4 also have a course of instruction titled "Your Chance To Live,"
5 which has some radiation matters involved in it, which is a
6 vehicle for students in public schools from 9, 10, 11-year
7 grades.

8 Those are those primarily.

9 COMMISSIONER MARKS: Why wasn't the publication
10 distributed?

11 COL. HENDERSON: We had internal difficulties of
12 getting concurrences for its distribution before its printing.

13 COMMISSIONER MARKS: Could you be more specific,
14 please?

15 COL. HENDERSON: We sent the document several years
16 ago to the Bureau of Radiation Protection and to members of our
17 council, the Pennsylvania Emergency Management Council --
18 Agency -- gets its overall guidance and direction from a council
19 chaired by the Lieutenant Governor, with members from the Senate
20 and the House and from the secretaries of various departments.

21 The Bureau of Radiation Protection has a council, and
22 I am not certain of its name nor of its membership, and the
23 Bureau of Radiation Protection sent copies to the membership of
24 this council that provides its guidance.

25 And several of the members were concerned that it

1 appeared that we might be highlighting the hazards associated
2 with fixed nuclear sites unfairly, and that the document could
3 more appropriately be included in an overall document treating
4 all kinds of disasters, and therefore they withheld their
5 concurrence. I am not certain they withheld their concurrence,
6 or at least they would rather we would not publish it, and as
7 a consequence we did not.

8 COMMISSIONER MARKS: You now have approval to distrib-
9 ute it: Or did I misunderstand you? You said you were now
10 printing it up.

11 COL. HENDERSON: We are printing it up. We went on
12 our own to have it printed. We did not go back for concurren-
13 ces.

14 COMMISSIONER MARKS: And you do intend to distribute
15 it?

16 COL. HENDERSON: Yes.

17 COMMISSIONER MARKS: And is it your impression that
18 if this had been distributed, if it had been read, it might
19 have decreased ~~what~~ the confusion in the minds of the public
20 with regard to the hazards of radiation, such as existed
21 apparently in ~~progn~~ women and mothers with small children,
22 and so on, as to at what risk they were?

23 COL. HENDERSON: I think it would have been a good
24 public service to have had such a document out, and that the
25 document, although it is not in great detail, it is a very brief

1 treatment of the various areas of what radiation is. I per-
2 sonally feel that people would have been perhaps less concerned,
3 and a lot of the questions that we were receiving during the
4 incident would have been answered, assuming that people had
5 held onto copies of it or had read it.

6 COMMISSIONER MARKS: Could you give us some idea how
7 active is your loan film service? In other words, is this
8 something where there is a daily request for a film, or is it
9 very occasional? And could you give us some idea about the
10 relative activity prior to and subsequent to the accident?

11 COL. HENDERSON: Well, basically there has been no
12 increase. We show our films, and our films are a very active
13 activity. Our County Civil Defense Directors, almost every
14 time they are called upon to speak before the public, ask for
15 copies of our films.

16 Somewhere between 500,000 and 750,000 people on an
17 average per year see our films. I don't have a breakdown of
18 the ones associated with nuclear radiation, but they are all
19 active.

20 We have approximately 125 different titles, and about
21 ten copies of each one. We send them out to anybody who wants
22 them, and all they have to do is return -- send them back, pay
23 for the postage coming back.

24 COMMISSIONER MARKS: Also, could you give us some
25 more specifics about these courses of instruction? You indicated

1 that you provide these courses at a high school level, or
2 primary school level, or community level?

3 COL. HENDERSON: Up till about three or four years
4 ago, the Federal Government initiated this program of "Your
5 Chance to Live," which is a series of about a dozen courses.
6 It has the handbook, the teaching guides, and everything, and
7 it was very active in our school systems throughout the
8 Commonwealth of Pennsylvania.

9 Four or five years ago, the Federal Government with-
10 drew its support, could not purchase any more manuals and so
11 forth, and the program, except for one or two schools, sort of
12 phased out.

13 Last summer, almost a year ago, I started an active
14 program to get this thing re-introduced back into the schools
15 and get it onto cassettes. Between last summer and March, we
16 had been able to meet with 19 of the 26 school districts within
17 the Commonwealth of Pennsylvania -- intermediate units within
18 the Commonwealth of Pennsylvania -- and there was about a 90
19 percent agreement from the schools that they wanted this, the
20 school principals, they wanted this and they would re-introduce
21 it back into the school system.

22 So that is moving along smartly, and I am hopeful that
23 this September with the new school year that we will see an
24 increased attention in this particular area.

1 COMMISSIONER MARKS: Would you have any other
2 recommendations for expanding or changing the way you are
3 providing public education programs related to radiation health
4 matters?

5 COL. HENDERSON: I cannot think of one right offhand.

6 COMMISSIONER MARKS: Well, again, this might be a
7 question you would want to think about with your staff and
8 come back to the Commission. We would appreciate it.

9 COL. HENDERSON: There are a lot of things I would
10 like to, but then I have to turn around and think of my budget
11 and think of my limited resources and -- you know, TMI was a
12 very serious thing, but at the same time, we have much more
13 serious incidences and emergencies going on. It is a problem
14 of priorities and a problem of resources.

15 COMMISSIONER MARKS: But it would be helpful to the
16 Commission --

17 COL. HENDERSON: I would be able to think about it.

18 COMMISSIONER MARKS: -- and without your particular
19 concerns with respect to economic constraints, if you do have
20 some ideas about expanding or changing programs of public
21 education related to radiation, we would appreciate hearing
22 from you.

23 CHAIRMAN KEMENY: May I just comment, Col. Henderson,
24 this may be the only time in your life somebody asks you to do
25 this without consideration of budget, so it is the chance of a
lifetime.

1 COMMISSIONER MARKS: The Commission is unlikely to be
2 able to provide you with any funds. Isn't that true, Mr.
3 Chairman?

4 With regard to health professionals, do you have any
5 educational programs with regard to the potential hazards to
6 health with respect to radiation disasters oriented toward
7 health professionals? I will tell you why I am asking that, it
8 is our impression that a number of physicians in the community
9 really did not have adequate knowledge with regard to potential
10 hazards of radiation to deal with the questions from their
11 patients, so I am wondering whether PEMA has any program
12 directed toward health professionals?

13 COL. HENDERSON: We do not.

14 COMMISSIONER MARK: You do not?

15 CHAIRMAN KEMENY: Could I follow up? To your
16 knowledge, does any other state agency have such a program?

17 COL.. HENDERSON: I do not know if they have the
18 program, but certainly our Department of Health and the Bureau
19 of Radiation Protection has the technical expertise to conduct
20 such programs. Whether they have the money and the wherewithal,
21 I am not comfortable with that.

22 We do meet with the professional organizations of
23 doctors, nurses, and so forth, periodically, but we discuss
24 primarily mass care and the triage, and the tagging and all of
25 this kind of thing. We do not get into the professional

1 training.

2 COMMISSIONER MARKS: Was PEMA involved in notifying
3 the hospitals in the 10-mile area to begin reducing their
4 patient census?

5 COL. HENDERSON: We did not do this, FEMA did not do
6 it directly. It is my understanding that our Department of
7 Health did make such a recommendation to the hospitals.

8 COMMISSIONER MARKS: Do you know what stage they made
9 that recommendation? At what point in the sequence of events
10 following the accident they made that recommendation?

11 COL. HENDERSON: It was sometime Friday, but I am
12 not sure when.

13 COMMISSIONER MARKS: Friday. Were you involved in
14 terminating the emergency response, in other words, in notifying
15 the hospitals that they could begin normal admissions programs
16 again?

17 COL. HENDERSON: No, I think this was an independent
18 decision made on their part.

19 COMMISSIONER MARKS: On their part? Based on public
20 information?

21 COL. HENDERSON: Yes, sir.

22 COMMISSIONER MARKS: Thank you, sir. Thank you, Mr.
23 Chairman.

24 CHAIRMAN KEMENY: We have three more Commissioners
25 who have asked for the floor and I think we will limit it to

1 those three. Governor Peterson goes next.

2 COMMISSIONER PETERSON: Mr. Chairman, Mr. Henderson,
3 it appears that there are two bases for evacuating, one after
4 the information is available showing that there has been a
5 radioactive release, and the other in anticipation of release;
6 in other words, as a precautionary measure.

7 You recommended evacuation on Friday morning, March
8 30, and which of these situations did you base your decision to
9 evacuate?

10 COL. HENDERSON: Basically I was basing my decision
11 on lack of any information -- oh, specifically to your question,
12 this would have been a deliberate evacuation, hasty evacuation

13 COMMISSIONER PETERSON: Now, on the basis of
14 information you had about a release already having occurred?

15 COL. HENDERSON: Yes, -having occurred and my
16 understanding that it was continuing.

17 COMMISSIONER PETERSON: Then you called Mr. Molloy,
18 I understand, that morning to say that he would be getting a
19 call within five minutes ordering the evacuation. From whom
20 did you anticipate he would get such a call?

21 COL. HENDERSON: Well, he would have gotten a call
22 from me, but I called him and the other two county civil defense
23 directors to insure they were in advanced state of readiness
24 and that I was anticipating directions from my Governor as far
25 as what protective actions we were to take, and that I felt at

1 that particular moment that there was about a 90 percent
2 chance that we would conduct an evacuation, and I think that
3 is the figure that I probably gave all of the three county
4 directors.

5 COMMISSIONER PETERSON: And during that five minutes
6 you anticipated getting approval from the Governor to go ahead
7 with it --

8 COL. HENDERSON: I expected to get guidance from the
9 Governor or Lt. Governor to either go ahead with it or some
10 other protective action.

11 COMMISSIONER PETERSON: Earlier you said that you got
12 some information around that time from your Bureau of Radiation
13 Protection indicating that the release had subsided. Was that
14 a factor in changing your mind here?

15 COL. HENDERSON: Yes.

16 COMMISSIONER PETERSON: Well, then, on that Friday
17 evening when Mr. Denton arrived for the first time in the
18 Governor's office and you were present, as you indicated
19 earlier, you said that he described some possible events that
20 might occur and as a result recommended that an evacuation plan
21 within a 20-mile radius be prepared.

22 Can you recall what kind of events he described might
23 occur?

24 COL. HENDERSON: I cannot recall the exact scenarios
25 that he related. He discussed the hydrogen bubble at the

1 time. He was talking in terms of a core meltdown; however,
2 extremely remote. He did say that the Governor had made the
3 proper decision in not evacuating at that particular time.
4 However, there would -- or that there could be within the
5 scenarios that he was foreseeing the potential for, especially
6 for cautionary evacuations and that it would be prudent on
7 our part to have such plans out to 20 miles.

8 COMMISSIONER PETERSON: Thank you.

9 CHAIRMAN KEMENY: Professor Lewis.

10 COMMISSIONER LEWIS: Col. Henderson, it is hard at
11 this point, so many months later, to recap the mood and the
12 fear and anxiety of particularly Friday, March 30, when they
13 really thought there was going to be a serious disaster, but
14 I have some notes here that were taken from notes by Dr. Harold
15 Collins, who was the Assistant Director of Emergency
16 Preparedness at the NRC, who is the gentleman who spoke to you.

17 Just, if I might read a little bit and then follow
18 up with a question. This is what he was saying at the time.
19 We have a problem. It is perking like a teakettle. We have
20 problems with the water levels. Things are in a serious state,
21 things don't look good and could get worse, things have gotten
22 hairy in the last couple of hours, trouble with moving water
23 around the core. The situation is starting to degenerate. We
24 could be getting a core melting -- I am just taking little
25 pieces out of his conversation.

1 Does that, in essence, sound like what he was telling
2 you on the telephone when he talked to you?

3 COL. HENDERSON: Absolutely not. See, on Thursday
4 we were receiving information along these kinds of lines, we
5 are in the final stage of a cold shutdown. We expect to be
6 shut down within 30 minutes. We have hit a snag, we may have
7 to revert to another system of venting. No chance of a core
8 meltdown, or no chance of it getting out of control.

9 Now, those kinds of reports came through clear up
10 until about 7:30 Friday morning, so when this report that we
11 received from Three Mile Island at 8:40 that morning, here was
12 a very rapid escalation. Now, all I got from Doc Collins at
13 9:15 that morning was, one, him asking me what report I had
14 received from Three Mile Island, which I have already given
15 here, testified to.

16 He said yes, that agrees with what I have. It is
17 serious, and went on to recommend. He did not go into this
18 areas that you have been discussing.

19 COMMISSIONER LEWIS: Given his perceptions of the
20 seriousness of the crisis on Friday, and hearing about them now,
21 are you troubled at the failure of the White House to declare
22 a national disaster at that point? And do you have any insights
23 into why that was not done?

24 COL. HENDERSON: Well, I personally see nothing to
25 have been gained by the declaration of a disaster, either a

1 state or federal disaster. True, once the President declares,
2 then there is money made available to the states for
3 extraordinary expenses, but, you know, in state expenses of
4 overtime and in county and local government's expenses of
5 overtime in the total package. To a local municipality, you
6 know, a thousand dollars here or 500 dollars here is a
7 reasonable amount of money, and the same to my pocketbook, but
8 in the total billions of dollars that governments handle, it
9 is really peanuts.

10 So, I do not see any need for a declaration, either
11 a state or a federal disaster declaration, and we were getting
12 all of the assistance from the federal government in terms of
13 technical advice and assistance. We had over that weekend at
14 least 35 or 40 people from the Defense Civil Preparedness
15 Agency that had reported in. We had assigned them to counties,
16 they were down helping the counties refine and develop their
17 10 and 20-mile plans.

18 We had them out in the host counties reviewing those
19 plans for how we were to take care of people in the event we
20 were, would have had to have evacuated. We had 25 different
21 federal agencies meeting daily in my -- in the extension of my
22 office, and I was meeting with those people at 11:00 every
23 morning, everybody from the Post Office Department to the IRS,
24 and so forth, so they were there and prepared to have provided
25 any assistance that would have been needed with out without a

1 disaster declaration, so I am not comfortable that one was
2 needed.

3 COMMISSIONER LEWIS: Okay. Did you discuss when Mr.
4 Denton arrived, did you discuss the White House approach to the
5 problems at Three Mile Island, what the President wanted and
6 expected on the scene?

7 COL. HENDERSON: The only thing that I was aware of
8 at that time was that the President or the White House were
9 assigning two individuals, one, Denton, to speak for the NRC
10 from the technical side of the house, the second person to be
11 Bob Adamchik from the Federal Disaster Assistance
12 Administration, who was to be responsible for the coordination
13 of all other federal agencies not directly associated with
14 Three Mile Island, to have them in advanced state of readiness
15 to assist the state, should it be required.

16 COMMISSIONER LEWIS: Was there any discussion of the
17 White House being particularly concerned about cooling things
18 and trying to keep panic from rising in that area?

19 COL. HENDERSON: Well, I think -- I did not have this
20 expression from the White House, nor was it led to me to
21 believe, but it was within the state, certainly, and that is
22 one of my major responsibilities, major concerns, in any kind
23 of a disaster, is try to maintain a threshold or maintain
24 levels of tension so that you can do what needs to be done and
25 get things back to normal as rapidly as possible.

1 This is part of the emergency management business,
2 to try and maintain these levels.

3 COMMISSIONER LEWIS: I guess what I am leading to is
4 do you feel that it was necessary for the White House to take
5 the action that it did, was that in light of the situation as
6 you understood it, plus --

7 COL. HENDERSON: Well, it was necessary because my
8 Governor had requested the White House to take specifically
9 this action, so the White House effect, was responding to
10 the request of Governor Thornburgh to assign somebody there
11 who could speak for the nuclear side of it and somebody who
12 could handle the other federal agencies and to knock off a
13 lot of the conversation that was coming out of Washington that
14 was disturbing to us.

15 COMMISSIONER LEWIS: Now, give me a little bit more.
16 Are you saying that what you were getting out of Washington
17 was --

18 COL. HENDERSON: I am saying that a lot of statements
19 were being made in Washington and reported upon in the national
20 news media that were not accurate, and were alarming to the
21 people of Pennsylvania and that this was what we were trying to
22 put a damper on, was the statements being made so far removed
23 from the scene itself.

24 COMMISSIONER LEWIS: In other words you felt that
25 the public and the media were being confused by, really,

1 basically, what was coming out of the NRC in Washington?

2 COL. HENDERSON: It was not limited to the NRC. It
3 was other federal agencies were making utterances and state-
4 ments that were contrary to what we knew to be the fact and
5 we were literally swamped with telephone calls from all over
6 the United States and the world, from Australia, from France,
7 you name it, advising that they just heard over the national
8 news media that 8 million people had been evacuated.-- that came
9 from China.

10 (Laughter.)

11 They were extremely wild, just let me put it that
12 way.

13 CHAIRMAN KEMENY: Col. Henderson, do you know which
14 federal official had informed the People's Republic?

15 (Laughter.)

16 COL. HENDERSON: No, I do not.

17 CHAIRMAN KEMENY: But, seriously, could you give --
18 that clearly was a crazy rumor -- but can you give some
19 concrete examples of statements that you know of that came out
20 of Washington that led to confusion?

21 COL. HENDERSON: Well, unfortunately, I had no time
22 to read or listen to the national, to the newspapers, I could
23 not read newspapers or watch television during this particular
24 period of time, but I was getting calls and saying, from people
25 who were telling me that we just heard over this kind of a

1 statement.

2 I had a call from Australia saying that they had
3 heard from the United States that we were going to stop import-
4 ing uranium and they wanted to know what impact this was going
5 to have on their economy, you know, in Australia. But there
6 were more serious problems where individuals were calling up and
7 saying I have a daughter living -- from Kentucky -- saying, I
8 have a daughter living in Wilkes Barre, is she safe, because of
9 the kinds of stories that were apparently appearing.

10 I have never had the opportunity to go back and
11 really check if those kinds of stories were appearing. I am
12 led to believe they were.

13 COMMISSIONER LEWIS: To what extent did this kind of
14 thing hamper your ability to deal with the crisis at hand?

15 COL. HENDERSON: Very seriously, because I had too
16 many people tied up in trying to stomp out rumors that I could
17 not do my job of keeping many of the counties notified -- I did
18 the best we could to keep them knowledgeable on what we knew.
19 Everything we knew I feel the counties eventually knew, found
20 out or that we informed them.

21 However, there were time lapses because people would
22 be tied up on other things that could have been used more
23 effectively in an operational mode, rather than this particular
24 kind of --

25 COMMISSIONER LEWIS: Would you like to see in 619 183

1 emergency situations a centralizing of a news source?

2 COL. HENDERSON: You know, the local press were good
3 and did a very responsible job and I do not want to say that
4 we should try to control news and you put me in an awkward
5 position here. I personally would like to take all the news
6 media and say, yes, this is what you are going to say, but I
7 know that this is an impossible dream and I do not want to be
8 -- to be really put on the pan that way.

9 Because, you know, in times of an emergency, my
10 agency relies fully upon the news media, particularly radio and
11 TV or emergency broadcast system, to get the word out, so we
12 need them, we have to be in bed with them, so I cannot deny them
13 information and I have got to work with them, and I want to work
14 with them because they provide a terrific service to us in
15 time of emergency.

16 COMMISSIONER LEWIS: So, you are saying that you
17 really would not favor a centralized source.

18 COL. HENDERSON: I would not favor it, yes.

19 COMMISSIONER LEWIS: Okay, thank you.
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TAPE 8

1

CHAIRMAN KEMENY: Professor Taylor?

G. NWOOD

2

COMMISSIONER TAYLOR: I would like to get some

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idea of the scale, the day-to-day scale of operations of

4

PEMA briefly, and within that context, some idea of what

5

fraction of your activity is concerned with nuclear matters,

6

and of the nuclear matters what fraction is concerned with

7

the reaction to a nuclear attack which I believe is part of

8

the responsibility of PEMA. Is that correct?

9

COL. HENDERSON: Yes, sir.

10

COMMISSIONER TAYLOR: And compared to that, how

11

much day-to-day activity, planning and so on is concerned

12

with a possible nuclear accident, such as TMI?

13

First of all, what is your annual budget, roughly?

14

COL. HENDERSON: About 1.6 million.

15

COMMISSIONER TAYLOR: 1.6 million. Is a majority

16

of that accounted for by staff salaries and benefits?

17

COL. HENDERSON: 75 percent of my funds are for

18

staff salaries.

19

COMMISSIONER TAYLOR: Okay.

20

COL. HENDERSON: 15 percent is for fixed costs, such

21

as communications; 5 percent for travel, additional travel

22

costs and so forth; and about 5 percent for all else.

23

COMMISSIONER TAYLOR: Of your total activity, do

24

you have some way of guessing, if you have not broken it out

25

specifically in the budget, what fraction is concerned with

1 things related to response to a nuclear attack? Is it a
2 large fraction or let me put it that way?

3 COL. HENDERSON: All right. I have 67 people total
4 on my staff, equally divided between professionals, and
5 clerical personnel. I operate three area headquarters,
6 in Central, Eastern and Western Pennsylvania. Each have an
7 underground facility. I have five people each in those
8 three facilities.

9 At Fort Indiantown Gap, I run a, I have an engineer
10 stockpile of equipment where I have three people. Additionally
11 I have a maintenance repair shop for radiological meters.
12 I could not think of it. Now, that is a four-man operation.
13 They are responsible for not only the repair and upkeep of
14 these instruments, but also, for the maintenance of these
15 instruments in the field. I have within each county, stored
16 in each county, the number of instruments that they would
17 require to put into shelters in time of enemy attack.

18 So, I could say that those four people are full
19 time enemy-attack related.

20 I have five people in a plans office for crises
21 relocation which is strictly enemy related. So, I have
22 nine people out of my 67 people that are enemy-attack related.

23 COMMISSIONER TAYLOR: Are those nine people pretty
24 much the people that you would look to or that you did look
25 to in the TMI situation? In other words, do you use the

1 expertise that is in your organization that has to do with
2 response to nuclear war, nuclear attack, also, for response
3 to a reactor accident?

4 COL. HENDERSON: I have to use everybody. Although
5 these nine people that I made reference to are under
6 100 percent federal contract, it is within that 1.6 million
7 dollars, but I have a contract with the Federal Government
8 that I will maintain so many instruments each year, and these
9 people have a regular workload in order to maintain this.

10 Under our crisis relocation planning contract with
11 the Federal Government, with the Defense Civil Preparedness
12 Agency, I agree that I will move so far in this planning
13 sequence during each fiscal year.

14 So, I am under contract to do that, but during
15 times of emergency, I can go to the Defense Civil Preparedness
16 Agency and say, "Hey, I have got an emergency. I am pulling
17 those people to use elsewhere," and I have to do this, and
18 I do it, and the DCPA has always approved in the past, the
19 doing of this.

20 COMMISSIONER TAYLOR: What I am trying to do is to
21 get some idea of the connection, the sort of mutually
22 supportive connection between what you do in preparing for
23 the possibility of nuclear attack and what you do in preparing
24 for the possibility of an accident like TMI. Let me put the
25 question this way, if you found, let us say, because of an

1 intensification of civil defense activities federally,
2 nationwide that you were getting more money, more responsibility
3 in that area, response to nuclear attack, would that
4 automatically significantly increase your capability to
5 respond to a nuclear power accident?

6 COL. HENDERSON: Very definitely.

7 They are compatible.

8 COMMISSIONER TAYLOR: Thank you very much.

9 COL. HENDERSON: Compatible with all kinds of
10 emergencies. The stronger I am, and the stronger my county
11 civil defense directors are to respond to the day-to-day
12 emergencies, the better we would be capable of responding
13 to enemy attack or vice versa.

14 COMMISSIONER TAYLOR: Let me, just as a footnote,
15 ask does this mean that a substantial fraction of the
16 90-odd people in your organization did become involved one
17 way or another in the TMI response? In other words, were
18 you able to find useful things for people in your organization
19 to do way beyond those that had had experience with radiation
20 monitoring and so on?

21 COL. HENDERSON: Oh, absolutely. It was 67 people
22 assigned. 67 of those people were involved in Three Mile
23 Island and are still involved to their eyeballs in the
24 aftermath and the ongoing planning at the other power plants,
25 for example.

1 COMMISSIONER TAYLOR: Fine. Thank you.

2 CHAIRMAN KEMENY: Governor Babbitt?

3 COMMISSIONER BABBITT: Colonel Henderson, it is my
4 understanding that there is legislation pending in Congress
5 which would require the Nuclear Regulatory Commission to
6 approve state emergency plans and which would, in fact,
7 mandate the NRC to spell out quite detailed criteria to which
8 state plans would have to conform. Do you have any feelings
9 as to the advisability of that approach?

10 COL. HENDERSON: Well, I am not comfortable that the
11 NRC is the agency that should be assigned this planning
12 responsibility. I think NRC primarily is technically
13 oriented. I think PEMA is the proper organization it should
14 be assigned to, but like with most federal planning, it
15 starts down here and works its way back up.

16 I would like to see a federal plan, and then let
17 the state plans dovetail into that and let county plans.
18 The way it is now, under the present guidance, each state
19 is responsible for developing a plan under some very general
20 broad guidance of NRC and are invited to submit them for
21 concurrence.

22 COMMISSIONER BABBITT: You are in effect, suggesting
23 that they should first practice what they preach?

24 COL. HENDERSON: Yes.

25 COMMISSIONER BABBITT: By developing a federal

1 plan?

2 COL. HENDERSON: Correct.

3 COMMISSIONER BABBITT: Thank you.

4 CHAIRMAN KEMENY: Thank you very much, Col. Henderson.

5 Would counsel please call and swear in the next
6 witness.

7 MR. HARVEY: Thomas Gerusky, please?

8 Whereupon,

9 THOMAS M. GERUSKY

10 was called as a witness and, after being first duly sworn,
11 was examined and testified as follows:

12 CHAIRMAN KEMENY: Would you please state your
13 full name and your current position for the record?

14 MR. GERUSKY: Yes, my name is Thomas Michael Gerusky,
15 and I am Director of the Bureau of Radiation Protection,
16 the Pennsylvania Department of Environmental Resources.

17 CHAIRMAN KEMENY: Counsel?

18 MR. HARVEY: Mr. Gerusky, could you give us an
19 idea of the role that the Bureau of Radiation Protection
20 plays in state government?

21 MR. GERUSKY: Yes, we are one of the bureaus in the
22 Environmental Protection Program of the Department of
23 Environmental Resources.

24 Most of our energies are devoted toward licensing,
25 inspecting, registering, determining compliance with your 190

1 regulations for about 9000 users of radiation-producing
2 machines and equipment and sources that are not licensed by
3 the Nuclear Regulatory Commission.

4 The other portion of our program is involved in
5 routine environmental surveillance around nuclear power plants,
6 around obtaining general background information, natural
7 background information and fallout surveillance and in
8 emergency planning and reviewing nuclear power plant plans,
9 being involved in NRC or the old AEC hearings on nuclear
10 power plants in Pennsylvania, that kind of thing.

11 MR. HARVEY: Does your agency act as a state's
12 representative in licensing hearings on nuclear power plants?

13 MR. GERUSKY: In almost all cases, yes.

14 MR. HARVEY: And you appear at those hearings and
15 present testimony or question witnesses?

16 MR. GERUSKY: Yes.

17 MR. HARVEY: With respect to the monitoring program
18 around nuclear facilities conducted by your bureau, could
19 you describe that program as it existed prior to Three Mile
20 Island?

21 MR. GERUSKY: Yes, we sent you a copy of that
22 monitoring program or you have it. The monitoring program
23 was designed as a check on the utility monitoring program.
24 It was a minimal program, samples of air, water, milk,
25 vegetation, fish, wildlife and background radiation, using

1 thermoluminescent dosimeters, but they were, almost all of
2 these sample locations were the same locations that the
3 utility used for its environmental monitoring program, and
4 in particular the TLD's were at the same locations to
5 determine whether the thermoluminescent dosimeters were, the
6 reports, the radiation levels were indeed, the same as that
7 reported to us by utility, and it was a check on the utility.

8 It was the minimum program required by the
9 Nuclear Regulatory Commission to receive contract funds for
10 providing them with information. We receive about 30 thousand
11 dollars a year from the NRC for providing them information
12 from our environmental monitoring program.

13 MR. HARVEY: Prior to the Three Mile Island incident,
14 had you attempted through legislative means to expand the
15 monitoring program?

16 MR. GERUSKY: Yes. In hearings held about four
17 years ago, I testified before the House Mines and Energy
18 Management Committee concerning the environmental monitoring
19 and emergency response capability of our program, and those
20 two are tied very closely together; requested additional
21 funding and support.

22 Legislation was introduced to expand both
23 activities. Last session it passed the House, and did not
24 make it through the final days of the Senate.

25 This year it was reintroduced right away with funding,

1 300 thousand dollars additional funding, and got passed
2 rather recently and signed by the governor.

3 MR. HARVEY: It was passed after the Three Mile
4 Island incident?

5 MR. GERUSKY: Yes.

6 MR. HARVEY: Okay, but prior to the Three Mile
7 Island incident, the monitoring program in place was the
8 minimum program designed to check the accuracy of the
9 utility's own monitoring program. Is that correct?

10 MR. GERUSKY: That is correct.

11 MR. HARVEY: Turning to the Three Mile Island
12 incident itself, could you describe the Interagency
13 Radiological Assistance Plan and how it works with respect
14 to state emergencies?

15 MR. GERUSKY: Yes, if there is an emergency within
16 state borders, involving any radiation problem, that is
17 involved with the by-product source and special nuclear
18 material, in particular, the Federal Interagency Assistance
19 Program, or the IRAB team or the RAB team, Radiation Assistance
20 Program, operates out of Brookhaven National Laboratory for
21 our region, and we, with them, if there is an incident in
22 Pennsylvania requiring what we feel is beyond our scope to
23 handle, we would request assistance from them.

24 Normally, it is the other way around. They will be
25 notified of an incident in Pennsylvania through a variety of

1 sources, and they will call us and ask us to handle the
2 accident for them and report back. These are mainly
3 transportation type accidents or fires or something like that,
4 where they are notified through their chain of command,
5 federal chain of command.

6 MR. HARVEY: What is the principal agency under
7 the IRAB Plan?

8 MR. GERUSKY: The National Laboratory through the
9 Department of Energy.

10 MR. HARVEY: When the Three Mile Island incident
11 occurred on Wednesday, March 28, was the IRAB Plan implemented,
12 and did the Department of Energy come on the scene?

13 MR. GERUSKY: Yes, we received a call about
14 8:30 in the morning from Charles Minholz, Director of the
15 Health, Physics and Safety Program at Brookhaven National
16 Laboratory, saying that they were ready to come to
17 Pennsylvania at our request.

18 At that point we did not believe there were any
19 releases to the environment, didn't know if their assistance
20 would be required, because it meant taking a Coast Guard
21 helicopter and flying in the team from Brookhaven, and we
22 told them to stand by and make everybody ready, and we would
23 get back to them, and at quarter to ten, when we found out
24 that there indeed, off site, there were releases, and there
25 were off-site concentrations we asked for their assistance.

1 They arrived early afternoon. Apparently they
2 contacted Headquarters. At the same time a helicopter from
3 the Department of Energy arrived in early afternoon with
4 radiation sampling capabilities, and from that point on the
5 Department of Energy team was our right arm in doing
6 environmental monitoring in the vicinity of that plant, and
7 they stayed for a full month or longer.

8 MR. HARVEY: So that as of Wednesday afternoon,
9 the IRAB Pl. had been implemented, and the Department of
10 Energy was on the scene doing monitoring. Is that right?

11 MR. GERUSKY: That is right.

12 MR. HARVEY: Is it fair to say that during
13 Wednesday and Thursday your agency was involved in environmental
14 monitoring and reviewing and analyzing the results of the
15 data compiled by the Department of Energy and advising the
16 Governor and other agencies of the releases that had been
17 made in the nuclear facility site?

18 MR. GERUSKY: That is correct.

19 MR. HARVEY: Turning to Friday, could you describe
20 what happened in your agency on Friday morning?

21 MR. GERUSKY: It is very difficult to recollect
22 exactly what happened during the whole first five days, I
23 guess of the accident because they were all one big day to
24 us. We, maybe, got an hour's worth of sleep in the process.
25 Our program was on 24-hour call, and we only have 23 people in

1 the program totally. So, there were a lot of problems in
2 staffing the laboratory and staffing the main headquarters
3 and in going out and getting field measurements, but we
4 had received some information on Friday morning that a
5 release was occurring at the plant.

6 The DOE teams, the NRC people on site, we had an
7 open line to the plant, to Unit 2 Control Room, Unit 1
8 Control Room because Unit 2 Control Room they evacuated that
9 except for, well, because of high radiation levels early
10 on Wednesday and moved to the Unit 1 Control Room.

11 They were giving us readings from the Met Ed team
12 and the DOE people had radio transmission and were reporting
13 back to us.

14 Our teams had radio cars by that time and could
15 report back to us. So, we were aware that a release was going
16 on at the plant and that the levels off site were going up
17 to the range of 10's of MR per hour.

18 MR. HARVEY: Were you concerned about those
19 releases?

20 MR. GERUSKY: Yes, we were very concerned, and that
21 is why everybody was out monitoring. We had information
22 from the plant that the releases were planned but un controlled,
23 and that the first release would have been the highest
24 amount of radiation and that the levels should decrease
25 significantly over the next few hours back down to where they

1 were the day before.

2 Then a call came in from Craig Williamson, the
3 Assistant Director of State Council Civil Defense, informing
4 us of the call from Doc Collins recommending evacuation.

5 MR. HARVEY: Is he from the NRC?

6 MR. GERUSKY: Yes.

7 MR. HARVEY: All right. What did he say?

8 MR. GERUSKY: He told us that Doc Collins had
9 called and recommended evacuation downwind for 10 miles
10 because of the reading of 1200 MR per hour above the stack.
11 We had not received any information that would indicate
12 that there were any off-site levels that would require
13 evacuation. We were on the phone with the open line, again
14 with the utility, talking with the NRC people and the utility
15 people about what they were finding and, again, they did not
16 find anything, anything greater than what we knew already,
17 and --

18 MR. HARVEY: Excuse me. You received a call from
19 PEMA, saying that there had been a significant release and
20 that evacuation was recommended for 10 miles.

21 MR. GERUSKY: By NRC.

22 MR. HARVEY: By NRC and you called --

23 MR. GERUSKY: Washington.

24 MR. HARVEY: Washington?

25 MR. GERUSKY: NRC, Washington.

1 MR. HARVEY: And you called the site and spoke
2 to the NRC representative at the site, and they were not
3 concerned and had not heard about the evacuation?

4 MR. GERUSKY: They were concerned that the call
5 came in from NRC Headquarters and could not believe that that
6 call came in because they saw no reason for it, and that they
7 had not provided them with the information, what they felt
8 was any information which would have caused them to make that
9 call.

10 In the meantime, two people from our office were
11 on the phone with Doc Collins, asking him why that recommenda-
12 tion was made and, also, they were concerned that the
13 recommendation was made directly to the State Council or to
14 PEMA because in the chain of command, and we have been working
15 with Mr. Collins for many years, he knows our organization,
16 and he knows what we were supposed to do, and that we had the
17 responsibility for making the recommendation.

18 The recommendation should have come to us to
19 discuss the implementation of it and then to PEMA. He could
20 have overridden us, but at least he could have come to us first.

21 In any case he said, I was not involved in the
22 conversation, but the information I have is that the
23 conversation was rather a wild one, and he stated that it was
24 not his recommendation, that he was just following orders,
25 and he hung up.

1 Apparently at that point he then called back
2 Civil Defense and informed them that he had made the
3 recommendation.

4 We then got on the phone and tried to call Civil
5 Defense back. The phone lines were tied up. We were hearing
6 on the radio the announcement that if there was an evacuation
7 needed that these were the steps you were to take.

8 MR. HARVEY: Was that Kevin Molloy's announcement?

9 MR. GERUSKY: Yes, we had WHP on in my office, and
10 he came in. He did a good job, by the way, informing the
11 public as to what they should do in case an evacuation was
12 recommended.

13 So, I went to the Governor's Office. With me in the
14 office at the time was the Deputy Secretary of Health and --

15 MR. HARVEY: Were you trying to stop the evacuation
16 at that point?

17 MR. GERUSKY: Yes, well, we did not know what
18 the recommendations had been. We were not able to get back
19 to Civil Defense. We were not able to get hold of the
20 Governor's Office; so we did not know what was happening
21 except we heard that if an evacuation was called. So, I went
22 to the Governor's Officer, and Bill Dornsife our nuclear
23 engineer went to State Council Civil Defense and said, "No;"
24 there was no evacuation needed.

1 MR. HARVEY: So because the phone lines were jammed,
2 Bill Dornsife went to PEMA to say that no evacuation was neces-
3 sary and you went to the governor's office to say that no
4 evacuation was necessary. When you got there, who was there?

5 MR. GERUSKY: Well, the governor and the lieutenant
6 governor and their staff aides. I don't recall. We've had
7 so many meetings in the governor's office and so many different
8 people were there, but most of the time, the governor's aides,
9 Jay Waldman, Paul Kritchlo, the public information officer or
10 the governor's press secretary. There weren't that people in
11 the office as are normally there for an NRC or a Met. Ed.
12 briefing.

13 MR. HARVEY: Was it your sense that they had been in
14 contact with the NRC?

15 MR. GERUSKY: Yes. I believe I missed the first call
16 with Chairman Hendrie. And when we got there, the information
17 that I had was that Chairman Hendrie had already told the
18 governor that they had made a mistake and he apologized for
19 the error and there was no need for evacuation. The take cover
20 recommendation, I can't recall how that came about. I don't
21 believe I recommended it. I think that was done before I got
22 there, but I'm not sure.

23 MR. HARVEY: So that at that point, the governor had
24 already been in contact with Chairman Hendrie. Chairman
25 Hendrie had apologized for the evacuation recommendation that

LA 2 1 had come through Mr. Collins?

2 MR. GERUSKY: Right.

3 MR. HARVEY: And what discussions ensued then in the
4 governor's office?

5 MR. GERUSKY: I believe Randy Welch also brought up
6 the concerns of the Secretary of Health of the needs for
7 evacuating pregnant women and possibly small children. In the
8 course of that, Chairman Hendrie, I believe, called back to
9 discuss in further details what was going to happen, in other
10 words, sending up Harold Denton and so forth. The question
11 was -- the question concerning the evacuation of pregnant
12 women and small children was brought up with Chairman Hendrie,
13 and he stated that if he had a pregnant wife and small children
14 in the area, he would recommend that they would leave the area,
15 and he would go along with that recommendation. And that's how
16 that -- at that point, I had no choice but to say we have to
17 go along with them. The reason was, he said that they didn't
18 know what was going on at the plant, things could get a lot
19 worse, and it was the safest thing to do. And if something
20 else had happened at the plant and these people were exposed
21 and we had overruled the NRC's recommendation at that point on
22 that basis, we were in trouble. So I went along with the
23 recommendation.

24 MR. HARVEY: Prior to the Hendrie phone call, in the
25 governor's office, just prior to that second Hendrie phone call,

3 1 was the sense of the group that an evacuation was not necessary?

2 MR. GERUSKY: Yes.

3 MR. HARVEY: And then Chairman Hendrie called?

4 MR. GERUSKY: It could have been -- I'm not sure who
5 called who at that point. I don't believe we called Chairman
6 Hendrie back.

7 MR. HARVEY: Chairman Hendrie was on the phone.
8 Could you tell us the conversation as best you remember it?

9 MR. GERUSKY: Oh, he said something like, "Chairman,
10 we just really don't know" -- he said, "Governor, we really
11 don't know what's happening at Three Mile Island. There is a
12 problem with a bubble. There is a possibility of a meltdown.
13 We just don't know enough. The information we're getting from
14 the plant is too bad. And we have to increase that information
15 flow and we have to get someone up to the site who is knowl-
16 edgeable. The President had recommended that this be done,
17 and we are going to send Harold Denton up. He'll be up this
18 afternoon and be in to brief you this evening."

19 MR. HARVEY: Who raised the possibility of evacuating
20 pregnant women and small children?

21 MR. GERUSKY: I think the governor asked Chairman
22 Hendrie to comment on the recommendation made by the deputy
23 secretary of health.

24 MR. HARVEY: All right. So the deputy secretary of
25 health had recommended the evacuation of pregnant women and

4 1 small children.

2 MR. GERUSKY: He had recommended it be considered.
3 I don't think he had recommended the evacuation.

4 MR. HARVEY: And what was Chairman Hendrie's response
5 when the governor raised that possibility?

6 MR. GERUSKY: That it was a good idea.

7 MR. HARVEY: Do you recall what he said?

8 MR. GERUSKY: If he had a pregnant wife in the area
9 and an infant or child under the age of one, he would ask them
10 to leave the area. And then the question came up, well, how
11 far. Oh, five miles was a good number.

12 MR. HARVEY: Do you recall how that number was
13 reached?

14 MR. GERUSKY: Just be -- well, I think he said two
15 miles and then somebody else said, "Two miles? That's awful
16 close." And he said, "Well, yeah, maybe four or five miles."
17 And we all settled on five miles since five miles was the
18 emergency evacuation zone.

19 MR. HARVEY: In other words, you had a plan for five
20 miles?

21 MR. GERUSKY: Yeah, the evacuation plans were for
22 five miles. The recommendation, though, was made on the basis
23 that we knew it could be handled within five miles and we didn't
24 feel it was needed to be done any further distance. And he
25 also recommended -- I think it was the governor who said that

A 5 1 it was going to be advice only; it was not a call for an evacua-
2 tion. It was an advisory that these individuals, because of
3 their sensitivity to radiation, be removed from the area.

4 MR. HARVEY: Do you recall how the line was drawn
5 between two-year olds and one-year olds and pre-school chil-
6 dren?

7 MR. GERUSKY: Everybody started saying, well, how
8 can we separate a one-year old from a two-year old, and then
9 how can we separate a two-year old from other pre-schoolers.
10 And the decision was made, okay, we'll just go to all pre-
11 schoolers, there can't be that many more of them. And then
12 the decision, well, wait a minute, what about the problem of
13 the relatives of the pre-schoolers that are in school. So
14 the schools -- they couldn't leave without taking their chil-
15 dren along. The schools were closed so that everybody could
16 leave the area, the pregnant women and the small children and
17 their brothers and sisters who were in school at the time.

18 MR. HARVEY: So that was the advisory that was made
19 that afternoon?

20 MR. GERUSKY: Yes.

21 MR. HARVEY: Now, there came a time when the advisory
22 had to be lifted. Could you describe the problems in lifting
23 the advisory?

24 MR. GERUSKY: Well, since there wasn't any real
25 criteria set up to make the recommendation in the first place,

LA 6

1 except lack of knowledge, the problem continued day to day.
2 The governor kept saying to the Commission and to Harold
3 Denton, what is your recommendation concerning allowing the
4 pregnant women to return to the area. And the approach was,
5 well, we should have a clear-cut line of demarkation where
6 something has happened at the plant, where we can say, yes,
7 it's safe to go back in. Well, that clear-cut definition
8 never came about. The plant still is not in cold shutdown.
9 And that was the first thing that they were hoping for, was
10 cold shutdown. Cold shutdown never came. And days dragged on.
11 People were leaving the Hershey area, coming back home anyway.
12 And after a few days, I requested Bill Dornsife, who was at
13 the plant 12 hours a day, to talk to the NRC people and come
14 up with some criteria, even though it is not -- was not the
15 cold shutdown, to allow the people to come back into the area.
16 Radiation levels were dropping off and so forth.

17 So they came up with four or five points that they
18 felt were equivalent to the cold shutdown criteria and
19 recommended them to the governor. The problem was that the
20 next -- that was just prior to Easter Sunday, I think it was
21 Easter weekend. And then on Easter Sunday, increased iodine
22 levels started at the plant. You know, saying, geez, maybe
23 we made a wrong decision. But luckily they were under control
24 very soon.

25 MR. HARVEY: So there was no clear-cut way, after the

LA 7 1 evacuation recommendation was made, to lift that same advisory.

2 MR. GERUSKY: Right. I mean, if it's on the basis of
3 we don't know what's going to happen next, maybe they should
4 still be out there, because we don't know what's going to
5 happen next on there either, when they open -- you know, there
6 are a lot of things that can go wrong with that plant for the
7 next four years.

8 MR. HARVEY: No further questions, Mr. Chairman.

9 CHAIRMAN KEMENY: Thank you, Counsel. Mr. Gerusky,
10 we have heard how important the media have been as a source
11 of information within the region. Did you or any member of
12 your staff participate in briefing the media?

13 MR. GERUSKY: Yes, I did and Bill Dornsife did the
14 first three days.

15 CHAIRMAN KEMENY: Can you give us some evaluation of
16 your experiences of those sessions?

17 MR. GERUSKY: Yes. The media asked very pertinent
18 questions. Then we attempted to respond technically and
19 accurately. And it was almost impossible to carry on a con-
20 versation where they understood what we were talking about.
21 And we learned pretty quickly that we couldn't talk in terms of
22 the technical features of the reactor, what was really happen-
23 ing there with valves and so forth. We had to put it in terms
24 that they could understand, that they could relay to the public.
25 That was difficult.

LA 8 1

2 For example, we were talking about exposure radiation
3 levels off-site, and we were saying ten millirem, or we were
4 estimating that no one over the course of the accident would
5 an exposure in excess of 100 millirem. And they said, well,
6 what does that mean. And we said, well, two or three chest
7 x-rays is -- you know, it was very difficult to try to explain
8 what 100 millirem meant right on the spur of the moment without
9 thinking about it ahead of time. There was no document that
10 we could hand out to the press available that would have
11 explained to them what nuclear power was all about, what
12 nuclear accidents were, and so forth.

13 CHAIRMAN KEMENY: Does your --

14 MR. GERUSKY: Excuse me, there was one other problem
15 with the press. And that is -- with the press conferences.
16 And that is we would get one question from one reporter and
17 there might be a need to follow up on that question, and
18 another reporter would then ask a question, completely
19 unrelated to the previous question. And you'd forget that
20 there was a need to follow up on the first question, so you
21 never got back to it. And then all at once the press confer-
22 ence was over. And that was difficult.

23 I would have preferred someone -- having someone of
24 a technical nature available all the time to answer all
25 inquiries and keep people up to date. But we didn't have the
staff to do that.

LA 9 1 CHAIRMAN KEMENY: Does your agency engage in any
2 kind of public education program in the area of radiation?

3 MR. GERUSKY: Not a planned program. We accept invi-
4 tations to speak at a variety of meetings. And very few
5 people were interested prior to Three Mile Island in knowing
6 about reactors and/or radiation. We didn't make any concerted
7 effort to try to go out to the public because of the staff
8 limitations. There are a lot of people in Pennsylvania. And
9 we have 10 or 12 people who can talk to the public.

10 CHAIRMAN KEMENY: Do you have any thoughts as to
11 what should be done in the future?

12 MR. GERUSKY: On public relations?

13 CHAIRMAN KEMENY: Both on the general public and in
14 helping the media.

15 MR. GERUSKY: I think the media came up with a docu-
16 ment later in the event that was pretty well done, showing
17 what the terms was, what reactors were, what meltdown was, and
18 so forth. That ought to be retained and distributed. Public
19 information, I think there is a need for dissemination of
20 some kind of information around the nuclear reactor facilities
21 explaining what can be done -- what can go wrong and what
22 response the public should take. I'm not sure it would go
23 into the details concerning pregnant women and who is more
24 susceptible in the population. That gets into a lot of detail.
25 I think we have to put out as much as we can, but make it

LA 10

1 readable.

2 We were concerned, the first booklet, that it was
3 just not detailed enough, in that -- and it wasn't written well.
4 It wasn't we were concerned that it would scare the public.
5 We wanted a better version. We kept rewriting the thing,
6 sending it back to Civil Defense. And the thing would come
7 back over and it would be almost the same way as it came over
8 the first time. And we rewrote it, sent it back. And finally,
9 we just gave up. The last version that came over, we reviewed.
10 And it was a much better version. And that's why it's being
11 printed.

12 CHAIRMAN KEMENY: Dr. Marks?

13 COMMISSIONER MARKS: I'd like to just pursue that.
14 How many versions specifically, Mr. Gerusky, have you reviewed
15 and rewritten?

16 MR. GERUSKY: Four or five.

17 COMMISSIONER MARKS: Four or five. Can we have copies
18 of each of those, please, to see what revisions have specifically
19 been made?

20 MR. GERUSKY: I don't know if they're available. If
21 they're available, you can have them.

22 COMMISSIONER MARKS: Okay. We'd like to request
23 that. I understand that your bureau used to be part of the
24 Department of Health.

25 MR. GERUSKY: Yes.

A 11 1 COMMISSIONER MARKS: If you don't have an aggressive
2 program in public education, who does within the state with
3 respect to the radiation hazards?

4 MR. GERUSKY: No one.

5 COMMISSIONER MARKS: No one.

6 MR. GERUSKY: No one did when we were in the Depart-
7 ment of Health either.

8 COMMISSIONER MARKS: No one did in the Department of
9 Health either.

10 MR. GERUSKY: Right.

11 COMMISSIONER MARKS: Do you consider that an appro-
12 priate activity for your bureau?

13 MR. GERUSKY: Yeah.

14 COMMISSIONER MARKS: Have you ever made a recommenda-
15 tion for such a program and requested a budget?

16 MR. GERUSKY: No, we were more concerned about having
17 not enough staff and funds to do what we were technically
18 supposed to do, rather than education.

19 COMMISSIONER MARKS: Isn't it -- I have a little
20 trouble with that line of reasoning, because it seems to me
21 that public health and safety with regard to radiation ought
22 to place its first emphasis on prevention. And prevention has
23 to start with information and education.

24 MR. GERUSKY: Agreed, and much of our effort was
25 spent in forming the physicians and technicians who were using

LA 12 1 x-ray equipment of the hazards of radiation and how to reduce
2 their exposures to the general public from medical x-rays.
3 That was our main information type activity. And we gave lec-
4 tures at schools of technology, we gave lectures to physicians'
5 groups, we gave lectures at medical schools, and so forth,
6 and hospitals, on a routine basis, showing how to reduce the
7 x-ray exposure of Pennsylvanians. And it is still significant.
8 And we have significantly reduced, in some areas, what those
9 exposures are. They are considerably higher than what the
10 people got around Three Mile Island.

11 So there are priorities. And we believe we had our
12 priorities in the proper area at the time.

13 COMMISSIONER MARKS: Have you evaluated these pro-
14 grams, by the way?

15 MR. GERUSKY: Yes.

16 COMMISSIONER MARKS: And you have data to indicate
17 that there is a decrease in exposure?

18 MR. GERUSKY: Oh, yes.

19 COMMISSIONER MARKS: What about the health profes-
20 sionals in the Three Mile Island area, once the accident
21 occurred? Did you make any effort to communicate with them
22 with respect to information as to the hazards of radioactivity?

23 MR. GERUSKY: No, we were too busy trying to get
24 information ourselves and to pass it along to the people who
25 needed to know to react to the emergency.

LA 13 1

COMMISSIONER MARKS: Well, it's our impression that probably one of the most significant health effects of Three Mile Island has been the psychic trauma to the public.

MR. GERUSKY: We call it the radiation fear syndrome.

COMMISSIONER MARKS: Right. But you didn't feel any high priority responsibility to try and deal with that by transferring information either to the health professionals or to the public.

MR. GERUSKY: I didn't look at a newspaper or watch television or hear radio, except for WHP, which was calm, cool, and collected, during the whole event. And I didn't realize that the public was so upset.

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1 COMMISSIONER MARKS: In retrospect -- I don't want
2 to say, if we ever have to do it again --

3 MR. GERUSKY: I don't want to have to do it again.

4 COMMISSIONER MARKS: But, I mean, what are you doing
5 now to prepare yourself for this kind of problem? In other
6 words, have you recommended any specific programs for educating
7 health professionals in the area?

8 MR. GERUSKY: No, not yet. We are still almost full
9 time on the Three Mile Island problem itself and the second
10 thing we are doing is updating the emergency response plans at
11 the reactors in Pennsylvania, getting direct telephone lines
12 installed and so forth. We haven't had time to sit down and
13 think about how we would do that.

14 COMMISSIONER MARKS: Well, I have to tell you, per-
15 sonally, I react with some distress to this response because
16 as recently as two or three days ago, there was a television
17 show on the Three Mile Island followup and the accident is
18 still with us, in which physicians were quoted and the inform-
19 ation they transmitted over national television didn't seem to
20 me to reflect any profound understanding or even any adequate
21 understanding of the potential hazards of radiation. Now,
22 your bureau seems to me to be the logical bureau in the
23 state -- unless you can identify another one -- that has the
24 responsibility to do something about this.

25 MR. GERUSKY: During the -- maybe a month after the

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12 1 accident, there was a program put on in Pennsylvania for phy-
2 sicians to discuss the effects of radiation and the Three Mile
3 Island accident. There is another one being put on by the
4 Penn State University at Hershey in September, which is a two
5 day seminar on radiation and health effects. There was also
6 a program put on by Pennsylvania -- I am not sure what agency
7 it was -- but an agency located in the Harrisburg area, where
8 some of the physicians and individuals who are very concerned
9 about low level radiation exposure were brought in and their
10 views were emphasized and spread around in the media. We just
11 did not have the resources available to us to participate in
12 those and in subsequent forums. There is just so much time
13 in an individual's day and --

14 COMMISSIONER MARKS: Have you requested these re-
15 sources?

16 MR. GERUSKY: Well, we got an additional \$300,000
17 in our budget this year over a \$700,000 budget and we still
18 have two vacancies in our program that have been in existence
19 for a couple of years. The Commonwealth does not have a lot
20 of money and all of the programs have been cut. We are one
21 of the few programs that received an increase.

22 COMMISSIONER MARKS: Thank you.

23 CHAIRMAN KEMENY: Governor Peterson.

24 COMMISSIONER PETERSON: Mr. Gerusky, when one visits
25 a nuclear plant, such as we commissioners did at Three Mile

1 Island Plant No. 1, is put in elaborate protective clothing,
2 given dosimeters to measure one's exposure to radiation and
3 before exiting the plant, his hands and feet and body are
4 carefully scanned to see if he is carrying any radioactive
5 material on his person. In other words, great precaution is
6 taken to protect the individual, even when the plant is shut
7 down, which was the case there. We have also been told here
8 that evacuation can be carried out with little hazard to the
9 people and that 50 percent of the people within a five mile
10 radius of Three Mile Island plant evacuated on their own
11 initiative. And we also know that in hurricane-prone areas,
12 which I kind of lived in for awhile, people are frequently
13 evacuated in anticipation that a hurricane's path will come
14 through the area and when the hurricane shifts its direction,
15 people go back home relieved and, I think, in most cases appreci-
16 ative of the community having taken that precaution.

17 Now, when considering the safety of the community
18 in the case of the potential release of radioactive material
19 as a result of an accident like that one at Three Mile Island,
20 wouldn't it make sense to evacuate prior to an anticipated re-
21 lease, rather than wait until the release has occurred and the
22 people in the area without protective clothing or without
23 exposure meters are contaminated and thus transport that haz-
24 ardous material out of the contaminated area into adjacent
25 areas?

04 1 MR. GERUSKY: Yes, if we realized that there was a
2 potential release that would involve contamination of indivi-
3 duals or the environs, but that never occurred.

4 COMMISSIONER PETERSON: You mean nobody realized
5 that there was a potential up until then?

6 MR. GERUSKY: There was never any contamination of
7 individuals or the environment. The only thing that was re-
8 leased from that plant of any consequence was xenon 133 and 135
9 and noble gases and they don't contaminate anything. They
10 just --

11 COMMISSIONER PETERSON: You mean when we went in
12 that inactive plant there was more potential for the release
13 of radiation --

14 MR. GERUSKY: No. There was a lot of other contam-
15 ination inside -- I don't know about Unit 1. There is con-
16 tamination where you can get it on your shoes and your hands
17 and your clothing and you can get some radiation exposure --
18 even if the people -- well, most of the people, if they had
19 had film badges on or dosimeters on would not have received
20 a recorded exposure.

21 COMMISSIONER PETERSON: In other words, you didn't
22 agree with the eight or ten people who thought there was po-
23 tential for such release and --

24 MR. GERUSKY: No, I didn't say that. I said if we
25 -- the information that we had was that the releases that were

1 occurring were -- that there was no significant potential for
2 release on early Wednesday and that when the releases did
3 occur we were very concerned about iodine 131, which is the
4 critical isotope in a reactor accident. We did not have the
5 capability to do field iodine 131 monitoring. The utility did,
6 however, and their samples indicated iodine 131 in the envir-
7 onment; but they had some questions about it because of high
8 background. We had those samples taken to our laboratory and
9 analyzed in much greater detail that indicated insignificant
10 quantities of iodine 131, well below allowable levels offsite,
11 like factors of tens and hundreds. Therefore, the only thing
12 that we could find in the environment was the noble gases,
13 and the levels were very, very small. We are talking about
14 10 MR per hour or less for short periods of time and if we are
15 concerned about evacuating people -- we are concerned about
16 evacuating people if there is a potential for them receiving
17 exposure in the range of 1 to 5 rem, 1,000 to 5,000 millirem.
18 In this case at 10 MR right offsite and less than 1 MR per hour
19 a few hundred yards away, that potential wasn't there. In our
20 minds from the moment we first heard about the accident through
21 today, we have the feeling that evacuation is a distinct possi-
22 bility in the imminent future from something that can happen
23 at that plant. And we never put evacuation on the back burner.
24 It was always on the front burner, but we never felt it was
25 needed.

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1 COMMISSIONER PETERSON: In other words, you are
2 saying that until you have obtained measurement --

3 MR. GERUSKY: No. If we felt -- for example, on
4 the first call that came saying their dome monitor is reading
5 800 R per hour, the calculated dose offsite is 10 R per hour
6 across the river and the pressure inside the containment build-
7 ing is up so that we are getting a two-tenths of a percent
8 leak rate per day, we wouldn't even have waited for measure-
9 ments, we would have evacuated. We would have recommended to
10 PEMA that evacuation occur right then. The reason we did not
11 was because the pressure inside the containment building was
12 very, very low and, therefore, the calculation of offsite
13 doses would also be in error because there would be no leakage
14 from the containment. And we had people onsite indicating no
15 radiation -- no problems with radiation and we were concerned
16 about the levels, where they were supposed to be high offsite
17 and requested that they go across the river by helicopter and
18 actually measure to verify that, indeed, they were low. And
19 they were not detectable, but they were on standby. Everybody
20 was on standby to evacuate in case the levels of radiation
21 over there were not 10, but they could have been hundreds of
22 MR per hour. At hundreds of MR per hour we would have eva-
23 cuated during those first few days. But at 10 MR per hour
24 and the information from the plant was that this was going to
25 be over shortly. By this evening the levels will be down to

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1 nondetectibles and so forth. That was the information we were
2 getting from NRC through Friday morning.

3 COMMISSIONER PETERSON: There is no reason to take
4 any precautionary measure like you do when you go into the
5 plant operating normally?

6 MR. GERUSKY: No. I don't think so.

7 COMMISSIONER PETERSON: Thank you.

8 CHAIRMAN KEMENY: Professor Taylor.

9 COMMISSIONER TAYLOR: In your dialogue with Commis-
10 sion Counsel, you made a statement that I would like to follow
11 up on and that is, I believe you said a lot of things could
12 go wrong in the next four years. Could you expand on that?
13 What did you have in mind?

14 MR. GERUSKY: Well, there are millions of gallons
15 of water that have to be decontaminated -- very highly con-
16 taminated water that has to be decontaminated onsite. The
17 process is one that has been used before but there can be leaks
18 in the system. There can be gases released. There is krypton
19 85 in the containment building above the water in kilocurie
20 or megacurie quantities. That material can be released slowly
21 over a long period of time. I think that they have calculated
22 51 days of release would keep the exposure levels below the
23 allowable release level for the plant in their technical specs,
24 but it could be released all of the sudden if the containment
25 was for some reason opened up, cracked, something happened, the

1 water in there. And then the reactor vessel itself, when that
2 opens up, we have -- normally in a nuclear power plant you
3 have three levels of defense against release of radioactive
4 material to the environment. One is the containment building.
5 The second is the reactor vessel and the third is the cladding.
6 We don't have cladding on most of the fuel we expect. Nobody
7 knows what the fuel is going to look like when they open it
8 up. Once that top is off, that is another line of defense
9 that is gone and the containment would have to be breached to
10 allow people in and out. So, the three levels of defense are
11 gone, so there is a potential for the release of fission pro-
12 ducts into the environment all the way through until all of
13 that material is cleaned up.

14 . COMMISSIONER TAYLOR: That suggests -- your know-
15 ledge of the state of affairs now suggests to me then that your
16 office is following very closely what is going on out there.
17 Is my impression correct that you expect to have to keep in
18 close touch with what is happening there until you are satis-
19 fied yourself that there is no unusual potential hazard. Now,
20 how do you plan to do that? I mean, do you have someone at
21 the site all of the time? How do you plan to keep in this
22 close touch?

23 MR. GERUSKY: We have a direct line with the NRC
24 trailer onsite and they have about 40 to 50 people assigned to
25 the recovery program. Our nuclear engineer is spending at

1 least one full day a week at the site, getting information and
2 onsite, also, are EPA representatives and FDA representatives.
3 We are seriously considering, because of some of the problems
4 that have happened in the last couple of weeks, release of the
5 4,000 gallons of water without checking for strontium 90 --
6 minor little things, but the public is very concerned about --
7 of assigning someone down to the site full time. We would
8 really need four or five people on the site to find out what
9 is going on all of the time. It may be just too much respon-
10 sibility for one person, especially one who is not a nuclear
11 engineer and knowledgeable of what is going on at the site,
12 just a health physicist, who is mainly concerned with x-ray
13 protection and that is what most of our people are concerned
14 about.

15 COMMISSIONER PETERSON: Is it possible, do you
16 think, that during the course of your keeping track of what is
17 going on there, that someone that reports directly to you,
18 might become concerned about some particular aspect of an oper-
19 ation for the cleanup process, what would then happen? In
20 other words, let's say someone sees something going on there
21 and thinks it is not particularly wise. What would he do?
22 I presume he would report to you.

23 MR. GERUSKY: Yes. And I think at that point we
24 would go to NRC.

25 COMMISSIONER TAYLOR: You would go to NRC.

110 1 MR. GERUSKY: And if we couldn't get agreement with
2 NRC and we still felt that it was serious, we would go to the
3 Governor's office and the Governor's office would go to the
4 Chairman of the NRC and/or higher.

5 COMMISSIONER TAYLOR: Now, just one question of a
6 similar sort, but going back now to the time of the accident;
7 that is, within a couple of days of it. At what time did you
8 become aware of their having been severe fuel damage in a
9 sense of the breakdown of one of the three barriers that you
10 mentioned at least?

11 MR. GERUSKY: A telephone call.

12 COMMISSIONER TAYLOR: When was that?

13 MR. GERUSKY: Well, when I was on the phone with
14 them at 7:20, 7:25 in the morning, they told us that they had
15 failed fuel. I don't know if that means severe. With the
16 contamination levels that they were finding there had to be
17 severe fuel damage.

18 COMMISSIONER TAYLOR: Did you connect that -- what
19 date was that? I am sorry.

20 MR. GERUSKY: The 28th.

21 COMMISSIONER TAYLOR: The 28th.

22 MR. GERUSKY: Yes. At 7:30 in the morning.

23 COMMISSIONER TAYLOR: Wednesday morning?

24 MR. GERUSKY: Yes.

25 COMMISSIONER TAYLOR: So, it was very early on then

D011 1 that you had -- you believed that there had been serious core
2 damage.

3 MR. GERUSKY: There had been -- no, that there had
4 been cladding --

5 COMMISSIONER TAYLOR: That there had been cladding
6 failure.

7 MR. GERUSKY: Right.

8 COMMISSIONER TAYLOR: Okay. When you heard that,
9 did you concern about the possibility of an important release
10 of radioactivity offsite increase substantially?

11 MR. GERUSKY: Yes.

12 COMMISSIONER TAYLOR: Is it fair to say that --
13 well, let me ask this. Did the whole possibility of having to
14 call for evacuation occur to you that early; that because of
15 the failure of the cladding --

16 MR. GERUSKY: I considered evacuation when I got the
17 first telephone call from Margaret Riley at about 7:05, 7:06
18 in the morning that there was an accident at Three Mile Island
19 and the first thing I said to her was okay, we go. We had
20 been talking about this for a long time -- if it is going to
21 happen, it is going to happen in Pennsylvania, for some reason.
22 It seems like it always does. And I expected that we would
23 evacuate people. It was just -- you know, that is what you
24 do. And I expected iodine problems and that we would have
25 a real -- and it would be a beaut and it didn't turn out that

1 way and we were anticipating -- and we still are -- the need
2 for evacuation. That is still first in our minds if something
3 goes wrong at that plant.

4 COMMISSIONER TAYLOR: Well, you have answered the
5 last question I was going to ask. Thank you very much.

6 CHAIRMAN KEMENY: Commissioner McPherson.

7 COMMISSIONER MC PHERSON: Were you contacted before
8 the venting on Friday?

9 MR. GERUSKY: We tried to -- there is nothing in
10 our logs that indicate that we were contacted. I don't know
11 if we were contacted or not.

12 COMMISSIONER MC PHERSON: If you had been contacted,
13 would you have had the authority to deny that venting?

14 MR. GERUSKY: No.

15 COMMISSIONER MC PHERSON: What is your authority
16 with respect to the plant?

17 MR. GERUSKY: I don't think we have any authority
18 with respect to the plant. If you really want to get legal
19 about it, the only thing we can do is make recommendations.
20 We have authority to take care of what happens after it is
21 released from the site. The NRC has told us many, many times
22 that what is inside that fence is their responsibility and
23 what is outside of the fence is our responsibility and they
24 have the decision to make and they have the responsibility
25 for making the decision as to what is inside the fence and,

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1 therefore, what is outside the fence. Once it is outside, it
2 is ours to take care of.

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1 COMMISSIONER MCPHERSON: After the fact?

2 MR. GERUSKY: After the fact.

3 COMMISSIONER MCPHERSON: Did anyone in government,
4 federal or state, approve the release of that 4,000 gallons with-
5 out checking for --

6 MR. GERUSKY: The 4,000 that occurred last Thursday?

7 COMMISSIONER MCPHERSON: Yes.

8 MR. GERUSKY: No.

9 COMMISSIONER MCPHERSON: Would that ordinarily be
10 NRC's responsibility to approve that?

11 MR. GERUSKY: I am not sure of the relationship bet-
12 ween routine releases between unit 1 and unit 2. That is some-
13 thing that we have to clarify. It was a routine release from
14 unit 1. It should not have been contaminated -- industrial
15 waste system -- and they were concerned about cross contami-
16 nation. They had done their basic gamma scan and gross beta
17 determination. And NRC, because of recently finding increased
18 levels of strontium 90 in the auxilliary building and other
19 samples, they thought that all samples that were leaving the
20 plant should now be analyzed for strontium 90. Well, apparently
21 the communications failure there, you know, one operations were
22 continuing kind of as normal, and unit 2 was the emergency
23 operations and information was given to the unit 2 people and
24 never got to unit one. I think that was the problem. In any
25 case the level should have been below the allowable level for

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1 strontium 90 since the gross beta number is below the allowable
2 level of strontium 90. But we don't have any authority.

3 There is a question now with the federal Water and
4 Pollution Laws concerning whether the states have authority for
5 releases from -- releases of radioactive material in air and
6 water and that has not been resolved. I don't believe we have
7 the authority yet.

8 CHAIRMAN KEMENY: Professor Pigford?

9 COMMISSIONER PIGFORD: Does the State of Pennsylvania--
10 will the State have to approve the clean up operations before
11 they are initiated?

12 MR. GERUSKY: Well, the company and NRC have both
13 stated that they will both provide us with detailed information
14 concerning the clean up procedure for review and they didn't
15 include approval. So I don't know what will happen if we don't
16 agree.

17 COMMISSIONER PIGFORD: Well, is it your understanding
18 that there is no legal requirement for them to have your ap-
19 proval on that?

20 MR. GERUSKY: That is correct.

21 COMMISSIONER PIGFORD: Thank you. May I ask one fol-
22 low up question? What is your understanding on the status of
23 the plans of the clean up operation as to when they will ini-
24 tiate?

25 MR. GERUSKY: Well, I believe that the clean up of

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g 3 1 the water in the tanks and the auxilliary building will begin
2 or are planned to begin within the next few weeks, after review
3 of the systems designed to clean up that, and the review of the
4 environmental statement that is being written by the Regulatory
5 Commission. We don't have copies of either of those documents
6 yet. But that will be within the next few weeks. No decision
7 has been made as to what to do with the water that is cleaned
8 up. That will be held on site. From my knowledge, that is
9 not going to be included in the envrionmental statement that
10 NRC is writing. They are going to write a series of environ-
11 mental statements down the line as different things take place.

12 I have requested from the utility a schedule of
13 operations that will take place at the plant, a proposed schedule
14 and that it be made public, that it be puublished in the news-
15 papers because the public is concerned as to what is going to
16 happen next at the plant. And we are also concerned.

17 COMMISSIONER PIGFORD: Do you have in hand any plans
18 from them concerning the clean up operation?

19 MR. GERUSKY: No. We have a copy of the drawings and
20 information concerning the epicore to water clean up -- epicore
21 one and two clean up systems and that is how the facility works.

22 COMMISSIONER PIGFORD: You have stated that the NRC
23 is to file an environmental impact statement.

24 MR. GERUSKY: An environmental statement.

25 COMMISSIONER PIGFORD: Has the utility provided its

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1 own contribution to that yet?

2 MR. GERUSKY: I don't know.

3 COMMISSIONER PIGFORD: And why is it that decontami-
4 nated water will be held up on site after the clean up is com-
5 pleted.

6 MR. GERUSKY: Well, there is a law suit filed by the
7 City of Lancaster and the Commonwealth of Pennsylvania has joined
8 the suite as an amicus curiae to prevent the discharge of the
9 water until a complete review of the environmental review is
10 made and a complete safety review is made.

11 COMMISSIONER PIGFORD: Is the State a party in this
12 action?

13 MR. GERUSKY: The State is a friend of the court in
14 the action.

15 COMMISSIONER PIGFORD: I see. Has the State made
16 any recommendation concerning that?

17 MR. GERUSKY: We made the same recommendation but not
18 in a law suit.

19 COMMISSIONER PIGFORD: Thank you.

20 CHAIRMAN KEMENY: Professor Taylor?

21 COMMISSIONER TAYLOR: You mentioned a few minutes ago
22 that the levels of strontium 90 in the water -- I believe you
23 said in the auxilliary building, has gone up recently?

24 MR. GERUSKY: Higher than they anticipated. The ratio
25 of strontium to cesium apparently is not what they anticipated.

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5 1 COMMISSIONER TAYLOR: As far as -- well, first of all,
2 where would that information come from? You say they --

3 MR. GERUSKY: From the utility.

4 COMMISSIONER TAYLOR: From the utility.

5 MR. GERUSKY: And from the NRC people on site.

6 COMMISSIONER TAYLOR: Do you know whether that increase
7 is attributed to a change in the way they are doing the measure-
8 ments, as opposed to an actual increase in the inventory of
9 strontium 90?

10 MR. GERUSKY: Yes. I don't think there has been an
11 increase in inventory. I think, you know, they were concerned
12 mainly in the first few months about iodine concentrations and
13 the shorter half-lifed isotopes. Now we are getting longer
14 half-lifed isotopes building up and the cesiums and the stron-
15 tiums, and the other kryptons are the ones that are coming to
16 the fore and they are the ones that are going to cause the
17 future problems.

18 COMMISSIONER TAYLOR: Well, as I understand it, there
19 have been fairly steady monitorings of the water in contact
20 with the core, inside the pressure vessel.

21 MR. GERUSKY: Yes. I am not sure whether it is in
22 there or in the containment building.

23 COMMISSIONER TAYLOR: I am not sure about the details
24 about the strontium 90 content but the general impression I had
25 is that they have been small.

1 MR. GERUSKY: I don't have it with me.

2 COMMISSIONER TAYLOR: So you, at least right now,
3 don't know of any connection between the possible change in view
4 of how much strontium 90 is in the auxilliary building com-
5 pared to any previous estimates of the total strontium 90 that
6 might have been released from the fuel in the core?

7 MR. GERUSKY: No.

8 COMMISSIONER TAYLOR: Thank you.

9 CHAIRMAN KEMENY: Thank you, Mr. Gerusky. Oh, sorry,
10 yes, Commissioner Trunk.

11 COMMISSIONER TRUNK: Let me see, on what factors
12 would the recommendations for evacuation be based on?

13 MR. GERUSKY: On the potential for exposure between
14 one and five rem. I don't think we have to -- it is our intent
15 to keep exposures as low as is possible, below those guidelines.
16 Those are guidelines and action can be taken prior to reaching
17 those guidelines. If there is a significant release from any
18 plant and doses can be reduced significantly by moving people,
19 we would recommend moving people. But when we are talking
20 about doubling a one year background exposure in the vicinity
21 of the plant, an 8 mil rem exposure over ten miles, over the
22 course of the accident, I don't think that -- I think that
23 the problem of moving the people and resettling them, and
24 getting them back in, and everything else is not worth that
25 exposure.

3 7 1 COMMISSIONER TRUNK: Well, if it was over the five
2 and the people did evacuate --

3 MR. GERUSKY: Right.

4 COMMISSIONER TRUNK: How long would it be before we
5 would be able to come back?

6 MR. GERUSKY: We have in our plan a section on re-
7 clamation and allowing people back in. Let us be honest, the
8 plans are made to handle the immediate emergency and not to
9 handle the followup. We just make the assumption, and I think
10 it has been pretty well drawn out in this accident, that we
11 will have more feds around telling us, and giving us advice in
12 any accident that occurs concerning recovery, how long people
13 should stay out of an area, what kinds of resources can be used
14 to decontaminate, what we do about the whole bit. We will have
15 the whole Federal Government down in Pennsylvania handling the
16 situation and we will have almost no say in what goes on. So
17 we haven't really worried about recovery. We know that we
18 aren't going to have much part in it.

19 COMMISSIONER TRUNK: Whom do I ask that question?

20 MR. GERUSKY: Unfortunately, you can't. The people
21 who would be involved do not believe that they will be involved
22 now. They say it is our responsibility. But we know that NRC
23 will take over the responsibility, as will FDA, as will the
24 Department of Agriculture, and all of the Federal Agencies. I
25 mean you can design a recovery program but that won't happen

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1 that way.

2 CHAIRMAN KEMENY: Thank you very much, Mr. Gerlsky.

3 The Commission is going to recess until approximately 1:00 p.m.

4 (Thereupon, at 12:17 p.m. the Commission recessed.)

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CHAIRMAN KEMENY: Could I ask the Commissioners
to come back to session, please?

3 Would Counsel Harvey please call the next witness
4 and swear him in?

5 MR. HARVEY: Dr. MacLeod, please?
6 Whereupon,

7 GORDON K. MAC LEOD
8 was called as a witness and, after being first duly sworn,
9 was examined and testified as follows:

10 CHAIRMAN KEMENY: Would you please state for the
11 record your full name and your current position?

12 MR. MAC LEOD: My name is Gordon Kenneth MacLeod.
13 I am Secretary of Health, Commonwealth of Pennsylvania.

14 CHAIRMAN KEMENY: Thank you.
15 Counsel?

16 MR. HARVEY: Dr. MacLeod, how long have you been
17 Secretary of Health for the Commonwealth of Pennsylvania?

18 MR. MAC LEOD: Approximately four months. I was
19 sworn in on March 16, 1979.

20 MR. HARVEY: So that you had been in office only
21 a matter of days before the Three Mile Incident occurred?

22 MR. MAC LEOD: That is correct, sir.

23 MR. HARVEY: Could you describe what role the
24 Department of Health plays in the State Government?

25 MR. MAC LEOD: The Department of Health is

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1 primarily composed of, has four different major functions.
2 One of them is as the state health planning agency which is
3 primarily a regulatory function. One of them is an assurance
4 of quality, a quality assurance function which is, also, a
5 regulatory function. A third function is as a conduit for
6 federal funds going to various programs in which there is
7 primarily an audit but, also, a professional function, and a
8 fourth function is to serve as the surrogate county health
9 department for 61 of the 67 counties in Pennsylvania.

10 MR. HARVEY: Turning to the Three Mile Incident
11 itself, when did you first become aware that there had been
12 an incident at the nuclear plant?

13 MR. MAC LEOD: I heard about the accident first
14 early on Wednesday morning. I had arrived at the Pittsburgh
15 Office of the Health Department and sometime between 8 and
16 9 o'clock, I received a call from the Harrisburg Office
17 advising me about the accident.

18 MR. HARVEY: What did you do as a result of the
19 call?

20 MR. MAC LEOD: I asked the person who called me,
21 the Director of Health Communications to put me in touch
22 with the person who was in charge of radiation health within
23 the Health Department.

24 He advised me that we did not have a Division of
25 Radiation Health. I then asked him to put me in touch with the

1 liaison.. Well, I asked him where was radiation health, and
2 he said that it was in the Department of Environmental
3 Resources.

4 I then asked him if he would put me in touch with
5 the person who was our liaison person, and I found out that
6 in fact, we have no liaison with that department.

7 I then asked him to collect for me the library
8 references and journals that would inform me about radiation
9 health and found out that we did not have a library. It had
10 been dismantled about two years ago for budgetary reasons.

11 MR. HARVEY: So, in essence, is it fair to state
12 that there really was no radiation health capability within
13 the Department of Health at the time of the Three Mile Island
14 accident?

15 MR. MAC LEOD: With one major exception and one,
16 perhaps, minor exception. During an accident at the
17 Shipping Port Nuclear Reactor some years ago, Dr. George
18 Tokohata who was in charge of our research bureau was
19 involved in doing studies related to that activity, and of
20 course, I, as a physician, have had some minimal exposure,
21 no pun intended, to the radiation theory in my medical
22 training.

23 MR. HARVEY: But those two instances of knowledge
24 about radiation health problems are more coincidental than
25 organizational, isn't that correct?

1 MR. MAC LEOD: That is correct.

2 MR. HARVEY: What did you do on Wednesday with
3 respect to the Three Mile Island accident, other than
4 informing yourself about the radiation health capability
5 of the Department?

6 MR. MAC LEOD: Well, I remained in touch with the
7 office and with the staff and paid particular attention to the
8 media, as announcements were made over the course of the day.
9 I had planned to spend the day in Pittsburgh and did so.
10 The events of the day did not indicate that there had been,
11 that there was any major problem with respect to the accident
12 at Three Mile Island.

13 MR. HARVEY: Had you formulated any recommendations
14 at all for the Governor at that point?

15 MR. MAC LEOD: I did not.

16 MR. HARVEY: Had you considered the possibility
17 as a substantial possibility of recommending to the Governor
18 that he consider evacuation of any kind?

19 MR. MAC LEOD: Not at that point, sir.

20 MR. HARVEY: Now, as of Thursday, could you describe
21 what your activities were with respect to the Three Mile
22 Island accident?

23 MR. MAC LEOD: Well, on Thursday I returned from a,
24 I was returning from a speaking engagement in Philadelphia
25 at about midday and arriving back in Harrisburg I was in touch

1 with the Governor's Office, as I was on the way back, as I
2 was in touch with my own office on the way back from
3 Philadelphia.

4 On that return trip I was made acutely aware of the
5 need to perhaps reinforce our knowledge with respect to the
6 radiation health aspects, and so advised the Governor upon
7 my return, probably early afternoon, and actually placed a
8 call to Dr. Neil Wall, a former colleague of mine, and the
9 Chairman of the Department of Radiation Health at the
10 Graduate School of Public Health, University of Pittsburgh,
11 and actually had that call with Dr. Wall to come into the
12 Governor's Office where he and his staff and, I believe, the
13 Lieutenant-Governor and some of his staff were, also, in
14 attendance.

15 We briefly discussed some of the issues relating
16 to radiation exposure and particularly at high levels.
17 However, there was no discussion of evacuation on that call
18 to the best of my knowledge.

19 MR. HARVEY: So that you had a conference call
20 with Dr. Wall, the recognized expert on radiation health
21 problems, at that stage on Thursday?

22 MR. MAC LEOD: That is correct.

23 MR. HARVEY: And there was no discussion of
24 evacuation at that point?

25 MR. MAC LEOD: That is correct.

1 MR. HARVEY: All right. What happened next?

2 MR. MAC LEOD: Later that afternoon I received a
3 call from Dr. Anthony Robbins, the Director of NIOSH, and --

4 MR. HARVEY: What is NIOSH? Could you explain that
5 for us?

6 MR. MAC LEOD: NIOSH is the National Institute of
7 Occupational Safety and Health. It is an agency of the
8 Federal Government that I believe is a subset of the
9 Center for Disease Control, one of the agencies within the
10 Center for Disease Control.

11 MR. HARVEY: Is that within the Department of
12 Health and Welfare?

13 MR. MAC LEOD: Within Health, Education and Welfare,
14 that is correct.

15 MR. HARVEY: What did Dr. Robbins say?

16 MR. MAC LEOD: Dr. Robbins expressed serious
17 concern about the accident and particularly urged me to
18 consider evacuation of the people surrounding Three Mile
19 Island.

20 MR. HARVEY: Was it a strong recommendation as you
21 interpreted it?

22 MR. MAC LEOD: I felt that he was seriously
23 concerned. I thought that he was particularly concerned
24 about the entire accident, and I would consider it a strong
25 recommendation.

1 put in a conference call to Colonel Henderson, the Director
2 of PEMA, to Tom Gerusky who was the Director of the Bureau
3 of Radiation Protection, to the Lieutenant-Governor's Office
4 and his aide, John Pierce, and my deputy, Mr. Welch.

5 We discussed the recommendation at some length.

6 MR. HARVEY: What did you tell them had been
7 recommended?

8 MR. MAC LEOD: Well, I represented Dr. Robbins as
9 a federal official, and I advised them that he had
10 recommended the evacuation of the population around Three Mile
11 Island and that he had done it not on the basis of the
12 radiation levels but on the basis of the inability or the
13 fact that it was not known how to shut down the reactors.

14 MR. HARVEY: Did you mention, also, that Dr. Robbins'
15 recommendation had been made in consultation with the
16 Bureau of Radiological Health of the Department of Health,
17 Education, and Welfare?

18 MR. MAC LEOD: I believe I did, but I couldn't
19 recall the detail, that detail at this time.

20 MR. HARVEY: What was the reaction when that, when
21 you informed these people of that recommendation?

22 MR. MAC LEOD: Their reaction was essentially the
23 same as mine, that the radiation levels were not sufficiently
24 high to warrant evacuation, and I reported to them that was
25 not his concern, but it was really with respect to the

1 MR. HARVEY: Did he give his reasons on why he
2 was urging you to consider evacuation?

3 MR. MAC LEOD: Well, my response to him was that
4 the radiation levels at that time were not sufficiently high
5 to warrant evacuation, and he advised me that it was not
6 his concern about the radiation levels, but about his concern
7 about the inability to shut down the reactors.

8 MR. HARVEY: Did he mention that he had been in
9 consultation with any other federal agencies?

10 MR. MAC LEOD: Yes, sir. He said that he had been
11 in consultation with the Bureau of Radiological Health within
12 FDA and was speaking both from the standpoint of the
13 National Institute of Occupational Safety and Health, as well
14 as the FDA, that bureau within the FDA.

15 MR. HARVEY: So, as you understood it, Dr. Robbins
16 was basing his recommendation on his position as Director
17 of NIOSH, his experience in Colorado with nuclear reactor
18 problems and, also, a consultation with the Bureau of
19 Radiological Health?

20 MR. MAC LEOD: And I think it is fair to say a
21 long-standing personal relationship with myself.

22 MR. HARVEY: What did you do as a result of that
23 recommendation?

24 MR. MAC LEOD: After discussing it with him, I felt
25 that I could only pass it along to other state officials and

1 reactors themselves, and it was the consensus of each person
2 there that this was not sufficient. There was not sufficient
3 information with respect to the ability to shut down the
4 reactors to make a decision about evacuation at that time.

5 I then polled the group individually with respect
6 to a specific proposal that I made, and that was that if it
7 becomes apparent that there is not, that there is -- we have
8 reached an experimental mode which I believe was Dr. Robbins'
9 words with respect to the shutdown process, that we would
10 be back in touch with them and seek consensus, concurrence
11 with respect to possibility of evacuation.

12 It was during that conversation that I further
13 focused the question, not only in terms of the general
14 population, but I focused it specifically with respect to
15 pregnant women and children under the age of 2, and even
16 with that focus, the group by poll, unanimously said that
17 they did not feel there was an indication at that time to
18 evacuate.

19 MR. HARVEY: When you talk about focusing the
20 question, were you proposing that the group consider the
21 evacuation of pregnant women and children under the age of 2?

22 MR. MAC LEOD: No, it was an academic proposal.
23 I posed actually what Dr. Robbins had suggested in the
24 first instance, and then I wanted to focus it more acutely
25 with respect to the population I thought would be more acutely

1 at risk.

2 MR. HARVEY: What was the basis for your focusing
3 the question on pregnant women and children under the age of
4 2?

5 MR. MAC LEOD: I think it is general knowledge
6 within the health professions and elsewhere that the embryo,
7 the fetus and perhaps the young child has a greater
8 sensitivity to the consequences of radiation exposure when
9 looking at all populations within the species.

10 MR. HARVEY: What was the consensus of the group
11 with respect to your proposal?

12 MR. MAC LEOD: The consensus was that there was
13 no indication at this time to warrant evacuation of either
14 that population or of the general population.

15 MR. HARVEY: Did that end the call at that point?

16 MR. MAC LEOD: That ended the call.

17 MR. HARVEY: What did you do for the remainder of
18 Thursday with respect to the Three Mile Island incident?

19 MR. MAC LEOD: We were actively involved in preparing
20 ourselves with regard to preventive approaches. We had been
21 in touch with, I believe it was Thursday, perhaps Friday,
22 with the various other health agencies, receiving information
23 and primarily providing a consultative service to the
24 Governor's Office.

25 MR. HARVEY: Did you receive a call that evening

1 concerning the Three Mile Island incident?

2 MR. MAC LEOD: That evening I had planned a trip
3 to Philadelphia in order to meet with a group of children
4 and youth program directors within Philadelphia, and I drove
5 down the night before, again, in touch with the office, and
6 about 11 o'clock that night I received a call from the
7 Governor's legislative assistant, Mr. Richard Stafford, and
8 we talked about many things related to legislative programs
9 but, incidentally, I incidentally inquired about the status
10 of the Three Mile Island accident.

11 He informed me that there had been an accidental
12 release of radioactive material into the Susquehanna River,
13 and I asked him what prompted that. He said that it was a,
14 to the best of his knowledge, it was an error of judgment
15 on the part of middle management within the organization.

16 MR. HARVEY: Now, what impact did that disclosure
17 have on your thought process?

18 MR. MAC LEOD: My own evaluation of the events of
19 Wednesday morning, early Wednesday morning was that this was
20 a technical error, and then on Thursday evening my evaluation
21 was that this was human error, and I felt that the situation
22 was somewhat unstable. I decided to take no action that
23 evening. However, I did sleep on it, and the following
24 morning, quite early, I called my deputy secretary who had
25 been on the job one day, since he had just been appointed on

1 the 29th and advised him to urge the Governor to give the
2 strongest possible consideration to having pregnant women and
3 children under the age of 2 leave the area.

4 Again, this was a precautionary step on my part,
5 a recommendation on my part, and in no sense, I don't think
6 I ever used the word "evacuate."

7 MR. HARVEY: So, as of Thursday evening, having
8 slept on it on Friday morning, you reached the conclusion
9 that there should be an evacuation of pregnant women and
10 children under the age of 2 based first on the fact that
11 there had been a technical flaw in the system on Wednesday,
12 second on the fact that there had been human error apparently
13 in the discharge of radioactive waste water into the river,
14 and third on the basis of Dr. Robbins having recommended
15 evacuation?

16 MR. MAC LEOD: I am sure that influenced my
17 decision making, that I was aware that this recommendation
18 had come, and I certainly was sensitive to it, but I would
19 say that that was probably the least of the factors, was
20 Robbins' recommendation.

21 MR. HARVEY: All right, but as a result of those
22 factors taken together, you reached the conclusion that your
23 assistant should attend all meetings with the Governor the
24 following day and recommend strongly to the Governor that he
25 consider advising pregnant women and children under the age of

1 2 to leave the area?

2 MR. MAC LEOD: That is correct, sir. I did not
3 recommend evacuation.

4 MR. HARVEY: Were you aware at the time that you
5 made that recommendation that the waste water discharge had
6 been made in consultation with the State Department of
7 Environmental Resources?

8 MR. MAC LEOD: I was not, nor was it reported to me
9 as such.

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1 MR. HARVEY: I take it that on Friday your assistant
2 or deputy, Mr. Welch, did attend meetings and did transfer
3 that recommendation to the Governor, is that correct?

4 MR. MACLEOD: That is correct.

5 MR. HARVEY: Did you also have contacts with the
6 Governor during Friday morning?

7 MR. MACLEOD: I did. I had several telephone conver-
8 sations with the Governor, the Lieutenant Governor, and others
9 in the Governor's office in the course of the morning as I
10 was travelling from one meeting to a meeting with the District
11 Health Director in Philadelphia.

12 MR. HARVEY: And were you repeating your recommenda-
13 tion at that time?

14 MR. MACLEOD: I urged them to give it the strongest
15 possible consideration at that time, my feeling being that
16 the decision was up to the Governor but that I should at
17 least give him that advice and based upon the reasoning that
18 I have already mentioned.

19 MR. HARVEY: And later in the day, you learned that
20 the Governor had in fact advised pregnant women and preschool
21 children to leave the area?

22 MR. MACLEOD: That is correct.

23 MR. HARVEY: Now, as a result of your Three Mile
24 Island experience and finding no radiation health capability
25 within the Health Department in the early days of the accident,

1 have you made legislative proposals to change the radiation
2 health capability of the Department of Health in the Common-
3 wealth of Pennsylvania?

4 MR. MACLEOD: We have done two principal things and
5 a third thing which is in process. The first thing we have
6 done is to propose a reorganization to the Office of the Sec-
7 retary of Budget and Administration, which will then go to
8 the Executive Board of the Governor and then go to become
9 fact. We have also proposed budgetary needs in order to con-
10 duct the research that would be related to this activity, and
11 we would propose that in our next budget we would have the
12 opportunity to ask for the financial support necessary to
13 staff the new offices which would include a Division of
14 Radiation Health within the Department of Health.

15 I have also been asked to serve, by the Governor,
16 on the task force to review and evaluate the Three Mile
17 Island accident, and in that capacity I serve on the Health
18 Subcommittee as one of three representatives. That Health
19 Subcommittee will make a recommendation to the full task
20 force with respect to legislation within the Commonwealth to
21 address the issue of part of the evaluation of the Three Mile
22 Island accident.

23 MR. HARVEY: Mr. Chairman, I have no further ques-
24 tions.

25 CHAIRMAN KEMENY: Dr. MacLeod, following up your

1 last remarks, without necessarily asking where your current
2 task force is coming out on this -- I ask for your personal
3 views -- what kinds of major changes would you, personally,
4 like to see as a lesson from Three Mile Island?

5 MR. MACLEOD: I think there are three major areas
6 to be addressed with respect to health issues. The first is
7 public health education. I think the second relates to
8 professional health training and education, and the third is
9 with respect to some sort of an action with respect to what
10 turned out to be an incident within an accident, and that was
11 the availability and distribution of potassium iodide in
12 association with nuclear accidents.

13 CHAIRMAN KEMENY: We heard some earlier questions
14 and answers on the subject of public education. You mentioned
15 both general public and professionals. Let me probe parti-
16 cularly the public education issue, which is a difficult one.
17 What kind of educational process would you personally envisage
18 as being effective and helpful that could raise the general
19 knowledge of these issues within the public?

20 MR. MACLEOD: Well, I think the formal aspects of
21 education would probably be better left to people with a
22 wide variety of input and a wide variety of experience in
23 this area. My own concerns within this area relate to my own
24 memory and awareness of the acute anxiety during the Fifties
25 about the nuclear age that we were coming into. The quiescence

1 of the next 25 years was remarkable, I think, that there was
2 no real response to this, although, while I was in college at
3 the time, I recall the anxiety of that age population with
4 regard to their own future.

5 I think that gap was an opportunity missed with
6 respect to educating the public to this area, and I, myself,
7 am remiss, both personally, because I did not assume the
8 responsibility myself, and I certainly was not exposed to it
9 as a mandate within a field that I think probably should have
10 made a major commitment to educating health professionals.

11 CHAIRMAN KEMENY: Have you thought in terms of
12 education within our public school system, within our colleges,
13 or some special educational programs in the area of radiation?

14 MR. MACLEOD: I think it has to go on at all levels.
15 I think it has to go on in the home, in the public school
16 systems, the colleges, and in the professional schools. There
17 is nobody, I think, who should be excluded in this age of
18 the nuclear age.

19 CHAIRMAN KEMENY: The reason I asked that is, I
20 certainly, myself, would like to believe it belongs in the
21 public educational system, but if my memory is right, the
22 clear majority of students who graduate from high schools do
23 not get any course in physical science at all, let alone any-
24 thing as sophisticated as radiation dangers.

25 MR. MACLEOD: Well, I recall when my children were

1 in grammar schools, at least on the bulletin boards they had
 2 that type of education that goes on there with respect to
 3 cigarette smoking, marijuana, drugs, things of that sort. It
 4 seems to me that even at that level, an awareness that we are
 5 in the nuclear age, I think, would be very helpful, and to go
 6 beyond that, I think, with respect to even a nonscientific
 7 approach, sociological, social science approach, to educating
 8 people to the fact that we are living in the age that we are.

9 CHAIRMAN KEMENY: Thank you.

10 Commissioner McPherson?

11 COMMISSIONER MCPHERSON: Dr. MacLeod, I yield to
 12 no one in my ignorance of this whole field, so I am very
 13 inclined to ask this question. There has been a lot of ques-
 14 tioning this morning and now of you about this business of
 15 education, but it seems to me that, looking over what happened
 16 from Wednesday, March 28, until, say, about Monday, that a lot
 17 of very highly educated people, including yourself, were very
 18 much in the dark about what was going on, about what its sig-
 19 nificance was, about what to recommend ought to be done with
 20 respect to evacuation of persons, about what it portended,
 21 about whether to release and vent gases and waters or not,
 22 and I wonder whether a crash education program that made
 23 everyone Ph. D.'s and M. D.'s in the area of nuclear plants
 24 is going to do much good if we have that continuing uncertainty.

25 MR. MACLEOD: I am not necessarily referring to a

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1 crash education program. I am thinking of something that
2 would really restructure the educational process so that --

3 COMMISSIONER MCPHERSON: Yes, but I am asking, to
4 what end?

5 MR. MACLEOD: Well, to the end that -- as you have
6 heard this morning, there has been, there was a relative
7 awareness of the situation going on at Three Mile Island in
8 Harrisburg that was so much greater than at a distance. As
9 someone put it, and I perhaps first said, the level of
10 hysteria was directly proportional to the square of the dis-
11 tance from Three Mile Island, and that phenomenon was in fact
12 influencing the situation.

13 It was my feeling, in the Harrisburg area, while we
14 were -- there was some confusion, there was an absence of
15 first hand knowledge and first hand information with respect
16 to certain standards and certain guidelines, I think the job
17 that had to be done was performed by a group of people who
18 were basically functioning professionally and doing a reason-
19 ably good job.

20 COMMISSIONER MCPHERSON: Well, I will let it pass
21 because I -- I simply make the point that I think education
22 is fine, but I am not sure what effect it would have had.

23 I would like to turn to --

24 MR. MACLEOD: Well, I am not sure it was going to
25 have an effect on the population, on the group of people who

1 were responsible for managing the accident. I think the --

2 COMMISSIONER MCPHERSON: I am thinking about the
3 population.

4 MR. MACLEOD: I am thinking of the population, and
5 I think that group is another group from which you were
6 referring to. If you were saying that the management of the
7 accident was in some degree of confusion, I would agree that
8 that is bound to happen in any situation such as this. But
9 if the population had been aware, I think some of the later
10 consequences and concerns that have been raised with respect
11 to psychological stress might have been handled in a somewhat
12 different way.

13 COMMISSIONER MCPHERSON: Well, that is possible.

14 I would like to turn to another line of inquiry,
15 and that is where recommendations got made, from whom they
16 were made. You recommended to the Governor that he suggest
17 the leaving, not the evacuation but the leaving of pregnant
18 women and school age children, is that correct?

19 MR. MACLEOD: That is correct, sir.

20 COMMISSIONER MCPHERSON: Do you think that was
21 decisive in persuading the Governor to issue such a message?

22 MR. MACLEOD: No, sir, but I think it might have
23 influenced him.

24 COMMISSIONER MCPHERSON: Was persuasive.

25 MR. MACLEOD: The message was communicated, as I

1 indicated, early in the morning, and it was not until approxi-
2 mately noontime during a telephone conversation with Chairman
3 Henry that the decision finally culminated in an action to
4 make a recommendation that -- and I believe the Governor used
5 the term on his announcement, which I heard on the radio,
6 again coming back from Philadelphia, as an excess of caution.

7 COMMISSIONER MCPHERSON: Yes. What strikes me, Dr.
8 MacLeod, is that you had been in office very few days and your
9 deputy had been there one day. You had been around making
10 speeches on Wednesday and Thursday, previously planned
11 speeches, and visiting various facilities unrelated to Three
12 Mile Island. Your conversations with people about Three Mile
13 Island were, I believe you used the word or conveyed the
14 impression of afterthought, in one conversation about how
15 things were going there, and that, nevertheless, your advice
16 to the Governor, inasmuch as you were placed highly in the
17 Governor's cabinet, was probably persuasive to him.

18 What strikes me is that this issue of what should
19 be finally done by the state official, the hic -- state
20 official, kept getting escalated away from those people who
21 seemed to know most about it to people who had had a very
22 remote connection with it and very little touched with it
23 during the period from Wednesday through Friday. Does that
24 strike you as an unfair description of what happened?

25 MR. MACLEOD: Are you suggesting that because of my

1 travels I had very little connection with the --

2 COMMISSIONER MCPHERSON: Well, I am suggesting, from
3 your own deposition and your own testimony here, that you were
4 not utterly concentrated on Three Mile Island during the
5 period from Wednesday through Friday, when you made that
6 recommendation.

7 MR. MACLEOD: That is correct, sir.

8 COMMISSIONER MCPHERSON: That in fact you were
9 doing other things a good deal more than you were concentrat-
10 ing on Three Mile Island.

11 MR. MACLEOD: Well, I am not sure that was the case,
12 because I certainly spent a great deal of time on the tele-
13 phone. In each of the cars, as I was riding in the car, I
14 had constant telephone communication with my office. I cer-
15 tainly was -- I did give a talk in Philadelphia for an hour
16 or so on Thursday morning, and I did meet with the group in a
17 room with a telephone in the room in which I was in conversa-
18 tion with my office three times at 7:30 to 8:30 on Friday
19 morning.

20 Subsequently, I was in touch with the Governor's
21 office for approximately an hour and a half by telephone as
22 I traveled across town. During the meeting with the Director
23 of Health of the City of Philadelphia, I was interrupted four
24 or five times during that meeting to answer telephone calls.
25 Then on the way, I was preparing to return to Pittsburgh for

1 another meeting, and it was when I heard the announcement by
2 the Governor upon my recommendation, I advised the driver to
3 return me to Harrisburg, and I felt at that time the situation
4 had begun to escalate.

5 But I think it had a great deal of attention on the
6 part of all the people who were involved at that time, but I
7 think if any action taken by a state official to depart from
8 what would be considered a fairly reasonable schedule would
9 have been interpreted as perhaps a greater reaction to what
10 turned out to be a matter of great concern and a matter of
11 potential damage and potential harm, but did not in fact turn
12 out to be more than just a moderate radiation exposure, per-
13 haps --

14 COMMISSIONER MCPHERSON: Are you saying that it
15 would have been -- would have raised eyebrows if you had paid
16 more attention to Three Mile Island during this period?

17 MR. MACLEOD: Not at all. I think that -- I don't
18 think that it was really possible to pay much more attention
19 to Three Mile Island and still continue the activities that I
20 was involved in. I was certainly aware of it at all times.

21 COMMISSIONER MCPHERSON: Well, all right. I don't
22 intend to pursue your schedule question. Could I ask you, do
23 you have any authority in your office with respect to any of
24 the events that are currently going on at Three Mile Island,
25 and I distinguish authority from your appointment to this

1 what happened group. I am speaking of authority to instruct
 2 the utility or anyone connected with it with respect to what
 3 they do with the contaminated water --

4 MR. MACLEOD: No, sir.

5 COMMISSIONER MCPHERSON: -- or with the core.
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1 CHAIRMAN KEMENY: Dr. Marks.

2 COMMISSIONER MARKS: Thank you. I would like to ex-
3 plore briefly three somewhat separate areas: It is our under-
4 standing that a study Shippingport nuclear station which you
5 referred to was conducted in 1974, and a number of recommendations
6 were developed. I would just like to get a followup on the
7 status of those: One of them was to establish a vital statis-
8 tics reporting system by area of residents. Has that been im-
9 plemented?

10 MR. MCLEOD: Not to the best of my knowledge.

11 COMMISSIONER MARKS: Another was to establish a tu-
12 mor registry. Has that been implemented?

13 MR. MCLEOD: No, it has not.

14 COMMISSIONER MARKS: It has not. You have no tumor
15 registry in the Commonwealth of Pennsylvania?

16 MR. MCLEOD: That is correct.

17 COMMISSIONER MARKS: And I assume you have no registry
18 of birth defects or genetic defects?

19 MR. MCLEOD: Not to the best of my knowledge.

20 COMMISSIONER MARKS: I guess you don't know why these
21 recommendations weren't followed up?

22 MR. MCLEOD: I do not, sir.

23 COMMISSIONER MARKS: You haven't found out since TMI?

24 MR. MCLEOD: No, sir.

25 COMMISSIONER MARKS: I do understand that your task

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1 force is considering long term epidemiological studies in fol-
2 lowup of the population of the area of Three Mile Island?

3 MR. MCLEOD: Well, the Governor's task force is not
4 involved with that aspect but the Department of Health has
5 created a task force to undertake health research with respect
6 to radiation related to the TMI accident.

7 COMMISSIONER MARKS: Right.

8 MR. MCLEOD: And through this -- under the auspices
9 of this panel we are proposing to do epidemiological studies,
10 and have actually completed a survey of the population within
11 a five mile radius of Three Mile Island.

12 COMMISSIONER MARKS: A survey of the population with
13 regard to what?

14 MR. MCLEOD: Well, with regard to their exposure by
15 virtue of their location at the time of the accident; some
16 previous patterns that were predisposed to cancer, for example,
17 we will be getting their exposure to any radiation therapy,
18 any cigarette smoking patterns. So we are just undertaking a
19 base line survey of the population with the intent of following
20 that population over a period of ten to twenty years.

21 COMMISSIONER MARKS: Are you at all concerned that
22 focusing on this one area of the population might have certain
23 adverse effects? For example, psychological effects?

24 MR. MCLEOD: Well, we were concerned about any action
25 that was taken with respect to the entire accident. Focusing

3
1 on this population in terms of adverse psychological effects
2 wouldn't seem to be borne out. The population greeting the
3 survey with extraordinary enthusiasm. I think we did do several
4 things that did seem to work out well. We announced that we
5 were going to undertake the survey. We did make it entirely
6 voluntary. We reached out to the population rather than to
7 have them come out to a central agency. We actually made a
8 house to house survey of some 14,000 homes of some 35,000
9 people. And we had something in excess of 99.5 percent res-
10 ponse.

11 COMMISSIONER MARKS: But do you have built into this
12 a evaluation of the psychological impact of this?

13 MR. MCLEOD: We have a base line data with respect
14 to their exposure and we are proposing to do a numerator study.

15 COMMISSIONER MARKS: Psychological effects? Behavioral
16 effects?

17 MR. MCLEOD: We are proposing to do a numerator study
18 that will address the behavioral effects.

19 COMMISSIONER MARKS: Of the study itself, as well as
20 the accident?

21 MR. MCLEOD: Of the --

22 COMMISSIONER MARKS: You see, what I am driving at is
23 that there is evidence that when you focus in on a population
24 like this, you are going to have some effects on their behavior
25 and their emotional reaction on these types of accidents. That

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1 effect may even, in fact, be greater than any possible damage
2 from exposure to radiation.

3 MR. MCLEOD: Well, I am not familiar with that evi-
4 dence but I would say that what we would propose to do, and
5 actually have proposed in the preliminary stage, to undertake
6 a controlled study if we can get the wherewithall to conduct a
7 controlled study, so that we would get an opportunity to see,
8 or at least to measure that kind of a phenomenon. If that, in
9 fact, is the case, I think that we should bring it to the at-
10 tention of a blue ribbon panel. It has not been mentioned, I
11 think, by a group of very distinguished scientists.

12 COMMISSIONER MARKS: The psychological impact of
13 doing the study itself has never been brought up?

14 MR. MCLEOD: That is correct. This is the first I
15 have heard of it.

16 COMMISSIONER MARKS: Okay. How are you going to --
17 against what data are you going to judge the data you are col-
18 lecting with regard to genetic or teratogenic, or oncogenic
19 data in this area, with respect to -- I mean where is your con-
20 trol population?

21 MR. MCLEOD: Well, as I indicated, we do not have the
22 wherewithall to undertake a control study to date but we are
23 looking for the resources and we are proposing to do it through
24 the implementation of a tumor registry in the Commonwealth. And
25 if we can, in fact, get a comorable population within the

g 5 1 central Pennsylvania area, this would be the designated area
2 that we would be using. We do have two other fortuitous events,
3 one is that Dr. Tokahara had done a pregnancy outcome study,
4 just completed, on the basis of the last five years of data
5 prior to the Three Mile Island accident. So we have a longi-
6 tudinal control with respect to the area. And Hershey Penn
7 State Medical Center has also done a behavioral study over the
8 last several years and has some base line data in essentially
9 the same population area as the Three Mile Island population.

10 COMMISSIONER MARKS: Your comment that even if you
11 don't get the control study funded, the study you are embarked
12 on will produce data that will be both valid and interpretable?

13 MR. MCLEOD: It is my feeling that it would be, yes --
14 that the answer would be yes but that we would be looking for
15 further guidance from the panel which has been composed with
16 respect to a variety of the casualties that can happen from
17 this kind of an accident.

18 COMMISSIONER MARKS: I would like to turn now to
19 another issue, which is --

20 CHAIRMAN KEMENY: Dr. Marks, would you permit a fol-
21 low up question to the one you have raised? Then I will turn
22 it back to you. Dr. McCleod, I assume you have seen the
23 various reports of the level of radiation that was released
24 during the incident?

25 MR. MCLEOD: That is right, sir.

CHAIRMAN KEMENY: Do you expect in your study to

1 find statistically significant difference from normal occurrence
2 of, let us say, tumors?

3 MR. MCLEOD: I don't have an expectation, sir. And
4 I am trying to avoid making that pronouncement before the facts.

5 CHAIRMAN KEMENY: Yes. And what is the purpose of
6 your study? Is it to test whether there will be a statistically
7 significant difference? Or what exactly is it?

8 MR. MCLEOD: Certainly, that is one of them. One
9 doesn't know the statistical outcome of this kind of a study.
10 I think we have probably all read that the population of Denver
11 while having a higher exposure to radiation, has a lower can-
12 cer incidence, prevalence. And this kind of information
13 could well happen as a result of this study. And it might prove
14 to be statistically significant. If it were to be in the other
15 direction, I think it would be very helpful to have a control
16 study of the population, similarly studied, similarly exposed
17 to the kind of survey and questionnaire that Dr. Marks has re-
18 ferred to in order to try to make those two population groups
19 as nearly equal as possible.

20 I do think that even negative results will be helpful
21 to the population who were exposed to radiation. I think it
22 would be very helpful with respect to the entire population of
23 Pennsylvania and the country to have these kinds of data avail-
24 able in the long term. I do think the control aspect is very
25 important in order to achieve that objective, sir.

sg 7 1 CHAIRMAN KEMENY: Thank you. Dr. Marks?

2 COMMISSIONER MARKS: This is now passing sort of, you
3 know, anecdotal information but on the basis of our hearings
4 conducted in Middletown some weeks ago, and reports both in the
5 newspapers and over the television we get the impression that
6 health professionals in the area may not have an adequate know-
7 ledge even today of the hazards of radiation. The accident
8 is continuing. It is not something that is history. People
9 are concerned. Pregnant women are concerned. Mothers with
10 small children are concerned. What is your department doing
11 about it today in terms of informing health professionals in the
12 area?

13 MR. MCLEOD: We are making every effort to put to-
14 gether the organizational basis to do something. We do not have
15 the capability to do anything.

16 COMMISSIONER MARKS: Now, let me just understand this.
17 Because I am having trouble -- you have had this accute accident.
18 It has obviously been thought to be a considerable emergency
19 within the Commonwealth of Pennsylvania.

20 MR. MCLEOD: Yes, sir.

21 COMMISSIONER MARKS: Your department has not been able
22 to identify any resources to put together a task force to de-
23 velop an information service for health professionals in the
24 area to deal with the ongoing accute problem?

25 MR. MCLEOD: Well, if you are speaking in an anecdotal

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1 activity, I can address that. I have become much more know-
2 ledgeable in this area. I am by no means an expert. And I
3 have made myself available to speak to different groups, parti-
4 cularly physicians and also have prepared a document for distri-
5 bution in Pennsylvania health, which reaches some 18,000 physi-
6 cians in the Commonwealth, which will be coming out in the next
7 several weeks. It is a quarterly publication. And we have pre-
8 pared essentially a glossary of terms so that they will be
9 knowledgeable with respect to that activity. I am speaking at
10 the American College of Physicians seminar. I believe it is
11 in September, October, of this year with respect to the acci-
12 dent.

13 However, I think it is fair to report that we do not
14 have the resources to establish a division or a unit to under-
15 take this. We have assembled a group of experts to undertake
16 the studies and I think that we are in the process of trying
17 to reconstitute a department of health from what has really
18 been a department of licensing and regulation because we have
19 not -- we have no mental health in the department; we have no
20 occupational health in the department; we have no professional
21 licensure in the department; we have no vocational rehabili-
22 tation in the department; we have no environmental health in
23 the department. It is basically a department of licensure and
24 regulation with the county health department surrogate activity
25 going on. We have had, during the intervening months and

9 1 occurring at the time actually, a polio outbreak in Pennsylvania
 2 for which the Department of Health was responsible for immunizing
 3 147 thousand people in Lancaster alone. So we have had a num-
 4 ber of epidemics of that kind that we have been -- not only in
 5 Lancaster but in other counties that we have been having to
 6 manage with the kinds of resources that might be applied to the
 7 area that you are concerned with. But people have been occupied
 8 with the ongoing duties within the Department of Health that
 9 speak to the limited resources that are there.

10 COMMISSIONER MARKS: Do you perceive a need for some
 11 kind of information service to health professionals in the
 12 area?

13 MR. MCLEOD: I certainly do. And I think we have
 14 addressed it at least in a limited way with respect to the
 15 kinds of things I have mentioned.

16 COMMISSIONER MARKS: But they don't have it now?

17 MR. MCLEOD: That is right.

18 COMMISSIONER MARKS: And now is when they need it.

19 MR. MCLEOD: Well, I don't think it is only in the
 20 area. I think it is in the state and in the country.

21 COMMISSIONER MARKS: I understand that. But we are
 22 dealing with the effects of the accident at Three Mile Island.
 23 And you have here an ongoing real situation. You perceive a
 24 need but you have been unable to address that need. That is
 25 what I am hearing.

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1 MR. MCLEOD: We have addressed it in part, in a limited
2 part, very, very limited.

3 COMMISSIONER MARKS: Well, all I heard you are addressing
4 is getting together a blue ribbon committee to study
5 what you should do. But the need is today. That blue ribbon
6 committee may take how long to come in with its recommendations?

7 MR. MCLEOD: Well, as I say, that is one activity.
8 The thing that I have done is to be able to speak about the
9 issues that relate to the accident and to inform people with
10 regard to that. I have certainly also been available to -- in
11 recent weeks and months -- to press to give any information
12 that they have needed that I could be helpful with. But with-
13 in the Department of Health, it may be difficult to comprehend,
14 but we do not have the capability --

15 COMMISSIONER MARKS: Well, what is difficult for me
16 to comprehend is, you know, someone who has been in preventive
17 medicine all this time and in an academic institution, you know,
18 I guess I am having difficulty comprehending that you have not
19 been able to identify resources to get to work on this --

20 MR. MCLEOD: Let me just --

21 COMMISSIONER MARKS: In the local area and it would
22 be helpful if you could explain to us why you can't.

23 MR. MCLEOD: Well, we have been going through the
24 budget process in the last several weeks. The state health
25 department suffered a 460 thousand dollar budget cut during the

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11 1 time period in which the accident was occurring. We are now in
2 the process of trying to recompose our structure and function
3 within the state government in order to conduct those activi-
4 ties that do exist within the state government with a 460
5 thousand dollar cut out of a 10.5 million dollar abase line in
6 terms of government operations.

7 These kinds of activities really do put a major pres-
8 sure on a department that doesn't have the resources. For us
9 to make the commitment now to move and shift the entire operation,
10 facing the possibility of furloughing a large number of people,
11 I think creates a mangement problem of the highest order.

12 COMMISSIONER MARKS: Let me shift to one other area
13 very briefly --

14 CHAIRMAN KEMENY: May I ask one question? Your re-
15 marks stimulated me. Dr. Marks is making the obvious remark,
16 I think, aren't there some medical schools in the Commonwealth
17 of Pennsylvania?

18 MR. MCLEOD: Yes, sir.

19 CHAIRMAN KEMENY: I thought there were some quite dis-
20 tinguished ones.

21 MR. MCLEOD: There is one in the central part of
22 Pennsylvania.

23 CHAIRMAN KEMENY: One in the central part. Wouldn't
24 it be possible to turn to the state medical schools and ask
25 them to conduct some sort of program for the professionals in

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1 the state?

2 MR. MCLEOD: I believe they are.

3 CHAIRMAN KEMENY: You believe they are.

4 MR. MCLEOD: Yes. As I say, I participated in some
5 of them.

6 COMMISSIONER MARKS: I guess we can find out on our
7 own the sources. I think we should.

8 At the time of the accident, what was the role of
9 the Department in terms of advising hospitals with respect to
10 decreasing patient census in the event of a necessity for eva-
11 cuation, or in the event of a necessity to receive evacuees
12 from, say, a closer in area?

13 MR. MCLEOD: Well, all of the hospitals were -- could
14 probably be considered within the closer in area. We have no
15 acute care hospitals within the five mile radius. But the
16 hospitals were basically in an area of five to thirteen miles.
17 The Department of Health met with the liaison people from the
18 Hospital Association of Pennsylvania and the Pennsylvania Medi-
19 cal Society on a continuing basis from Friday or Saturday on,
20 March 30th, 31st, on a daily basis and discussed with them the
21 information that we had with respect to the accident. We
22 served mainly as a clearing house. Each day representatives
23 of the Department would survey the hospitals to determine the
24 occupancy rates and at no time were we directed with respect
25 to asking anybody, any hospital to take any action with respect
to the departure of patients.

1 COMMISSIONER MARKS: Were you advisory?

2 MR. MAC LEOD: We informed them of the events. I
3 think it's important here perhaps to at least allude to my
4 perception of the events, having pointed out the fact that we
5 were getting rather hortatory recommendations from a distance
6 and intimately involved and informed, I think, over the period
7 of the first three days, which weren't at all of a crisis
8 nature. It wasn't until the puff on Friday morning, I think,
9 that one could say that events changed and that we saw the
10 mark stepped up in proliferation of information.

11 On Friday evening, during the first briefing with
12 Harold Denton and the governor, lieutenant governor, and their
13 staffs, we received a reversal, if you will, of Harold Denton's
14 perceptions from the morning, that things were not anywhere
15 near in the acute phase that he had described. Each night
16 from there on, Saturday night, Sunday night, Monday night,
17 Tuesday night, on till the following weekend, through the
18 weekend, we met with Harold Denton and sometimes with Bob
19 Adamcik from the emergency area. And each time, the report
20 was better, was improving. At no time was there ever a lessen-
21 ing of the situation with respect to decomposition or decom-
22 pensation. There was continuing improvement of the situation,
23 which, from the beginning, was improving.

24 And so the perception was not one of great alarm. It
25 was one of business as usual, with an impending disaster

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1 recognized by all people who were there, and the concern genu-
 2 uinely expressed. But it was a matter of conducting the
 3 business of state government with respect to this accident,
 4 and perhaps primarily to the psychological stress. We had
 5 people on Monday and Tuesday who were beginning to draw their
 6 money from their bank accounts and leave the area, thereby
 7 being vulnerable with large amounts of money. The increased
 8 crime in the area, as a result of people departing.

9 So our position was basically to respond to the
 10 scientific information we had available to us, to the other
 11 information that was made available through the briefing
 12 sessions, and to conduct state government as usual. And it was
 13 in that light that we made recommendations -- or didn't, but
 14 at least advised the health professionals who were in daily
 15 communication with us about activities and events. And it was,
 16 in fact, on Thursday morning that I personally called the
 17 hospital administrators in the area and said that I thought
 18 the situation was continuing to improve and that they should
 19 be advised so. But since we had never recommended that they
 20 evacuate, leave the area, decrease their censuses, although
 21 that had happened, it was certainly a matter of my wanting to
 22 at least inform them that the situation was continuing to
 23 improve and that they could act accordingly.

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24 COMMISSIONER MARKS: Was the thrust of your communi-
 25 cation that there was no need to decrease your census, that

LA 3 1 business as usual was indicated?

2 MR. MAC LEOD: I think the thrust of my communication
3 was that we had -- there was a great expectation and a great
4 feeling on the part of many people that they wanted people to
5 stand up and say this is the situation, and it's all over or
6 it's all better or it's gone to hell. You know, there was
7 that constant pressure to speak out. I think that would have
8 been a mistake, in either instance, to say either it was
9 better, it was over, or it was worse, but that, in fact,
10 business was as usual. We were performing our duties as best
11 we knew how during a rather trying time, and that they can
12 act accordingly. In fact, some hospitals had reduced their
13 census from 300 to 70 or 80 patients within the first three or
14 four days. When I called later on in the week, after some
15 four or five days, they were still at 70 to 80 patients. And
16 they hadn't changed the patient population. They were so
17 advised that -- they were hearing a report directly from the
18 Secretary of Health, if you will, that the situation had not
19 deteriorated, it was not getting worse, despite any rumors
20 that they might have heard. In fact, they were hearing that
21 it was -- that by that time -- I think after the sixth brief-
22 ing session -- it was continuing to be reported well.

23 Harold Denton was saying at that time in briefing
24 sessions that he was very positive. He had been in touch with
25 the President and he had advised the President of how positive

LA 4 1 he was about how things were going. And we were hearing these
2 reports on a regular basis.

3 COMMISSIONER MARKS: But clearly, the governor had
4 ordered an evacuation --

5 MR. MAC LEOD: No, sir.

6 COMMISSIONER MARKS: Of pregnant women and children.

7 MR. MAC LEOD: As an excess of caution, he had
8 recommended that they leave.

9 COMMISSIONER MARKS: And there was voluntary exodus
10 from the area. And we've heard that the hospitals, some were
11 decreasing their census. We've also heard that health pro-
12 fessionals in some of the hospitals left the area. Sounds --
13 I mean, we've gotten the impression that there was confusion
14 as to what should be done and that there was no clear advisory
15 from anyone in the state government with regard to these
16 very critical matters with respect to public health and safety,
17 specifically, also, what hospitals should be doing.

18 MR. MAC LEOD: Let me fill in one other point. On
19 Sunday afternoon, April 1st, I had heard a rumor that the
20 hospitals were -- in fact, had lost their health professionals
21 and weren't able to care for their patient population. Imme-
22 diately, I called two of the administrators of the largest
23 hospitals and found out this to be a spurious report. I then
24 was told that there was to be a meeting in Dauphin County of
25 all the hospitals, nursing homes, and the medical profession.

LA 5 1 And I attended that meeting with the Secretary of Budget
2 Administration. We both advised the group assembled, of some
3 75 to 100 health professionals, that there was no indication
4 for an evacuation, that this was not the governor's or the
5 lieutenant governor's wish. And I spent approximately an hour
6 there, Dr. Willburn returning shortly after putting in an
7 appearance, and that there was no indication for any further
8 action. And I, in fact, heard the reports from each of the
9 hospitals, each of the nursing homes, and the medical pro-
10 fession and was satisfied that the situation was well under
11 control, that there was no --

12 COMMISSIONER MARKS: Did those reports include actual
13 as to --

14 MR. MAC LEOD: Actual data with respect to census.

15 COMMISSIONER MARKS: There was no increase in
16 absenteeism.

17 MR. MAC LEOD: Yes, there was, sir.

18 COMMISSIONER MARKS: Oh, there was.

19 MR. MAC LEOD: Yes, there was, but also there was
20 a decrease in occupancy.

21 COMMISSIONER MARKS: I see, I see, so they balanced
22 each other out.

23 MR. MAC LEOD: That's correct. In fact, there was
24 only one hospital that had a problem. And that one had it in
25 the OB area. And by just shifting personnel, they were able to

LA 6 1 meet their staff needs in that particular area.

2 COMMISSIONER MARKS: But what about this issue of
3 confusion? I mean, the lack of real directives as to what
4 they should do. In other words, it is your position that to
5 have given directives at that time would have been inappro-
6 priate. Let everybody decide what they want to do.

7 MR. MAC LEOD: The situation was such that by Sunday
8 afternoon, we had had two positive, progressively improving
9 reports. And I --

10 COMMISSIONER MARKS: But you still didn't give a
11 directive, saying hold the line.

12 MR. MAC LEOD: Well, we gave them a directive not to
13 evacuate. I suppose to that extent --

14 COMMISSIONER MARKS: You gave them a directive not to
15 evacuate?

16 MR. MAC LEOD: That's correct.

17 COMMISSIONER MARKS: The hospitals.

18 MR. MAC LEOD: That's correct.

19 COMMISSIONER MARKS: Not to decrease census.

20 MR. MAC LEOD: Not to evacuate the hospitals.

21 COMMISSIONER MARKS: Oh, I didn't hear that.

22 MR. MAC LEOD: I said that was the purpose of the
23 Sunday afternoon meeting, was to tell --

24 COMMISSIONER MARKS: In other words, you explicitly
25 told them not to decrease their census, to continue operating

LA 7 1 normally.

2 MR. MAC LEOD: We explicitly told them not to evacuate.
3 In other words, we had heard rumors that there was going to be
4 an evacuation of personnel and of people, and that was the
5 rumor that I was there to squelch.

6 COMMISSIONER MARKS: Then why was -- I think sometime
7 later in the week, the hospitals were seeking advisories as
8 to whether they should go back into normal operation with
9 regard to their admissions. And the information we received
10 was that they couldn't get a definite yes or no on this issue,
11 as to, yes, go back into full normal operation.

12 MR. MAC LEOD: Well, I think the situation at that
13 time, during that week, as you've heard described before, was
14 still during the period when the women and children were still
15 in an advisory to remain outside the area. And I think the
16 Department of Health was ill-positioned to refute that action,
17 which was being taken at the top level of state government.
18 So therefore our information was informal, but it was communi-
19 cated, as I already mentioned, through daily communications
20 with the agencies and, in this instance, through direct
21 communication -- I believe it was Thursday morning -- with the
22 administrators of all the hospitals and with the Pennsylvania
23 medical society.

24 COMMISSIONER MARKS: Thank you, Mr. Chairman.

25 CHAIRMAN KEMENY: Professor Marrett?

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1 COMMISSIONER MARRETT: I believe you've indicated
2 that as of Friday, you returned to your office, and you and
3 your aides spent the day planning for a public health response
4 and planning for evacuation. Of what does that planning con-
5 sist?

6 MR. MAC LEOD: We prepared an outline of activities
7 that the department would undertake, were there to be an
8 immediate and pressing need to take some action. This involved
9 a preliminary plan, preliminary phase, an alert phase, a
10 precautionary phase, and an emergency phase. And for each of
11 these phases, we developed protocol for action. The pre-
12 liminary phase was essentially the phase that we were involved
13 with throughout the accident, in other words, without any
14 imminent danger of a catastrophe, that we would prepare the
15 population. First of all, we printed over that weekend some
16 150,000 pieces of paper which gave directions for the popula-
17 tion if it needed to be handed out, and it would have been
18 handed out with the potassium iodide, which was later to be
19 forthcoming from the Department of Health, Education, and
20 Welfare.

21 COMMISSIONER MARRETT: There had been no plan prior
22 to that time. Is that correct?

23 MR. MAC LEOD: That's correct.

24 COMMISSIONER MARRETT: How was your planning coor-
25 dinated with the planning that had already gone on? PEMA had

LA 9 1 a plan, the Bureau of Radiological Protection had a plan.

2 How was your plan to interface with those?

3 MR. MAC LEOD: We were in constant communication with
4 PEMA. And we also had coordination with the Bureau of
5 Radiological Protection, Radiation Protection, through Dr.
6 Neil Wald, a consultant brought on for the accident.

7 COMMISSIONER MARRETT: Why was there a perceived
8 need for yet another plan? Were there inadequacies in those
9 existing plans, as you saw them? Why your own plan?

10 MR. MAC LEOD: Well, our specific plan was heavily
11 directed toward the distribution -- deployment, distribution,
12 and administration of an antidote, specifically to be used to
13 treat radioactive iodine 131 exposure.

14 COMMISSIONER MARRETT: So it really wasn't a general
15 plan. When it says, "evacuation for radiation protection,"
16 you're not talking about evacuation, but with reference to the
17 distribution of the potassium iodide. Is that correct?

18 MR. MAC LEOD: That's correct. It would be our
19 response to the evacuation procedure that would be proceeding
20 under the direction of PEMA and the governor's office.

21 COMMISSIONER MARRETT: Do you see, then, in the
22 long range plan that you would have something separate? Or
23 how do you plan to integrate those kinds of activities into
24 the existing planning and preparedness system?

25 MR. MAC LEOD: We are in the process of putting

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1 together a major emergency disaster plan for the health
2 department, in coordination with PEMA. We have already assigned
3 a person to that activity, and it's an ongoing process. Our
4 first area will be with respect to radiation health.

5 COMMISSIONER MARRETT: One final question on your
6 proposed reorganization. You indicate that you plan to
7 establish a division of radiological health. Does this mean,
8 in essence, reabsorbing what is now the Bureau of Radiological
9 Protection, or is there some intent to create another division?

10 MR. MAC LEOD: No, this would be a unit that would
11 relate to the prevention and the management of disease
12 processes as a result of radiation exposure and, in fact,
13 would bring in the health aspects, while in the Bureau of
14 Radiation Protection, the primary emphasis there has been on
15 the dosimetry, the hardware, the technical nuclear engineering
16 aspects. Ours would be a health emphasis and it would be --
17 as I say, it would relate to prevention and management --

18 COMMISSIONER MARRETT: But it would mean absorbing
19 those parts of the bureau that have to do with health?

20 MR. MAC LEOD: No, it does not mean that at all.
21 In fact, I think it would fill a vacuum there. We don't have
22 the resources that Dr. Marks has so aptly pointed in state
23 government. And I think that we do need those resources.
24 And this would be the emphasis of that particular unit, would
25 be -- the primary emphasis would be to address that deficit.

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LA 11 1 COMMISSIONER MARRETT: Finally, with reference to
2 your intent for future activities, to what extent do you see
3 the Department of Health getting involved in questions about
4 licensing of nuclear plants throughout the commonwealth. So
5 it's not simply TMI, but in general, what is to be the
6 department's role, not merely in responding to incidents, but
7 in helping determine what's going to be the course of events
8 in the commonwealth?

9 MR. MAC LEOD: Well, again, anecdotally, I did
10 suggest to Chairman Hendrie on, I believe it was Sunday,
11 April 1st, when he was in Harrisburg, that it might be
12 advisable to consider the licensing of managers of nuclear
13 reactor plants, not the operators, but the managers in much
14 the same fashion as we have done in the health field and
15 perhaps even with a recurrent examination. And it was just
16 mentioned as an incidental or anecdotal thing. It might be
17 looked upon as a model for licensure of these people, assuming
18 that the times have changed and this is an appropriate action
19 to be taken.

20 With respect to the ongoing activities of the depart-
21 ment in relationship to the Department of Environmental
22 Resources, we would see increased coordination and liaison
23 activities between the departments. And our input would now
24 be felt by virtue of having representatives to the Department
25 of Health on the appropriate committees of the Department of
Environmental Resources, where such licensure activity would
take place.

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1 CHAIRMAN KEMENY: Dr. MacLeod, as a final question
2 have you succeeded in getting a library, yet, for the Depart-
3 ment of Health?

4 MR. MAC LEOD: Mr. Chairman, we have designated the
5 entranceway to the executive offices on the lefthand side as
6 the area for the library. I will be able to answer that quest-
7 ion after about two or three more months if we can get the
8 resources.

9 CHAIRMAN KEMENY: So, you have the library. You
10 just don't have any books in it yet.

11 MR. MAC LEOD: We have designated the area. That
12 is right, sir.

13 CHAIRMAN KEMENY: Thank you very much, Dr. MacLeod.

14 MR. MC LEOD: Thank you.

15 CHAIRMAN KEMENY: Would counsel please call the
16 next witness and swear him in.

17 Whereupon,

18 WILLIAM W. SCRANTON, III
19 was called as a witness and, after being first duly sworn,
20 was examined and testified as follows:

21 CHAIRMAN KEMENY: Can I please ask you, sir, to
22 state your name and your current position.

23 MR. SCRANTON: My name is Bill Scranton. I am the
24 Lt. Governor of the Commonwealth of Pennsylvania.

25 CHAIRMAN KEMENY: Thank you. Counsel.

32 1 MR. HARVEY: Sir would you describe for the Commis-
2 sion, please, just what role the lieutenant governor plays in
3 the Commonwealth of Pennsylvania state government?

4 MR. SCRANTON: It depends on which administration the
5 lieutenant governor is in. In this administration -- because
6 the statutory and constitutional definition of the role is
7 rather limited. The lieutenant governor presides over the
8 senate of Pennsylvania and is chairman of the Board of Pardons.
9 I have been designated as the chairman of the Pennsylvania
10 Emergency Management Council, chairman of the Small Business
11 Council, the chairman of the Governor's Energy Council, as
12 well as, I think -- and this is more on an informal basis --
13 I believe that the relationship that a governor and a lieuten-
14 ant governor have personally really goes a long way to say
15 what role you have in the administration. And I am very
16 pleased to say that Governor Thornburgh's and mine is very
17 good so that I am able to advise him on a more informal basis.

18 MR. HARVEY: You mentioned that the lieutenant gover-
19 nor has a role as chairman of the Pennsylvania Emergency Man-
20 agement Council. Could you describe what the Council does
21 and its relationship to PEMA, the Emergency Management Agency?

22 MR. SCRANTON: The Council's job is basically an
23 oversight job, to give directions to the Pennsylvania Emergen-
24 cy Management Agency. The Agency, itself, is a coordinating
25 agency, not necessarily an executive agency and the members

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1 of the Council are primarily members of the administration;
2 that is, secretaries of the various Commonwealth departments
3 who would have a role in an emergency situation, plus repre-
4 sentation from the legislature.

5 MR. HARVEY: So, that in a sense you function as a
6 board of directors for the Agency management. Is that a fair
7 analogy?

8 MR. SCRANTON: That is a fair analogy.

9 MR. HARVEY: Governor, you were one of the first
10 official spokesman for state government on the Three Mile
11 Island incident. Could you describe for the Commission how
12 you happened to find yourself in that position?

13 MR. SCRANTON: I was planning on that morning, the
14 28th of March, to have a press conference on energy conserva-
15 tion and energy matters. The press conference was scheduled
16 for 10 o'clock. I scheduled in my office a pre-press confer-
17 ence session with various members of my staff and members of
18 the Governor's Energy Council staff to go over the thrust of
19 our announcement. I got into the office a little bit after
20 8 o'clock and soon found out that there had been an incident
21 at Three Mile Island and it became very obvious at that point
22 or soon thereafter that a press conference on conservation
23 was going to have to wait.

24 I think that the reason that I was the spokesman
25 was not just that there was a coincidental happening that I

14 1 was going to give a press conference anyway, but because as
2 chairman of the Emergency Management Council and the Governor's
3 Energy Council, I had a jurisdictional interest in it and I
4 happened to be there. The Governor and I spoke on the phone
5 and he said, find out what information you can about it and
6 report back to me, as I did and it just kind of flowed auto-
7 matically from there.

8 MR. HARVEY: Would you describe how you were acquir-
9 ing information as you prepared for the press conference?

10 MR. SCRANTON: From various sources. The first
11 source we really tried to get information from was from the
12 Department of Environmental Resources. That department has
13 probably the greatest technical expertise on nuclear power
14 plants and certainly Three Mile Island and nobody in my office
15 and certainly not the Governor were experts on the technical
16 aspects of nuclear power. Furthermore, I called and got in
17 contact with Bob Loughlin, who was at that time the Governor's
18 science advisor. There were members of the Governor's Energy
19 Council who were there, staff members, who we charged with
20 finding out what information they could, specifically about
21 Three Mile Island and also about how a nuclear power plant
22 works or doesn't work. I think it is fair to say that between
23 the time I first heard about it and the time we were prepared
24 to make an announcement, at least a preliminary announcement,
25 most of the time was spent finding out exactly what had happened

1 at Three Mile Island, but more than that acquainting ourselves
2 with the intricacies of the power plant.

3 MR. HARVEY: What was the substance of the informa-
4 tion that you acquired as you walked into the press conference?

5 MR. SCRANTON: The substance of the information was
6 that there had been an accidental release from Three Mile
7 Island due to a turbine trip -- "trip" being a new word for
8 many of us -- that had caused a backup in the system and a
9 valve had opened and water had overflowed and that there was
10 a release of radioactivity in that and that there was a release
11 of radioactivity from the auxiliary building. Our information
12 was that there were not lethal or dangerous doses to the en-
13 vironment, but there had been releases in the environment,
14 that there was no need at that point for an evacuation, but
15 that the situation was still, obviously, under investigation
16 and there had been no final determination as to what exactly
17 had happened.

18 MR. HARVEY: And is that the substance of the announce-
19 ment you made at the press conference?

20 MR. SCRANTON: Yes. I think the thrust of the
21 announcement was to say that this incident had occurred and
22 I gave just a very general outline, because that is all we
23 really knew and got to the main point, which was that there
24 was no danger at that point that we could foresee to the health
25 and welfare and safety of the people. Also, at that conference,

16 1 there were Bill Dornsife from the DER, Colonel Henderson and
2 others who were experts in various aspects of it and we
3 opened up the press conference to questioning of them so far
4 as procedures were concerned and what they knew about it.

5 MR. HARVEY: So, that the substance -- at least
6 part of the announcement that you made was that there were
7 no significant offsite releases or that there had been releases
8 offsite, I guess --

9 MR. SCRANTON: Yes, but that there no significant
10 measurements to indicate dangerous level or the need for
11 evacuation.

12 MR. HARVEY: What happened later in that day with
13 respect to your announcement and your activities?

14 MR. SCRANTON: After that press conference, a group
15 of us, including Colonel Henderson and myself, Bill Dornsife,
16 Paul Crishlo, the Governor's press secretary, went to the
17 Governor's office, discussed the situation with him and then
18 the word came that there were some people -- I believe it was
19 from Philadelphia, I am not sure -- the Philadelphia media --
20 that wanted to interview me outside the capitol and they had
21 indicated that they had heard that the word had come from
22 some spokesman from Metropolitan Edison that there had not,
23 indeed, been a release of radioactivity into the atmosphere.
24 And this was the first contradictory bit of information that
25 we received and it caused some disturbance because it obviously

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1 caused confusion and there was a discrepancy among the posi-
2 tions being taken.

3 After that, we also learned that there had been a
4 continuing release of radioactivity from Three Mile Island,
5 beginning, I believe, at about 11 o'clock, which we had not
6 been informed of by Metropolitan Edison, that DER had not been
7 informed of. This was very disturbing to us because obviously
8 in a critical situation such as that, if that bit of coopera-
9 tion isn't there, it means the situation can be very dangerous.

10 MR. HARVEY: Did you have a meeting with Metropolitan
11 Edison officials that day?

12 MR. SCRANTON: Yes. There was a meeting early that
13 afternoon with Mr. Hurbine and the plant manager, I believe,
14 in my office, together with people from the DER, the Governor's
15 office, one of our senators who sits on the PEMA Council. And
16 the thrust of that meeting really was, we were very upset by
17 the fact that we seemed to be getting wrong information, that
18 we had not been informed about the release that occurred at
19 Three Mile Island between 11 and 2 and to impress upon them
20 the necessity for that kind of communication and not releasing
21 radioactivity in the environment because the situation was
22 very dangerous. That was the general thrust of the meeting.

23 MR. HARVEY: Did you find that Metropolitan Edison
24 officials were being helpful as you searched for information?

25 MR. SCRANTON: Well, I wouldn't say that they were

1 exactly helpful, but they weren't obstructive. I think they
2 were defensive. I think that is the best way to put it. They
3 indicated to us what they were doing and what they thought had
4 occurred. I believe we went over the scenario of the accident
5 beginning at 4 o'clock very perfunctorily, but I think that
6 they were -- when we said to them, we have conflicting informa-
7 tion from you. They said, this is company policy, etcetera,
8 etcetera. I think there was a bit of defensiveness.

9 MR. HARVEY: Did you make another press conference
10 or hold another press conference that afternoon?

11 MR. SCRANTON: Yes. Right after that we prepared
12 a statement because we thought it was incumbent to make public
13 as quickly as possible the information that there had been
14 further releases and we had not been told about it.

15 MR. HARVEY: Now, what were your activities on
16 Thursday?

17 MR. SCRANTON: Thursday morning, when I came to
18 work -- most of the morning was spent -- and I don't have a
19 telephone log, but it was really spent talking to people in
20 Washington and the Congressional delegation and various members
21 of the Nuclear Regulatory Commission's staff, really to deter-
22 mine more about what was happening technically inside the con-
23 tainment. Up to that point, I think it is fair to say, most
24 of the focus was on what was happening in the auxiliary building,
25 because that is where the leakage was coming from on a constant

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1 basis. But there were cold shutdown problems. The engineering
2 or bringing it to a cold shutdown was becoming very clear as
3 a problem. The problem with the K heat, I remember talking to
4 various people about that to try to get it straight. So, the
5 morning was spent mostly in talking back and forth to various
6 people to see what everybody understood and to get a knowledge
7 of the situation. At that time, it was decided that I ought
8 to go down to Three Mile Island and take a personal look at
9 what was going on, because, I think, if you are going to make
10 a judgement -- although I am no nuclear physicist or a techni-
11 cian of that sort -- it is important to get the lay of the
12 land. And I talked to Walter Crites, who is the head of Met-
13 ropolitan Edison and told him I was interested in coming down
14 and his reaction was well, why don't you come with the various
15 senators who were coming up from Washington, Senator Hart and
16 others, and come to the observation center across the road.
17 And I said I wasn't really interested in doing that to be in
18 the observation center or to be visible, what I really wanted
19 to do was to go down onsite. I think he was a little bit
20 worried, but he acquiesced and I spent that afternoon down on
21 site, taking a tour of No. 1 facility, the operating room of
22 No. 1, the control room of No. 1, the control room of No. 2
23 and the auxiliary building itself.

24 MR. HARVEY: Were you satisfied as of Thursday and
25 was the Governor's office satisfied with the amount and

1 credibility of the information that you were getting as you
2 tried to deal with the problem?

3 MR. SCRANTON: I don't think we were ever 100 percent
4 satisfied with any information we were getting. I think there
5 was always gnawing in the back of our minds that anything could
6 happen, that nobody was the expert on it. But I do believe
7 we felt and I think I know we felt very strongly that the bot-
8 tom line was, was there a situation where there a danger to
9 the health and welfare of the people in immediate level. I
10 think we were satisfied that we were getting good information.

11 MR. HARVEY: Now, on Saturday or on Friday there
12 was an evacuation advisory, at least, issued to pregnant women
13 and preschool children and a conversation between the Governor
14 and the President. Could you describe any agreements reached
15 by the President and the Governor on Friday?

16 MR. SCRANTON: Yes. The situation was such that
17 there was so much conflicting information and the technical
18 aspects of this thing were so critical -- let me go back.
19 Thursday night an announcement had been by the NRC officials
20 on the scene who had come from King of Prussia at a press
21 conference that we held that the danger was over. And I think
22 that made the Governor and I a little bit nervous because, al-
23 though we thought the danger wasn't imminent, we didn't think
24 it was over. And there was a lot of conflicting information
25 coming back and forth in the press and the public purview.

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1 The Governor asked the President to send in somebody whom he
2 trusted, who could be an authority on what was happening at
3 the plant and whom we could our state people under, whom we
4 could coordinate all kinds of technical aspects of what was
5 happening on the Island, so there would be coordination of
6 the federal and the state effort and inside the federal effort.

7 Secondly, we wanted help on -- we wanted advisors
8 insofar as evacuation and civil defense was concerned. The
9 understanding was that the President would send those people,
10 that there would be communication. A hot line was set up with
11 the White House. A staff person in the White House would be
12 assigned to this problem, that we would be able to get to
13 the White House whenever possible and that there would be now
14 more concrete channels of communication than there had been
15 before.

16 MR. HARVEY: Were there any agreements reached with
17 respect to communicating information through the media to the
18 public?

19 MR. SCRANTON: The agreement was that there would
20 be one spokesman for the technical details and that would be
21 Harold Denton. I can't tell you that the hard and fast agree-
22 ment was reached exactly at that phone conversation, but that
23 clearly was the intent and that the spokesman for the state's
24 responsibility, the state's end of the operation, would be
25 the Governor.

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012 1 MR. HARVEY: Now, you have heard, no doubt, that
2 the counties felt that they were not getting information on
3 time and that they were placed in the position of having to
4 listen to Mr. Denton's press conferences when they knew about
5 them in order to get information. Do you feel that this
6 agreement contributed to that problem?

7 MR. SCRANTON: Yes, I do. We were determined that
8 there would be one spokesman and we were also determined,
9 throughout the whole thing from the very beginning, that our
10 modus operandi would be (1) find out as best you can what the
11 facts are and then (2) make them public as quickly as you can.
12 So, that even on Thursday morning when we were struggling to
13 find out what had gone on, we made a statement and made those
14 experts who we had gathered around at that time available for
15 questioning. We did that again Wednesday afternoon and again
16 Wednesday evening. When Harold Denton came, he would report
17 to the Governor about the situation. They would discuss -- we
18 would all discuss the stability, the instability, of the plan.
19 Whether there was a need for evacuation; whether there was not
20 a need for evacuation, which was the critical question for us
21 and then Harold Denton would be the spokesman for the technical
22 aspects of what the situation was at Three Mile Island. I
23 think that the Governor and the administration were extremely
24 cautious about letting any information come out of other
25 channels other than Harold Denton, because we wanted to stop

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that confusion from occurring and also we wanted to get it out
 publicly as quickly as we possibly could.

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E 18 1 MR. HARVEY: So that there was no advance
NWOOD 2 warning, if you will, given to the counties that Harold
3 Denton or concerning the substance of what Harold Denton
4 would say until he said it at a press conference?

5 MR. SCRANTON: I think that is true. I think
6 there was no advance warning to us, really, as to what the
7 substance of what Harold Denton would say when he said it
8 because he would come in; the meeting would be conducted
9 and immediately go out to a press conference. There was no
10 lag time in between.

11 MR. HARVEY: Is there any aspect of that
12 arrangement that you would change, given the benefit of
13 hindsight?

14 MR. SCRANTON: First of all, for all of us involved,
15 there were periods of tremendous confusion, whether you were
16 on the state level, whether you were on the local level,
17 federal level or whether you were in the general population,
18 and I think anything you are going to do to alleviate that
19 is important.

20 I think what we did was right, in that we felt a
21 responsibility to the general population and to the truth
22 which I feel very good about.

23 I think though that anything we could possibly have
24 done without setting up other channels of communication and
25 information of the technical aspects of Three Mile Island to

1 help the counties who were getting a lot of phone calls
2 and a tremendous amount of pressure would have been a
3 reasonable thing to do.

4 I don't quite know how you do that in a situation
5 such as this, because the psychology of Three Mile Island
6 was critical which is why information was so critical.

7 It is not like a flood or a hurricane. In our
8 estimation you were dealing with a great number of intangibles
9 and therefore, a rumor became far more powerful than it
10 would be in other situations, but I think that if we were
11 confronted with a situation like this, I think it is fair to
12 say we would be far more sensitive to the pressures that
13 county people were getting and try to accommodate them in some
14 way.

15 MR. HARVEY: Finally, I understand that you tended
16 to specialize a little more as the incident developed into
17 developing evacuation plans in conjunction with PEMA and
18 acting as a liaison with federal authorities. Is that a
19 fair characterization?

20 MR. SCRANTON: Yes, I think that is a fair
21 characterization.

22 MR. HARVEY: Could you tell us why the Governor
23 did not request the President to declare an emergency?

24 MR. SCRANTON: Again, I think it was for two reasons.
25 One, it was -- both because it was an extraordinary situation.

1 It was extraordinary, in there was no tangible damage, at
2 least not that was easily assessable, and generally the laws
3 for declaration of emergency are based upon tangible damage,
4 whether it be health damage or economic damage or home damage
5 or property damage, and there was a real question about
6 whether we qualified for what we needed or not.

7 Secondly, again, the situation was, do you want
8 to declare an emergency? If you declare an emergency, do you
9 then encourage unnecessary evacuation, and in the conversations
10 back and forth with the White House, we were given assurance
11 that a declaration of emergency would not be necessary, that
12 there would be the federal assistance of the kind we needed
13 to respond to this crisis.

14 MR. HARVEY: So, in effect, the White House
15 promised to give the Commonwealth of Pennsylvania the
16 equivalent of the assistance that it would receive if there
17 had been a declaration of emergency without a formal
18 declaration?

19 MR. SCRANTON: Yes, I think that is fair to say.

20 MR. HARVEY: Were you satisfied with the assistance
21 you received during the incident?

22 MR. SCRANTON: Yes.

23 MR. HARVEY: And after the incident?

24 MR. SCRANTON: I would have to qualify that a little
25 bit because we have been going through the machinations of

1 receiving federal assistance for various studies, socio-
2 economic studies, et cetera, for our own investigation into
3 the effects of Three Mile Island, and it has been bogged down
4 in a great deal of paperwork and rewriting to the effect that
5 even now we are not sure we are going to get that money,
6 although we have been told to proceed on the basis that we
7 would.

8 I think it is fair to say that it makes us a little
9 bit nervous.

10 MR. HARVEY: I have no further questions,
11 Mr. Chairman-

12 CHAIRMAN KEMENY: Commissioner McBride?

13 COMMISSIONER MC BRIDE: In the light of your
14 determination and plans to convey the truth as rapidly and
15 as accurately as possible, how do you feel that that was
16 handled by the media? Were you satisfied with the way that
17 was conveyed to the public or did you have some other
18 feeling about it?

19 MR. SCRANTON: I think I was satisfied with the
20 way the media handled our press conferences and our
21 announcements.

22 I think it is fair to say that we were not always
23 satisfied with other sources that we were hearing from,
24 sources in Washington, particularly on the first couple of
25 days that were making pronouncements about Three Mile Island

1 that were not based upon firsthand knowledge.

2 I don't know if you lay the blame of that to the
3 media. I think there were a lot of people who had a lot of
4 things to say about what could possibly happen at Three Mile
5 Island. When you are in the middle of it and trying to
6 manage the situation in which information is critical, for
7 me to say that that did not bother us at all, I think would
8 be disingenuous.

9 COMMISSIONER MC BRIDE: As I understand you were
10 getting in the media versions of what people were reputed to
11 have said in Washington and that you were not happy with
12 those stories?

13 MR. SCRANTON: Yes, I think because, for instance,
14 if somebody from the NRC would make a speculation or
15 conjecture, whether they be a Commissioner or a staff member,
16 very often it would come out, "The NRC said today Three Mile
17 Island could potentially have a meltdown at any time."

18 That is not a specific instance, but that is the
19 general sense of it. If you are speculating about it,
20 obviously that is true. I think if you are talking within
21 the bounds of possibility and probability it is not helpful.

22 COMMISSIONER MC BRIDE: Thank you.

23 CHAIRMAN KEMENY: Commissioner Taylor?

24 COMMISSIONER TAYLOR: At what point did you become
25 aware that at least there was a high probability that the

1 reactor core had become uncovered; temperatures had gotten
2 very high, and there had been at least significant, if not
3 extensive fuel damage?

4 MR. SCRANTON: I think that process of coming to
5 understand that and learn that developed from Thursday
6 evening and culminated really Friday evening.

7 The first time I think that there was an understanding
8 that there was something, that there could have been at least
9 the possibility of core damage came at a meeting that we had
10 with myself, Paul Chrislow, the Governor's press secretary,
11 Jay Waldman, the Governor's executive assistant and others
12 had in my office, that evening, Wednesday evening with
13 Jim Higgins and Chick Galena from the NRC staff in King of
14 Prussia, in Pennsylvania.

15 There they mentioned the possibility. It was not
16 obviously, a definite, but it was a possibility. Then I
17 think the next morning as more information became clear
18 that the problem with decay heat, recurring problem, the
19 problems of cold shutdown, it became clear to us that the
20 focus then was shifting to what was happening inside the
21 core.

22 I don't think we ever really felt that we had a
23 substantial confirmation of that until Friday evening when we
24 got our first briefing from Harold Denton who was very
25 authoritative on that possibility.

1 COMMISSIONER TAYLOR: We heard testimony this
2 morning from Thomas Gerusky, the Director of the Bureau of
3 Radiation Protection that, as I remember, about 8:30 Wednesday
4 morning information that he got strongly suggested that
5 there had been rupture of the cladding of the fuel. Now,
6 we did not go into what that might have implied about whether
7 that was based on some conviction that the core had become
8 uncovered, and the temperatures had gotten high. We did not
9 go into that, but I frankly, was surprised to hear that this
10 morning because that is the earliest recognition that I have
11 heard expressed by anyone in the state government or in the
12 Federal Government or by any of the members of the utility
13 staff.

14 Let me ask this. Was that perception of things
15 communicated to the Governor's Office, as far as you know?

16 MR. SCRANTON: I would doubt very much that if
17 the DER had a strong suspicion of something that it would not
18 have have been communicated. I think it is fair to say
19 though that everything that occurred had to be taken in
20 the context of other things of what was going on, and the
21 first day from our level, from my level and from the
22 Governor's level, the most important thing, really was what
23 was coming out and did we have enough time if whatever could
24 occur could occur.

25 That was really where our focus was and that the

1 luxury of being able to sit down and really piece together
2 what had happened on a more technical and a deeper basis,
3 really did not come until later.

4 I don't know if that information was passed on or
5 not. I may have been told that. The Governor may very well
6 have been told that. That certainly was not my focus during
7 those first few hours.

8 COMMISSIONER TAYLOR: The reason I am exploring
9 this is it has pretty consistently come through that state
10 officials, as well as federal officials had two kinds of
11 concerns. One was what is being released; what is going off
12 site, and second, what might happen in the view of whatever
13 caused that release which is not well understood at that
14 stage, and it seems to me that at least some people should
15 have been giving attention to what it was that had gone on
16 in that core as a basis for some informed opinion about what
17 the hazards, the potential for a much bigger release might
18 be.

19 Now, could you tell us when it was that whether
20 when you did get information that strongly suggested some
21 severe core damage, which I gather you said was Friday?

22 MR. SCRANTON: No, we began -- it was Wednesday
23 evening we began to hear.

24 COMMISSIONER TAYLOR: I am sorry. Now, did that
25 information intensify your anxiety, your concern about the

1 possibility of what might happen, not what was going on at
2 that time but what might happen?

3 MR. SCRANTON: Yes, but I think you tend -- yes, it
4 did, but I think you tend, from the very beginning to assume
5 the worst.

6 I don't mean to say that there were not people in
7 the beginning who were trying to fathom what was going on
8 inside the reactor, but we were very quick in the beginning
9 to find out who exactly was going to be on site insofar as
10 experts are concerned, our own people. We were told that
11 NRC was sending a crew from King of Prussia who were
12 investigators, an inspector and highly technical.

13 What was important to us was to get their
14 recommendation based on what they knew and not to pick their
15 brains about everything that they knew, so that there was -- if
16 we would go to them and say, "How much time do we have based
17 on what you know?" they would say, "You have plenty of time
18 based on what we know." I think that is fair to say that
19 is what we were interested in in the first few hours, but it
20 is, also, fair to say that once you begin to fathom the depth
21 of it and you understand the extensiveness of what was
22 going on, the concern grows.

23 COMMISSIONER TAYLOR: The thing is the word
24 "meltdown" apparently was from some points of view bandied
25 about and other points of view used it, I think, with real

1 concern, and it apparently was on people's minds. It
2 certainly was in the press, I mean in the media, and whether
3 or not meltdown was a possibility was something that had
4 to do with what went on in the internals of the reactor.

5 Is it fair to say this, that by Friday afternoon
6 knowing what you knew about the state of the reactor core
7 itself, that is the new mode of cooling and so on that
8 whatever had happened previously was such that the hazard of
9 the core melting, melting down, China syndrome and all that,
10 as far as you could tell was not severe, I mean, not very
11 likely?

12 MR. SCRANTON: The first time, I think, that we
13 really sat down and discussed meltdown, insofar as to really
14 get into the technical aspects of it was Wednesday night,
15 not Friday but Wednesday night at that meeting in my office
16 with Chick Galena and Jim Higgins and others, and we point
17 blank said, "Is there a possibility of a meltdown," and they
18 being technicians said, "Yes, of course, there is that
19 possibility, but it is highly unlikely."

20 We then said, "What kind of lead time are we talking
21 about in your estimation, if there is a meltdown?" and I don't
22 remember exactly what it was but 30 hours was the highest, and
23 I think it was between 15 or 30 hours lead time based on what
24 they knew about the state of the reactor.

25 So, you are always concerned about meltdown, but I --

1 and we were always asking, "What is the ultimate that could
2 happen, and how much time do we have," and we did that, I
3 think from the very beginning, and so I think it is fair to
4 say that concern was there.

5 COMMISSIONER TAYLOR: In those discussions
6 Wednesday evening, did the question ever come up about whether
7 there had already been a substantial melting of the core?
8 Was that possibility discussed at all?

9 MR. SCRANTON: I think the possibility was raised.
10 There may have been some cladding damage I think that was
11 discussed, but I would have to go back and take a look at my
12 notes. There was certainly a concern raised that there was,
13 that there could be core problems. I don't think the extent
14 of it was known, and I think it was pure speculation at that
15 point as to really the details of it.

16 COMMISSIONER TAYLOR: As a final combination of
17 remark and question, it seems to me that it would not have
18 been clear from what we have heard or what people knew at
19 that time, for sure, that there had not been a core meltdown
20 already, and I am just curious about whether that came up,
21 not in terms of extensive fuel damage but of large scale
22 melting of the core. I mean how did one know that that had
23 not already happened?

24 MR. SCRANTON: I don't know because I am not a
25 technician, but I think that we, in our conversations that

1 Wednesday evening got a fairly good rundown on what they
2 thought was happening in the core, and I believe they
3 mentioned the possibility of cladding damage, exposure of the
4 core, and maybe even the possibility of some melting.

5 I don't think that anybody seriously thought that
6 there had been a meltdown, I mean a very serious melting,
7 that we were ever in danger of that ultimate meltdown China
8 syndrome type of thing.

9 COMMISSIONER TAYLOR: Thank you.

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L 1 CHAIRMAN KEMENY: Governor Babbitt?

79 2 COMMISSIONER BABBITT: By the way, I don't have a
19 3 lieutenant governor. I am curious how do I properly address
4 you in the Commonwealth of Pennsylvania?

5 MR. BABBITT: Well, if you come to Pennsylvania we
6 are very friendly. They would probably address me as Bill but
7 other people call me governor, which I think is something --
8 the potential of which I haven't gotten over.

9 (Laughter.)

10 A premonition of the future perhaps.

11 COMMISSIONER BABBITT: Governor Scranton, I heard
12 Governor Thornburg suggest that the safety of reactor operation
13 might be enhanced by giving the State of Pennsylvania concur-
14 rent jurisdiction to regulate the operation of that reactor.
15 My question is, do you have an opinion about that? Have you
16 thought about it? Have you thought about the implications in
17 terms of the State's capability to do that? The problems of
18 duplication and whether, in fact, you think it would be kind of
19 a back-up insurance of safety?

20 MR. SCRANTON: I have to be honest with you, that is
21 a very tough question. We are not insensitive to the possi-
22 bilities that are coming out of the investigations of Three
23 Mile Island, maybe the suggestion that bureaucracy on top of
24 bureaucracy, on top of the regulatory agency be built up, in
25 which case you are probably adding more to the complexity than

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1 to the simplicity and probably less to the effectiveness. But
2 there was definitely a frustration, I believe, from the stand-
3 point of the State, which was for all intents and purposes as
4 far as the authority and decision-making level was concerned,
5 really the only people involved in the first couple of days,
6 that we had no power; that we couldn't -- that this thing was
7 going on and that we had no jurisdiction over it. And I think
8 that it would be helpful if there would be -- and I have no sug-
9 gestion and I apologize for that -- but I think it would be
10 helpful if the state had more of a role in determining whether
11 a nuclear power plant ought to be able to continue to operate.

12 I don't mean a veto power over the Federal Government.
13 I don't mean a whole new nuclear regulatory commission in each
14 state. But I think if a state is forced to manage an emergency,
15 there ought also to be a voice, at least a representation, in
16 the decision-making about whether it stays open, or stays closed
17 and what is going on. I have no practical wisdom on how that
18 should be accomplished. But I do think that it ought to be
19 considered.

20 COMMISSIONER BABBITT: Perhaps what you seem to sug-
21 gest is some notion of a statutory, consultative mechanism?

22 MR. SCRANTON: Yes, but I also think it should be --
23 I think it should be easier for the state to engage the at-
24 tention of those in authority. We really didn't have people
25 from the Federal Government who were in a decision-making

sg 3 1 position there until Friday, although there had been represen-
2 tatives from the NRC there from beginning Wednesday morning but
3 they were not in a decision-making capacity.

4 If somebody is going to decide how you go about being
5 a cold shutdown and what steps you have to take in a situation
6 like this, you ought to be able to get them there or have them
7 there. If the Federal Government can't be there, there ought
8 to be some power by the state to get them there or to be able
9 to say, do this, do that, or do the other.

10 COMMISSIONER BABBITT: Thank you.

11 CHAIRMAN KEMENY: Professor Pigford.

12 COMMISSIONER PIGFORD: Governor Scranton, I think
13 your perception of some of these issues and terms is extremely
14 important to us. A moment ago when you spoke of this per-
15 ception of melting China syndrome and meltdown, what does that
16 mean to you?

17 MR. SCRANTON: I think it has changed as a result of
18 Three Mile Island. In the beginning, coming as a novice, I
19 think it is pretty much the popular view. There is a system
20 inside containment if it comes out of control, very strong
21 melting, it cannot be contained, there is some kind of an ex-
22 plosion -- I don't mean a nuclear bomb explosion, but an ex-
23 plosion that brings a tremendous amount of radioactivity out
24 into the atmosphere. And I think that all during the crisis
25 nobody -- that all falls to the back of your mind and when we

sq 4

1 talk meltdown, that is what we are all talking about. There
 2 was a great deal of argument, as you know, as to what would
 3 happen. Some people say it would meltdown through ground water,
 4 cool, and that would be it. Others say it would come back up
 5 and be held in containment. And I am no expert on that, I can't
 6 tell you. But from my personal standpoint, I think it was the
 7 same as everybody else's.

8 COMMISSIONER BABBITT: Well, it doesn't go through to
 9 China anyway.

10 MR. SCRANTON: No, definitely not.

11 COMMISSIONER BABBITT: The geography is wrong. I
 12 think it goes through Australia.

13 MR. SCRANTON: One of the few American things that
 14 isn't going to China these days.

15 COMMISSIONER BABBITT: Okay. Now, you are giving us
 16 now your concept as it was during the accident.

17 MR. SCRANTON: At least in the beginning of the ac-
 18 cident, yes.

19 COMMISSIONER BABBITT: Okay. Now, apparently then,
 20 when you respond to the words meltdown, it is this idea of
 21 enormous, that you have broken the barriers that protect the
 22 public, the fuel cladding of the primary system, the contain-
 23 ment and you have quite a large scale release of radioactivity --
 24 that is, I think in essence what you are saying, is that right?

25 MR. SCRANTON: Yes, going into it.

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1 COMMISSIONER BABBITT: Yes. And when we use the
2 words China syndrome, although the word China is used loosely.
3 and it won't get that far wherever it is, maybe, it means the
4 same thing?

5 MR. SCRANTON: Yes.

6 COMMISSIONER BABBITT: The same thing to you?

7 MR. SCRANTON: Yes, a meltdown.

8 COMMISSIONER BABBITT: A melting?

9 MR. SCRANTON: No.

10 COMMISSIONER BABBITT: Well, that was my question,
11 that the phrase melting, China syndrom, and meltdown. At this
12 time, did melting mean something different to you?

13 MR. SCRANTON: Yes. First of all, let me say China
14 syndrome is something I had never heard used until the movie
15 came out. I had -- meltdown is a term I had been familiar with.
16 I don't think there was ever a time when there was a catastrophic
17 feeling that anything would occur inside containment that would
18 cause meltdown. Meltdown was everything out of control. And I
19 think, certainly I felt, that there could be degrees of that.

20 COMMISSIONER BABBITT: But I am asking you now about
21 melting. What was your concept at that time, and now, if you
22 like, about what that means?

23 MR. SCRANTON: I think that as a concept it means
24 that the temperature inside containment gets high enough for
25 there to be some kind of damage to the core mechanism.

sg 6

1 COMMISSIONER BABBITT: Yes. Do you think it is possible
2 some of the fuel in the core might have melted?

3 MR. SCRANTON: I am told that.

4 COMMISSIONER BABBITT: Is it easy for you -- do you
5 have some difficulty distinguishing between melting then and
6 meltdown?

7 MR. SCRANTON: No because I think meltdown is melting
8 taken to the nth degree, as far as it can go.

9 COMMISSIONER BABBITT: And that is the one where it
10 breaks through all three barriers?

11 MR. SCRANTON: Yes, well, yes. Although since the
12 accident -- actually not since the beginning of the accident,
13 since talking to experts about that, I would be far more
14 qualified in my discussion of it.

15 COMMISSIONER BABBITT: Now, you have been asked the
16 question two times to comment on melting, China syndrom and
17 meltdown and always your answer has been just on meltdown.

18 MR. SCRANTON: Yes.

19 COMMISSIONER BABBITT: You must have some problem
20 distinguishing between the more generic idea of melting, is
21 that right?

22 MR. SCRANTON: No because I think -- at least as I
23 understood the question being asked me, and I may have inferred
24 it incorrectly -- was, was there really in the back of your
25 mind the consideration of the worst possible case? I think

1 from the time that we had an opportunity to sit down and really
2 review what people, experts, qualified people, thought was
3 going on inside the reactor that they -- and we said, okay,
4 let us take the worst case, which was meltdown. The chances
5 of that are highly remote but I think they said that it was
6 more possible that there was some cladding damage and some
7 damage to the core, which would imply some melting.

8 COMMISSIONER BABBITT: Okay. I think we have estab-
9 lished that in your mind there is a difference.

10 MR. SCRANTON: Oh, absolutely.

11 COMMISSIONER BABBITT: Between the words. Now, you
12 weren't present, I suppose, at the first hearing of this Com-
13 mission in April, were you?

14 MR. SCRANTON: No, I was not.

15 COMMISSIONER BABBITT: There was some person represen-
16 ting your office? The Governor's office?

17 MR. SCRANTON: There may have been. Where was that
18 section held?

19 COMMISSIONER BABBITT: It was in this city.

20 MR. SCRANTON: There may have been somebody from
21 the Governor's office, I don't know.

22 COMMISSIONER BABBITT: It was my recollection that
23 the person representing the Governor's office told us at that
24 time, I thought he said the Governor, I am not sure which per-
25 son -- whether he was speaking of you or the Governor, had

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1 recognized the possibility of extensive core damage, certainly
2 during the first day of the accident, and perhaps was one of
3 the first persons to recognize that. Do you recall that?

4 MR. SCRANTON: I think what he was talking about was
5 the fact that I think the Governor, Governor Thornburg, instinc-
6 tively focused Wednesday evening on the possibility of some
7 damage happening within the core. In so far as he, at our
8 briefing and then later, immediately -- this was late, this
9 was Wednesday evening, immediately went to that question and
10 asked what the possibility of it was. As I said earlier, the
11 focus for those of us who were trying to figure out whether --
12 how to respond from a civil defense standpoint, was what was
13 in the atmosphere, what was likely to come into the atmosphere,
14 and what the danger was to the people. The Governor, I think,
15 instinctively went to the possibility of something occurring
16 in the core.

17 COMMISSIONER BABBITT: Not before Wednesday evening?

18 MR. SCRANTON: I don't know. I think there was a
19 possibility in everybody's mind, as I said, but my concern at
20 that point was with civil defense matters but I know for a
21 fact, Wednesday evening, if not before that.

22 COMMISSIONER BABBITT: Yes. Now, just one more on
23 this issue on melting. At the time of the accident, did you
24 have a clear understanding of the difference between melting
25 and meltdown?

9

1 MR. SCRANTON: Yes.

2 COMMISSIONER BABBITT: Excuse me, please go ahead.

3 MR. SCRANTON: In a sense that I was able to draw a
4 distinction. I was not a nuclear technician.

5 COMMISSIONER BABBITT: Of course and that is exactly
6 why you were able to draw the distinction. Now, do you recall
7 in any of the discussions -- you have earlier mentioned that some
8 discussion was held, maybe press conferences with NRC about
9 meltdown. Was there any discussion also on the separate issue
10 of melting?

11 MR. SCRANTON: Not to my knowledge but I would have
12 to review the notes.

13 COMMISSIONER BABBITT: Yes. And since I have confused
14 the record I do want to point out that my question was awkward,
15 meltdown, of course, is the extreme limit of melting, isn't it?
16 So they are really not all separate.

17 MR. SCRANTON: Well, one follows from the other but
18 I think there are distinctions that you have to make.

19 CHAIRMAN KEMENY: I think Professor Taylor had a fol-
20 low on question?

21 COMMISSIONER TAYLOR: Yes, just a brief question on
22 this same matter of the possibility of melting or meltdown. If
23 you had known at three o'clock Wednesday afternoon that the
24 upper part of the core involving more than a tenth of the core,
25 more than ten tons of the fuel, had in fact already melted, and

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sg 10 1 that at that time, at three o'clock in the afternoon on Wednes-
2 day, melting was still going on, what would you have done --
3 advised the Governor to do? All other information being what
4 you had in mind but if, in addition to that, you knew that
5 there was in fact melting going on at that time, on the scale of
6 tons of uranium?

7 MR. SCRANTON: I would not have advised him to do
8 anything. I would have advised him to talk to, which he would
9 have done, experts on site and to fathom from them what the
10 consequences of that were: Is it continuing? How much time
11 we have? Should we evacuate? On the basis of that advice I
12 think we would have made a decision whether to evacuate or not.
13 But I think really the advice has to be made really on the opi-
14 nion of experts on what the consequences of that process are.
15 And I wouldn't have been qualified to give him that.

16 COMMISSIONER TAYLOR: Just a final question. If that
17 had been the situation, if you had gotten that information from
18 authoritative sources in the middle of the afternoon on Wednes-
19 day, do you think that would have heightened substantially the
20 state of general anxiety and tension in the Governor's office?

21 MR. SCRANTON: It would certainly have heightened the
22 state of concern. No doubt about it.

23 COMMISSIONER TAYLOR: Thank you.

24 CHAIRMAN KEMENY: Commissioner McPherson?
25

1 CHAIRMAN KEMENY: Mr. McPherson?

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2 COMMISSIONER MC PHERSON: Governor Scranton, I'd
3 appreciate it if you would give us, in whatever free form you
4 choose to do it, a description of the politics, and I mean
5 that in the broadest sense, the political considerations that
6 go into the decision of whether or not to order an evacuation.

7 MR. SCRANTON: I'm not sure what you mean by the
8 political sense of it.

9 COMMISSIONER MC PHERSON: Well, I mean what the
10 people of that area are going to end up thinking about you
11 and Governor Thornburgh, to begin with.

12 MR. SCRANTON: I don't think that ever -- this may
13 be hard for you to believe, but I really don't think that ever
14 entered into it, and I'll tell you why. You don't really get
15 much of an opportunity to think that way, although it may be
16 instinctive in a politician, but it certainly isn't conscious,
17 when you are besieged, I think, by a tremendous amount of
18 information, a lot of conflicting, most of it highly technical,
19 and trying to come up with an understanding of that. You do
20 what you do when you're very highly focused.

21 Our consideration on whether to evacuate or not was
22 always based upon what would be the consequences of an evacua-
23 tion and was evacuation warranted by the circumstances. In
24 other words, were you going to take the chance of evacuating
25 a great number of people, with it's economic dislocations and

LA 2 1 problems to health and create a panic, or were you confident
2 enough that you had enough time, if the probabilities occurred,
3 to wait.

4 That was always the consideration in our minds.
5 There were always people available to us of both parties. I
6 don't think you really get much of a chance to say -- The
7 impression you worry about is the impression you're giving
8 managing the crisis. Are your actions going to cause greater
9 apprehension, greater panic, greater uncertainty? Or is what
10 you do going to be a calming influence, a reasoning influence,
11 an influence that will help lead to the more efficient response
12 to whatever was necessary?

13 COMMISSIONER MC PHERSON: Well, if you had decided
14 not to evacuate, as you did, and if there had been a breach
15 of containment and a substantial release of radioactivity into
16 the area, you would have made a, at least, politically faulty
17 decision.

18 MR. SCRANTON: We would have made worse than that.

19 COMMISSIONER MC PHERSON: Right, but I'm speaking
20 for the moment on that -- just on that level. On the other
21 hand, if you had ordered evacuation and if there was no
22 release, what did you anticipate the cost of that would have
23 been? You said economic and you said panic and health costs.
24 Was it the estimation of the governor's office and your agency
25 that evacuations under these circumstances would be likely to

LA 3 1 cause panic?

2 MR. SCRANTON: I think it was certainly the estima-
3 tion of me and my office, the governor and his office, although
4 I am sure there is conflicting opinion on that, that there is
5 a probability of panic.

6 COMMISSIONER MC PHERSON: A probability of panic?

7 MR. SCRANTON: A high possibility of panic. The
8 problem is that you are dealing with a kind of situation that
9 is unprecedented. It's not a flood, it's not a fire, it's not
10 a hurricane. People aren't familiar with it. They are easily
11 excitable because the dangers are so strange. That if you say
12 you evacuated even five miles, or perhaps three, seven miles,
13 or whatever, you could possibly start an evacuation that had
14 10, 15, 20 mile consequences and tremendous social disruption.
15 There were plants and businesses in that area which, if you're
16 going to close them down, take time, or else they can't be
17 started up for a very long time. There were people in hospi-
18 tals, special care, old age, people who are elderly, people
19 who were premature babies, which you don't move unless you
20 mean it. You could liable for overreacting if there were
21 traffic accidents, if there were burglaries, if there were
22 civil disorders within the area. In a flood, you don't have
23 to worry about a burglary, you don't have to worry about
24 people coming into the neighborhood, you don't have to worry
25 about security. In a nuclear evacuation, you do.

LA 4

1 I think that's pretty much of a judgemental call.
2 I don't think anybody can tell you, yes, this is going to
3 happen, or, no, it's not going to happen. But in our estima-
4 tion, our judgement was that given the information that we
5 had, it should not be risked.

6 COMMISSIONER MC PHERSON: Did you think that the
7 facilities available to the state and the county were suffi-
8 cient to reduce those dangers of an evacuation?

9 MR. SCRANTON: Yes, if you could --

10 COMMISSIONER MC PHERSON: Let me put it another way.
11 Did any shortfall in facilities and equipment and funds and
12 so on, or planning have a role in the decision not to evacuate?

13 MR. SCRANTON: No. From the very beginning, our
14 plans, the evacuation plans, as set forth by the NRC and others,
15 were really limited to five miles. And you're talking about
16 25,000 people.

17 COMMISSIONER MC PHERSON: And no hospitals in that
18 area.

19 MR. SCRANTON: No hospitals. It became very clear
20 to us, particularly on Saturday, when people began making
21 speculations that five miles wouldn't be nearly -- some people
22 were saying as much as 50 miles, but NRC even said 10 to 20
23 miles, that whatever you did was going to have 10 to 20 mile
24 consequences, because it was in the public mind. We were very
25 careful to send people out to all the counties, federal people

LA 5 1 and state people, to continuously reassess their state of
2 readiness. And when it became clear to us that we were going
3 to have to prepare now, suddenly in the midst of a crisis, for
4 more than five miles, we sent Bob Adamcik, John McConnell, and
5 some of our own people out to make assessments as to what
6 would be necessary, what we would have to have, and what would
7 be -- what we would need.

8 But at no time, in my estimation, did our shortfall
9 of equipment and expertise ever mean that we could not evacuate.
10 If you have to evacuate, you can evacuate. I think the more
11 time you are given, the more luxuries you think about, and
12 the more you try to become more and more prepared. But I don't
13 think -- there was never at any time the discussion that says,
14 look, we're not going to evacuate, because we're not ready to
15 evacuate. That was never a consideration.

16 COMMISSIONER MC PHERSON: Just a final question, or
17 line of questioning anyway. Lining up on a blackboard those
18 who were recommending to you on, say, Friday and Saturday
19 evacuation, who were they?

20 MR. SCRANTON: On the state level?

21 COMMISSIONER MC PHERSON: Federal level and state.

22 MR. SCRANTON: People who were there at site?

23 COMMISSIONER MC PHERSON: No, in Washington and --

24 MR. SCRANTON: The only recommendations we received
25 for evacuation were from Mr. Collins from the NRC Friday

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1 morning and -- I don't recall others, although I know there
2 was some speculation that it might be wise to evacuate, coming
3 not from people in Harrisburg or on the scene. I learned
4 later that Harold Denton said it might be wise to evacuate
5 when he was in Washington. When he came to the scene, he
6 said, don't. There was never anybody on the scene --

7 COMMISSIONER MC PHERSON: Denton said, don't to
8 evacuation.

9 MR. SCRANTON: He said, you don't need to evacuate.
10 There was never anybody on NRC or on a state level who knew
11 the facts, understood them, who said we ought to evacuate.
12 We never received advice to evacuate.

13 COMMISSIONER MC PHERSON: Did any of the commissioners
14 of the NRC ever recommend evacuation?

15 MR. SCRANTON: Nobody called up and said, you ought
16 to evacuate. During the course of conversation with the
17 governor, one or more of them, maybe even Chairman Hendrie,
18 might have said it may be wise to evacuate, before he knew the
19 information, at which point we would say, well, this is the
20 situation, this is the situation. And always after that,
21 they'd say, well, you're doing the right thing, the advisory
22 for women and children is a fine thing, but there's no need
23 at this moment to evacuate. And we kept double checking that.
24 We checked it with the Defense Civil Preparedness Agency, the
25 Federal Disaster Assistance Administration, our own DER, our

LA 7 1 own health authorities, the White House. And never did any-
2 body say, you ought to evacuate.

3 COMMISSIONER MC PHERSON: When the NRC people would
4 call, Hendrie or others, and suggest that you consider
5 evacuation, and then you would say -- I'm paraphrasing, I
6 think, what you just said -- you would say, but here's the
7 information. That suggests that you had a whole lot better
8 information than the NRC had in Washington.

9 MR. SCRANTON: I think we did for the first couple
10 days. I'm not talking me personally. I mean all of us
11 together.

12 COMMISSIONER MC PHERSON: That would be on Wednesday
13 and Thursday?

14 MR. SCRANTON: Wednesday and Thursday and Friday,
15 before Harold Denton got there.

16 COMMISSIONER MC PHERSON: That would be from state
17 sources or from --

18 MR. SCRANTON: No, there were also federal sources.

19 COMMISSIONER MC PHERSON: DOE sources?

20 MR. SCRANTON: DOE and NRC, who were there on site.
21 But somehow there was some communication gap between the NRC
22 people on site and the NRC people in Washington, which I
23 can't explain.

24 COMMISSIONER MC PHERSON: So you were getting a
25 better feed from the NRC people on site than NRC in Washington

LA 8

1 was getting.

2 MR. SCRANTON: Based upon the comments that were
3 being made publicly from the NRC in Washington, I would have to
4 infer that. But I don't know because I didn't read the
5 messages. But when we would inform the people of NRC about
6 what we knew -- and it's not just me and the governor, but
7 people who were in the office, et cetera -- they would always
8 find you were doing the right thing. And then when Harold
9 Denton came on site, he concurred wholeheartedly. And always,
10 at every briefing we had with Harold Denton, the question we
11 always asked, is this going to require an evacuation, what are
12 the probabilities of an evacuation, how much time are we going
13 to have, is the question we kept asking and asking and asking.
14 And there was never, ever a recommendation to evacuate.

15 CHAIRMAN KEMENY: Governor Peterson?

16 COMMISSIONER PETERSON: Mr. Chairman, Commissioner
17 Henderson's covered my questions except for one, Governor
18 Scranton, a follow-up. I understand that the head of the
19 Pennsylvania Emergency Preparedness Agency, Col. Henderson,
20 recommended to the governor that the immediate area be
21 evacuated on that Friday morning. And he did that as a result
22 of communications with people from NRC. And, as you said
23 earlier, at that same juncture, Harold Denton, too, back in
24 Washington, was recommending evacuation, which, a couple of
25 days later, he no longer thought necessary. But when

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LA 9 1 Professor Taylor talked to you earlier and suggested that --
2 or asked you if you had known that a substantial amount of the
3 fuel had melted, would you have made a decision to evacuate,
4 you said you would have asked your experts for advice.
5 While your experts gave you advice, I was wondering why you
6 didn't accept that back on Friday morning.

7 MR. SCRANTON: Two reasons. One is because, first
8 of all, Harold Denton did not give us the advice to evacuate.
9 This was read later in the tapes, I guess, at NRC or comments
10 that he made to his fellow people at NRC. It was never to us
11 that he made that recommendation. Secondly, Col. Henderson
12 apparently made this recommendation to the governor on the
13 phone. What happened was that Friday morning he called me at
14 home and said, Mr. Collins from NRC -- and I didn't know who
15 Mr. Collins was -- said there was an unplanned release of
16 1200 millirems from the Island and that he thought we had to
17 evacuate.

18 The basis upon which Col. Henderson, I believe,
19 made that recommendation to the governor was on what Mr.
20 Collins had said. Now, you got to remember Mr. Collins was in
21 Washington, and Col. Henderson had no more information than I
22 had or the governor had. And we did not listen to him --
23 listened to him, but did not take that action because our
24 job was to find out exactly what this meant off site if it
25 had occurred, what our Department of Environmental Resource

LA 10 1 people were saying. And it turned out that an evacuation was
2 not warranted. We even had Chairman Hendrie's of that in a
3 phone call later that morning, and the President's agreement
4 with that in a phone call later that morning. So it wasn't
5 somebody who knew more than we knew that was making that kind
6 of recommendation. Really our determination was to get to
7 the source of the people that were there and that understood
8 it.

9 CHAIRMAN KEMENY: Commissioner Lewis?

10 COMMISSIONER LEWIS: How do you perceive the situa-
11 tion at Three Mile Island right now?

12 MR. SCRANTON: I perceive it right now as a situation
13 which is stable, which is not to say, in the broadest sense
14 of the word, concluded, but I think it's stable. There is a
15 good deal of radioactive material on the Island that has to
16 be disposed of. We still have not gotten inside the core to
17 find out exactly what happened, so there are always unknowns.
18 I think if you're asking that question from the standpoint of
19 safety or the need for an evacuation or could something occur
20 that would heat up and melt down, I think we have plenty of
21 warning time if that were to be necessary.

22 COMMISSIONER LEWIS: Do you keep regularly in touch
23 with Met. Ed. on the conditions at Three Mile Island or are
24 you still getting your information routed through NRC?

25 MR. SCRANTON: No, we get it from everywhere we can

LA 11 1 get it, but we also have Department of Environmental Resource
2 people who have access to the operating room and control room.
3 And we are getting as much first-hand knowledge as we can.

4 COMMISSIONER LEWIS: You said that there's a lot of
5 radioactive waste inside. Have you any idea of how that is
6 going to be removed from Three Mile Island?

7 MR. SCRANTON: That is a bone of contention at the
8 moment. And I do not know. Apparently, the Metropolitan
9 Edison and/or NRC is going to make a recommendation and then
10 call for public comment on it. And I think it would be wise
11 for me to wait until that time to make any comment. I don't
12 know how it's going to --

13 COMMISSIONER LEWIS: In other words, what you're
14 saying, in terms of disposal of the waste, basically the state
15 doesn't have very much input, even though it's on your terri-
16 tory.

17 MR. SCRANTON: Oh, yes, we do, because we have the
18 option of joining a law suit not to dump it into the river.
19 If the radioactive waste is -- if there is a plan that would
20 dump radioactive waste above specifications in the environ-
21 ment, we have the ability to stop them. And we have legal
22 recourse, depending upon what the plan is. At the moment, we
23 don't know what the plan is.

24 We don't have the ability to impose upon them a
25 solution, although -- from a legal standpoint. I think from

LA 12 1 a practical standpoint, because of the public pressures, et
2 cetara, our leverage is a little bit greater.

3 COMMISSIONER LEWIS: I see. Do you have any laws in
4 the state of Pennsylvania about the transportation of waste,
5 if it's decided not to dump it in the river? There have been
6 problems about the high level of radioactivity inside of there.
7 And how are you going to get it out, even when that decision
8 is made?

9 MR. SCRANTON: Yes. I am not expert on the laws of
10 transportation of nuclear waste, so I wouldn't -- we have them,
11 but I can't speculate. There has been -- the original plan
12 that caused so much of a brouhaha was to, as I understand it,
13 clean the water, which is the 600,000 to 800,000 gallons in
14 containment, on site, solidify in some way the contaminants
15 and truck them off site and dump the water into the river.
16 The water supposedly that would be going to the river would
17 be safe from the standpoint of federal regulations. This has
18 caused a great deal of concern and consternation to the people
19 downstream. And I think that's what caused the NRC to say
20 there will be public hearings before they do this.

21

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1 COMMISSIONER LEWIS: And do you have a position
2 as the state government on the dumping of the waste?

3 MR. SCRANTON: No, we do not. I think we intend,
4 of course, to be as protective of our people as we possibly
5 can -- not only protective from the standpoint of physical,
6 but being very sensitive to the psychological trauma that they
7 have been through. But I think that really the first presen-
8 tation has to come from the utility or the NRC.

9 COMMISSIONER LEWIS: Considering what you have been
10 through, if you were sitting on this Commission, would you
11 advise that Unit 2 be reopened?

12 MR. SCRANTON: I couldn't advise that it be reopened
13 now. We just don't know enough. I don't know enough.

14 COMMISSIONER LEWIS: Or ever?

15 MR. SCRANTON: That is a very difficult question
16 and I wear two hats. As chairman of the Governor's Energy
17 Council, I am very concerned about the necessity for energy
18 in our state, concerned about our dependence on foreign oil
19 We are fortunate to come from a coal state, but there are
20 very real blockages to using coal and environmental dangers
21 to it. If you are asking me if I am utterly opposed to nuclear
22 power, I am not. Three Mile Island 2 goes a little bit beyond
23 that because the people of the area have been subjected to
24 so much. I think a great deal of whether Three Mile Island
25 will ever come back will depend on, not only the answers this

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1 Commission gives, NRC gives, but upon the processes that are
 2 undertaken to make that decision and the inclusion of the peo-
 3 ple and the feeling of the people in the area. I can't answer
 4 that question at this time.

5 COMMISSIONER LEWIS: Do you think there should be
 6 a plebiscite among the people surrounding the plant so that
 7 they have some input into that decision?

8 MR. SCRANTON: Absolutely. They have to have some
 9 input; whether it is a plebiscite or not, I would not be opposed
 10 to a plebiscite. It is absolutely important that their feelings
 11 are heard on it.

12 COMMISSIONER LEWIS: Thank you.

13 CHAIRMAN KEMENY: Thank you very much, Governor.

14 May I just make one thing clear. Governor Thornburgh
 15 was unable to attend the meetings at this particular time.
 16 He had a conflict. He has accepted an invitation to appear
 17 at our next set of hearings and that is why he is not here
 18 today.

19 This happens to finish the state portion of the
 20 testimony and, therefore, this seems like an appropriate time
 21 to declare a ten-minute recess. And may I thank you very much
 22 Governor Scranton.

23 (Brief recess.)

24 CHAIRMAN KEMENY: Will the meeting please come to
 25 order and will counsel please call and swear in the next witness.

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1 MR. HARVEY: John Villforth, please.

2 Whereupon,

3 JOHN VILLFORTH

4 was called as a witness and, after being first duly sworn,
5 was examined and testified as follows:

6 CHAIRMAN KEMENY: Would you please state your full
7 name and your current position for our record.

8 MR. VILLFORTH: My name is John Carl Villforth. I
9 am the director of the Bureau of Radiological Health in the
10 Food and Drug Administration of the Public Health Service.

11 CHAIRMAN KEMENY: Thank you. Counsel.

12 MR. HARVEY: Mr. Villforth, could you provide the
13 Commission with a short summary of what kinds of responsibil-
14 ities the Bureau of Radiological Health has within HEW?

15 MR. VILLFORTH: Yes. The Bureau of Radiological
16 Health is responsible primarily for the administration of the
17 radiation control for Health and Safety Act, known as Public
18 Law 90-602. This gives us the responsibility for protecting
19 the public health and safety from electronic product radiations,
20 both ionizing and nonionizing radiations. That is primarily
21 any type of radiation that is generated as a result of an
22 electronic circuit, whether it is lasers, ultrasound, micro-
23 waves, radio frequencies, x-rays or any of those sorts of
24 things.

25 MR. HARVEY: Does the Bureau of Radiological Health

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1 have any monitoring capability?

2 MR. VILLFORTH: The Bureau of Radiological Health
3 has monitoring capability. We have no monitoring responsibil-
4 ity as such under the Act, other than as it pertains the spe-
5 cific materials that we control under the Act, that we control
6 under the Health and Safety Act. If, by that, you mean do
7 we have a monitoring responsibility for environmental radiation,
8 the answer is "no". Do we have a monitoring capability for
9 environmental radiation, "yes" to some extent, in that some
10 of the dosimetry services and facilities that we have in the
11 x-ray area could be used and could be made available as in
12 one case they were for this particular incident, the Three
13 Mile Island.

14 MR. HARVEY: The Bureau is a bureau within the
15 Food and Drug Administration. Is that correct?

16 MR. VILLFORTH: Yes, sir.

17 MR. HARVEY: We had some testimony today about
18 IRAP, the Interagency Radiological Assistance Plan. Could you
19 describe the plan and what it is intended to do and how HEW
20 fits into that plan?

21 MR. VILLFORTH: Well, basically, my understanding
22 of the Interagency Radiological Assistance Plan is that it is
23 an understanding among the federal agencies that have capability
24 and resources in radiation dosimetry and monitoring or those
25 agencies which may have contractor facilities that have those

resources to be able to band together, so to speak, in the event of a nuclear incident or a situation, whereby those resources might be needed anywhere in the country, as in the case of an airplane in the old days, nuclear weapons accident, when we were concerned with aircraft and nuclear weapons that might have an accident anywhere in the country. There would be a need for the local group that had the most capability to be brought in to give assistance in that. This resulted in the type of plan which was administered by the old Atomic Energy Commission and, more recently, by the Department of Energy to provide that assistance on an as needed basis, either by the state or one of the other federal agencies.

MR. HARVEY: And what specific responsibility does HEW have under IRAP?

MR. VILLFORTH: The HEW just is a signatory to IRAP and in the event that there was a situation or an accident wherein the HEW teams might be needed, the HEW teams might be called upon. For example, we have a modest team in the University of Cincinnati Nuclear Medicine Laboratory, which has a modest capability. If there were a situation, for example, at the Cincinnati airport, which involved a damaged shipment of radioactive materials and a suspected leak of those materials, the State of Ohio may ask for help. This would get through the system and they may call the team from -- our team from the University -- that is detailed from the University

1 of Cincinnati to go out and respond to that type of situation.

2 MR. HARVEY: Was HEW ever specifically requested by
3 the state or by any other federal agency to respond to the
4 Three Mile Island incident under IRAP?

5 MR. VILLFORTH: No.

6 MR. HARVEY: Could you explain how the Department
7 of Health and Welfare -- Health, Education and Welfare --
8 became involved in Three Mile Island incident?

9 MR. VILLFORTH: Well, our responsibilities in HEW
10 are more general. I need to enumerate these. (1) The speci-
11 fic responsibilities of the Food and Drug Administration, pri-
12 marily our sister bureau, the Bureau of Foods, is to assure
13 that foods traveling in interstate commerce that may be con-
14 taminated or which there may be some suspected problem as in
15 the possibility at Three Mile Island, that is a regulatory
16 responsibility of the Bureau of Foods to see that that doesn't
17 occur. That is milk and food.

18 The responsibility for the -- the general responsi-
19 bility for the Department in nuclear incidents and in nuclear
20 emergencies would be best described in the December, 1975
21 publication in the Federal Register, which delineates the
22 various responsibilities of the federal agencies under this
23 memorandum of understanding among the federal agencies. Spe-
24 cifically, the HEW responsibilities -- and this is as it relates
25 to the preparation for peacetime nuclear accidents, transportation

1 reactor or what have you. The responsibilities of DHEW are
2 along the lines of developing guidelines or the preparation
3 or the planning for this particular event. For example, one
4 of our concerns was the guidelines that could be used by the
5 local jurisdiction or the state jurisdiction as it relates
6 to radioactive contamination in food. At what point would
7 certain decisions have to be made that there would be a public
8 health problem.

9 MR. HARVEY: In other words, you would be assisting
10 the states in developing their own plans.

11 MR. VILLFORTH: As far as those types of guidelines
12 were concerned, yes. It could be included into the state --
13 they might be included in the state plan. The guidelines
14 also talk about the availability of prophylactic drugs like
15 potassium iodide as a blocking agent for radioactive iodine.

16 MR. HARVEY: Now, is it fair to say that the Depart-
17 ment of HEW did not become significantly involved in Three
18 Mile Island incident on Wednesday and Thursday, March 28 and
19 29?

20 MR. VILLFORTH: Yes. I would say that by signifi-
21 cant, that would be correct. Of course, as soon as the inci-
22 dent was reported -- and I guess we learned about it officially
23 from the Nuclear Regulatory Commission about mid-morning,
24 perhaps 10:30 on the morning of Wednesday, the 28th. We had
25 learned about it earlier from listening to the news broadcasts

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1 in our Philadelphia regional office, but we heard about it
2 officially and got the rundown about 10:30. The question of
3 a possibility of contamination in food and milk came up and
4 as a result a program was initiated to increase the sampling
5 of milk and food in the area and also to find out what other
6 products that FDA has a regulatory mandate over might be in
7 that area. For example, if there is a pharmaceutical firm,
8 a biological firm, even a medical device firm, that is produc-
9 ing products that needed to be sterile or in which there might
10 be concern of say the water supply being contaminated and the
11 water supply getting into the plant and, therefore, effecting
12 the product, the Food and Drug Administration would be concerned
13 about those products, also.

14 So, one of the first things that was being done was
15 to develop an inventory of what facilities that FDA regulates
16 in the immediate area -- what those facilities were.

17 MR. HARVEY: The first significant involvement of
18 the Department of Health, Education and Welfare as a whole
19 came on Friday the 30th. Isn't that correct?

20 MR. VILLFORTH: Yes, sir. I think that would be
21 right.

22 MR. HARVEY: Was there a meeting held to discuss
23 the Department's perspective involvement in the incident?

24 MR. VILLFORTH: Yes, at that time there was a meeting
25 in Secretary Califano's office, in which the Secretary assembled

1 what he referred to as his health cabinet; that is, the
2 director of the National Institutes of Health, the director
3 of the Center for Disease Control, the director of the Food
4 and Drug -- the commissioner of the Food and Drug Administra-
5 tion, the director of the National Institutes of Occupational
6 Safety and Health and a few others to come together and dis-
7 cuss the role of the Food and Drug Administration.

8 MR. HARVEY: Were you in that meeting?

9 MR. VILLFORTH: Yes, sir.

10 MR. HARVEY: And were assignments made as a result
11 of that meeting within the Department of Health, Education
12 and Welfare?

13 MR. VILLFORTH: Yes, sir. They were. For example,
14 the role of the Food and Drug Administration -- one of the
15 roles was as I indicated to be responsible for the assurance
16 that there was no radioactive contamination in the milk and
17 food that would cause a problem to the agency.

18 MR. HARVEY: Was evacuation discussed at that meet-
19 ing at all?

20 MR. VILLFORTH: I don't remember -- I am sure the
21 question of evacuation as a potential must have come up. I
22 do not remember any recommendations coming out of that meeting
23 that would indicate an HEW recommendation.

24 MR. HARVEY: Was there a subsequent meeting concern-
25 ing HEW's involvement in the Three Mile Island incident?

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MR. VILLFORTH: I guess I need to make it very clear that the -- and I didn't clarify this before -- that the Secretary -- Secretary Califano -- at the time took a very personal interest in the situation and to put a little bit of background and put that in perspective, I think, you must have to realize that the Secretary had been given a responsibility in May of 1978 to lead a federal task force made up of members from the Department of Energy, Department of Defense, Veterans Administration and then later on, the Nuclear Regulatory Commission and the Environmental Protection Agency were added, to examine the question of the low level ionizing radiation concerns in this country and these were stimulated by the reports in literature about radiation damage at the Portsmouth Naval Shipyard, the Hanford National Laboratory of the Department of Energy, the question of the military people exposed in the middle fifties to the weapons, nuclear weapons, testing, specifically the "smoky" series, the concern of the citizens in Utah and Nevada about the low level radiation. The Secretary in all of these situations had been briefed by his staff and as a result of the panels and task forces made up of representatives from HEW and the other agencies, it had become apparent that one of the problems in terms of epidemiology in this country as it relates to the study that had been conducted by some investigators around some of these sites and situations that I just mentioned, the one of the problems was the

1 inability to really understand what the dose was to those
2 populations, the dose from the smoky weapons test. What did
3 the GIs get? What was the offsite population dose from wea-
4 pons testing.

5 The second problem was that nobody was quite sure
6 what the data base of the population was. If we are looking
7 back in the 1950s, the middle fifties, it was not clear who
8 all of the military were. Some of the military records had
9 been destroyed in the fire in St. Louis. So, the difficulty
10 of identifying the base of population and the difficulty of
11 understanding what the dosimetry was, so there was some frailty
12 in these studies. And I believe Secretary Califano, with
13 that responsibility given to him by the White House, to chair
14 this task force, recognized that in a situation like Three
15 Mile Island that it would be very important that the dosimetry
16 be well defined and that the population -- both the worker
17 population and the offsite population -- be adequately identi-
18 fied or registered so that they could be located in the future
19 and studies could be conducted on them. So, in addition to
20 the Department's more traditional responsibility, regulatory
21 responsibilities, the Secretary, I believe, because of this
22 background, took a very personal interest and wanted to make
23 sure that 20 years from now or 10 years from now, when one
24 looks back, that all of the necessary information was collected
25 and documented, so that if a study needed to be made, it could

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1 be made.

2 MR. HARVEY: So, it would be fair to say that as
3 of the 30th, when the Secretary made these assignments, he
4 was in effect carving out a new role for HEW in this kind of
5 incident, that differed slightly from its traditional role.

6 MR. VILLFORTH: I would say that he -- by new role,
7 I don't think that is a new regulatory responsibility. I
8 think the responsibility to conduct epidemiological studies
9 where there may be some type of a risk, whether it is Guillian
10 Barre or Swine Flu or what have you is traditional with the
11 Department. But I would guess that the Secretary certainly
12 elevated the concern of all of us that were sitting in that
13 meeting as to exactly what he had in mind.

14 MR. HARVEY: Now, at that meeting on the 30th, was
15 the EPA and the NRC represented?

16 MR. VILLFORTH: Yes, sir. To the best of my know-
17 ledge, Dr. Steve Gage of the Office of Research and Development
18 of the Environmental Protection Agency participated in that
19 meeting and, I believe, Commissioner Galinsky of the Nuclear
20 Regulatory Commission participated in that.

21 MR. HARVEY: And it was contemplated that the EPA
22 would be doing environmental monitoring at the site as of
23 that meeting?

24 MR. VILLFORTH: I don't recall how that came about.
25 I am sure that it was understood by us that the Environmental

1 Protection Agency's team was being called in to the site.
2 Their total responsibility, perhaps, wasn't clearly understood.
3 But everybody who was prepared to respond seemed to be respond-
4 ing.

5 MR. HARVEY: Moving to the 31st, was there a meeting
6 at the White House among federal agencies to coordinate the
7 federal response to Three Mile Island incident?

8 MR. VILLFORTH: Yes, sir. There was. We had a
9 meeting in the Department earlier in the afternoon and about
10 5:30 on Saturday afternoon, the 31st, many of us adjourned to
11 the White House to meet with representatives of the other
12 federal agencies. I know the Nuclear Regulatory Commission
13 was there, the Environmental Protection Agency, the FDAA,
14 Federal Defense Assistance Administration was there and, of
15 course, the White House staff. I do recall that the Depart-
16 ment of Energy, I do not think was at that meeting.

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1 MR. HARVEY: If you can hold that thought for a
2 moment, at the meeting at HEW prior to going over to the
3 White House, was evacuation discussed?

4 MR. VILLFORTH: Again, I cannot recall. I am sure
5 that subject came up. I don't remember any type of a
6 consensus. I think that all of us were concerned or
7 apprehensive about the total situation, and I am sure we
8 were playing what if games to try to understand how we might
9 respond under different situations, and I am sure that that
10 did come up.

11 MR. HARVEY: What was the basic purpose of the
12 meeting at the White House among all these agencies?

13 MR. VILLFORTH: I think the main purpose was to
14 have Jack Watson who had been identified by the President,
15 we learned later as the contact for the President on the
16 matter of Three Mile Island, to indicate to all of us that
17 had some role to play in the Three Mile Island situation
18 the President's deep concern and the desire to offer the
19 assistance that we could, at the same time maintaining a
20 reasonably low profile as far as the federal posture was
21 concerned, that this was still a state responsibility, and
22 ours was a role of assistance, but the posture, our profile
23 would be rather low.

24 He reiterated the President's deep commitment to
25 Harold Denton as the lead contact for or lead spokesman for

1 the Nuclear Regulatory Commission on the site, and indicated
2 that we would be expected to work through the Nuclear
3 Regulatory Commission and communicate our information and
4 data base to the Nuclear Regulatory Commission.

5 MR. HARVEY: So, in effect, the purpose of this
6 meeting was to coordinate the efforts of the various federal
7 agencies that would be on site performing various functions
8 for the Federal Government point of view?

9 MR. VILLFORTH: I think that is, yes, that is my
10 understanding.

11 MR. HARVEY: Was the Department of Energy
12 represented at that meeting?

13 MR. VILLFORTH: No, not to my recollection.

14 MR. HARVEY: Was IRAB discussed?

15 MR. VILLFORTH: Not to my recollection, and I would
16 say I am pretty sure that IRAB was not discussed at that
17 meeting.

18 MR. HARVEY: All right. Is it fair to say that
19 the agency representatives at the White House who met on
20 that afternoon were not aware of the Department of Energy's
21 involvement on the site as of Wednesday and Thursday and
22 Friday?

23 MR. VILLFORTH: I would think that is correct, and
24 this -- yes, I would say that is correct.

25 MR. HARVEY: Would it be fair to say that as the

1 federal response to the incident developed that there were
2 two layers of activity, one at the site with the Department
3 of Energy working under IRAB doing its environmental
4 monitoring and secondly a second layer of federal activity
5 of agency heads coordinated by the White House at that
6 March 31 meeting and moving into the scene at that point as
7 of Friday and Saturday?

8 MR. VILLFORTH: I think that is sort of a good
9 characterization. I have the impression that many of the
10 people from the federal agencies, the DOE, the NRC, EPA,
11 our own agency who have known each other as professionals
12 in radiation protection have been involved with each other
13 in various committees or various responsibilities in one way
14 or another in radiation protection, sort of perceived the
15 job that had to be done and went ahead and did it, and that
16 my perception is that that was not always in concert of what
17 I think may have been expected from the sessions in the
18 White House.

19 MR. HARVEY: Was it your impression that the
20 Federal Government was acting as preemptor or consultant
21 to the state as the incident developed?

22 MR. VILLFORTH: I think, if one were to understand
23 the words of Jack Watson in the White House, I think our role
24 was to be more or less of a supporter to the state, but I am
25 afraid my impression is that at times we moved in there and

1 preempted more than we consulted, we, being collectively
2 my impression of the federal role.

3 MR. HARVEY: With the exception of DOE working
4 under IRAB?

5 MR. VILLFORTH: My understanding when I visited
6 the site and saw the Department of Energy's command post
7 at the Capital City Airport and saw how they had assembled
8 the various federal agencies, technical people from the
9 various federal agencies in briefings and how they took on
10 the leadership role of the exchange of data, results that
11 were collected during the day and provided a briefing and a
12 forum for exchange of information that they were doing a
13 very effective job.

14 It is, also, my understanding in discussions that
15 I have had with Mr. Tom Gerusky from the state that that
16 function was a function that the state or Tom had asked the
17 Department of Energy to perform, in that the mass of data
18 that was coming in from all of the different environmental
19 agents and food, milk and everything else that was being
20 collected was a tremendous volume that needed to be digested,
21 analyzed, distributed and the Department of Energy, I believe,
22 performed a very credible function in carrying this out.

23 MR. HARVEY: And as of Friday and Saturday the
24 White House task force, so to speak was unaware of DOE's
25 role at that point?

1 MR. VILLFORTH: I think that is correct because
 2 I am not sure that I was aware of the DOE role at that time.
 3 I am not sure that it was -- it was not until later that
 4 I perceived the role of DOE.

5 I knew that the Department of Energy Laboratory
 6 at Brookhave, the Brookhaven National Laboratory team was
 7 called in initially, again, from discussions and telephone
 8 communications that I had with Mr. Gerusky I was aware of
 9 that.

10 I was not aware of the magnitude of the massive
 11 effort that DOE had provided until later that I had gotten
 12 up there. I don't think in the very beginning that I
 13 appreciated that this was, in fact, an IRAB exercise and that
 14 the teams were there under this Interagency Radiological
 15 Assistance Plan.

16 I guess if I had been more alert or really
 17 perceived that I would have tried to make certain that our
 18 department understood the role of, the DOE's role there as an
 19 IRAB role and hopefully maybe had more visibility for DOE
 20 as a partner in this operation.

21 MR. HARVEY: Finally, with respect to the NRC, were
 22 HEW personnel provided to consult with the NRC from a public
 23 health point of view as the NRC made these decisions over the
 24 weekend on what to do about the bubble in the reactor?

25 MR. VILLFORTH: The NRC maintained a command post

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1 in Bethesda, and we had people from the Bureau of Radiological
2 Health assigned to that command post, as well as EPA did,
3 also, on a 24-hour basis to primarily get data from the NRC
4 and, also, to input data from the networks that we had. It
5 was also, the NRC operation at the site, and we had more or
6 less of an indirect relationship with the NRC at Three Mile
7 Island.

8 MR. HARVEY: Didn't Secretary Califano request
9 Jack Watson, among others, that the NRC consult closely with
10 Health, Education and Welfare health personnel before making
11 decisions?

12 MR. VILLFORTH: Yes, sir, the Secretary did suggest
13 to Jack Watson that one of the important aspects of this
14 situation would be that the public health consequences of
15 what to do, whether it is an evacuation or whatever the
16 consequences were ought to be considered and that the
17 Public Health Service ought to have some visibility in with
18 the NRC decision-making team.

19 I did not answer your question properly. We had
20 people in Bethesda. Those people were technical people,
21 radiation protection people but did not operate in a
22 management or decision-making role which I think was the
23 intent of your question. So, the answer was although this
24 was suggested to the White House, I don't believe that the
25 NRC ever asked for that management type of decision making

1 or recognized, perhaps, the role of the Public Health Service
2 or the EPA because the Secretary's memo identified EPA as
3 another health partner in that team.

4 MR. HARVEY: Thank you. I have no further
5 questions, Mr. Chairman.

6 CHAIRMAN KEMENY: Mr. Villforth, I would like to
7 follow up two of the lines of your testimony. One, if on that
8 important weekend the team was not aware of DOE's activities
9 where were you getting your data from?

10 MR. VILLFORTH: Well, this was one of the problems.
11 It was a problem to me because I should have said earlier
12 that one of the responsibilities that the Commissioner of
13 the Food and Drug Administration asked the Bureau of
14 Radiological Health to take on was the consultation with
15 our sister, on behalf of our sister Bureau of Foods on the
16 location and the frequency of food and milk sampling and
17 the type of analysis. That was not done by our organization.
18 It was done by -- in fact, we have three elements within the
19 Food and Drug Administration that are involved, the Bureau
20 of Foods which has program responsibility, the Executive
21 Directorate of Regional Operations which is the element
22 which runs the whole field. There are 2000 or so people in
23 the field collecting samples and for all of FDA's responsibilities
24 in doing compliance work. That group had to collect the
25 samples, and our Bureau. The Commissioner had asked us to

1 orchestrate this on behalf of FDA because the radiation
2 expertise was in our Bureau.

3 This meant that in order for us to best understand
4 where we should collect samples and what materials we should
5 collect, should we worry about water supplies downstream;
6 were there water releases; was it just airborne releases;
7 what were the problems; was there a lot of iodine; was there
8 something else out there; and what direction did it go?
9 We needed input data.

10 At the meetings that were held in the Department
11 of HEW on Friday with representatives from EPA and
12 Commissioner Galenski of NRC, the Secretary and these two
13 representatives had agreed that the NRC, Bethesda Office,
14 their command post would be the focal point for us to get
15 this information and for all of us to turn information over
16 to, and thus we set up a, and thus we participated in the
17 24-hour, around-the-clock staffing of that office, to get
18 data out and to put data in.

19 Now, my problem was that we were not getting,
20 I felt we were not getting all of the environmental data
21 out of Bethesda that I was aware was being collected in the
22 field, again, through telephone conversations with the
23 people in, either our people at Harrisburg or in telephone
24 conversations with Tom Gerusky. We knew that there was some
25 environmental data being collected, grass sampling, soil

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1 sampling and of course, air sampling. My concern was if there
 2 was going to be a release or a significant release of
 3 radioiodine, I wanted to make sure that we were sampling where
 4 we would do the most good. I wanted to get the farms where
 5 there was the greatest amount of, or the dairies where there
 6 was the greatest potential for the milk to be contaminated,
 7 not the wrong dairies.

8 I needed that input data, and I was having difficulty
 9 getting it out of NRC Bethesda, and so in fact, the impression
 10 I had was the DOE data or the Harrisburg data collected at
 11 Capital City Airport on behalf of DOE somehow did not work
 12 its way into the system to allow us to get it out as we had
 13 anticipated in the earlier meetings. I think that philosophy
 14 was reiterated at the White House meeting with Jack Watson
 15 on Friday, the 31st, where I had raised a question about not,
 16 that we were not able to get all of the data, and it was
 17 again reiterated that the NRC Bethesda would be the focal
 18 point for all of this information.

19 COMMISSIONER KEMENY: When did you, personally,
 20 become aware of the DOE, IRAB activity?

21 MR. VILLFORTH: It was really, I don't know. It was
 22 much later that I knew that it was an official IRAB operation.
 23 I know when I visited about two weeks after the accident, I
 24 visited the site and talked to Joe Deal, and I was aware that
 25 they were there and what they thought was an IRAB responsibility.

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1 and I know that I saw a piece of correspondence from
2 Mr. Gerusky to Joe Deal of the Department of Energy
3 indicating that Tom Gerusky was asking Joe Deal to collect
4 this data for them.

5 I was not sure whether that could be counted as an
6 IRAB request or not. I guess it was not until I saw some
7 of the chronologies generated by the NRC or DOE that I
8 realized that it was called an IRAB exercise.

9 CHAIRMAN KEMENY: But you were aware that DOE was
10 taking off-site measurements?

11 MR. VILLFORTH: Yes, I was.

12 CHAIRMAN KEMENY: Could you help me out with a
13 mystery I have had for over three months now, and I have been
14 waiting for the right person to ask? The first meeting of
15 this Commission occurred four weeks after the accident, and
16 at that meeting we had in the following order, the
17 Administrator of EPA, the Under Secretary of HEW on behalf
18 of Secretary Califano and then the next morning a representa-
19 tive of DOE, and the first two of these mentioned when asked,
20 said that off-site monitoring began when EPA arrived on the
21 site on Friday which upset this Commission because we were
22 very much afraid that important data had been lost, and then
23 the following morning, I believe it was Dr. Deutch from
24 DOE testified that they were on the site on Wednesday. How
25 could those two very important Administrators still not have

1 known four weeks later about the DOE monitoring?

2 MR. VILLFORTH: I guess I am under oath. I would
3 like to answer that over a beer.

4 CHAIRMAN KEMENY: I don't blame you for that.

5 MR. VILLFORTH: Simply let me say that in the case
6 of the Under Secretary for Health, Mr. Hale Champion who
7 testified before this Committee, Mr. Champion, in due respect
8 to his position was not really involved in a lot of the
9 deliberations that took place with regard to the Three Mile
10 Island Commission. He participated in the meetings or came
11 to the meetings, but as far as the involvement, the Secretary
12 himself was much more deeply involved and was much more
13 intensely briefed, and I think because of the Secretary's
14 inability to whatever, not --

15 CHAIRMAN KEMENY: He was just not available?

16 MR. VILLFORTH: Not available to participate, I
17 believe, and unfortunately, I would guess that Mr. Hale
18 Champion was not able to cover in depth that type of a
19 specific question, probably it wouldn't have ever entered his
20 mind.

21 CHAIRMAN KEMENY: Counsel reminds me, did out of
22 these meetings grow some sort of special role for you,
23 yourself in these activities, some sort of coordinating role?

24 MR. VILLFORTH: Yes, it is my understanding on the
25 first of April that I was given the responsibility to be the

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1 overall HEW coordinator, and Mr. Charles Cox on my staff was
2 given the responsibility to be the on-site coordinator
3 because it was recognized that there were many activities
4 going on on the site that needed some coordination because
5 of the Department of Environmental Resources in Pennsylvania,
6 the Department of Health, Mr. Adamcik's responsibility to the
7 NRC and DOE. So, we had to have somebody on site to coordinate
8 that; plus, there were many, many -- there were several
9 activities in the Department that were running back and forth
10 in order to keep that all straight. Mr. Charles Cox coordinated
11 that function up there. So, that, I understand, took place
12 on April 1, which is not necessarily consistent with the
13 minutes, the chronology that has been provided to the
14 Committee previously.

15 CHAIRMAN KEMENY: That is all right. I am not
16 pressing that point.

17 The other topic I wanted to follow up on was your
18 remarks about NRC and HEW health consultation. You have
19 described what happened during the accident. Let me ask
20 more generally, does NRC frequently call on HEW for help
21 in the public health area?

22 MR. VILLFORTH: My comments, I guess, would be that
23 a bureaucratic answer is that the NRC is most cordial and
24 cooperative when asked for help in these matters.

25 My disappointment is that the NRC, I don't think,

1 fully appreciates what Secretary Califano was trying to get
 2 across. I believe that the NRC, my personal feeling is that
 3 the NRC would do very well to have more health input into
 4 its decision making, whether that is EPA or HEW.

5 The situation that we read about in yesterday's
 6 newspaper of 4000 gallons of liquid waste going into the
 7 Susquehanna River as a result of a situation in the plant;
 8 now, we had people on the site. We try to keep on top of
 9 this because if we don't our Secretary wants to know why we
 10 are not on top of it, and when we have to find out about these
 11 things from the newspaper rather than directly from the NRC,
 12 I consider this a disappointment.

13 The consequences of it we must always dig out,
 14 whether it is a filter release, a failure or whether it is
 15 a situation that may be as significant as the consideration
 16 of an evacuation. I think that the role that the Public
 17 Health Service had during the weapons testing program in
 18 Nevada might be an example of something that I, as a model,
 19 that I think could be considered.

20 During that time, the Public Health Service as a
 21 result of an interagency agreement with the old Atomic Energy
 22 Commission, rightly or wrongly what you think about weapons
 23 testing, the Public Health Service participated in the
 24 decision making on whether or not a particular shot should be
 25 fired based on meteorological conditions and all of the other

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1 environmental factors on a particular time, and if things
2 were not right, and it looked like the public health was
3 going to be compromised, the Public Health Service rejected
4 the decision to fire on that particular time.

5 I think when we get into situations like we saw
6 here at Three Mile Island when you are contemplating things
7 like evacuation which in their own right have a significant
8 impact on the evacuation process or the administration of
9 potassium iodide or any of these other things that the
10 consequences of these means that there needs to be more of a
11 health visibility into that decision making.

12 CHAIRMAN KEMENY: In your opinion, does the
13 Nuclear Regulatory Commission have a strong public health
14 staff?

15 MR. VILLFORTH: The Nuclear Regulatory Commission
16 has some very, very competent people in radiological health
17 and radiation protection. That is not the same thing as
18 saying public health.

19 CHAIRMAN KEMENY: Yes, that is why I asked public
20 health. How would you answer it for public health?

21 MR. VILLFORTH: No.

22 CHAIRMAN KEMENY: Okay. Commissioner Lewis?
23
24
25

1 CHAIRMAN KEMENY: Commissioner Lewis?

2 COMMISSIONER MCPHERSON: Excuse me, Mr. Chairman.
3 Could the witness continue?

4 CHAIRMAN KEMENY: Yes.

5 MR. VILLFORTH: I don't think that that is neces-
6 sarily their responsibility. The radiation protection aspect
7 of those things which they regulate, nuclear medicines, indus-
8 trial application of sealed sources, and, to a certain extent,
9 the reactor problem, which the scenario is clear and the
10 licensing process is specific, I think can be covered without
11 that and without the urgency that existed in Three Mile
12 Island, and we have participated and do participate in that
13 review process, but when you are dealing with the licensing
14 application, nuclear medicine types of things, that is an
15 orderly Federal Register system which allows us to intervene
16 through that orderly process.

17 But when you take that to a question or whether you
18 do or you do not evacuate, you don't have that time for that
19 orderly process. I think that it is a different situation.

20 CHAIRMAN KEMENY: All right. Commissioner Lewis?

21 COMMISSIONER LEWIS: Mr. Villforth, we hear all
22 about--for an outsider coming into the alphabet soup of fed-
23 eral agencies, it is very confusing. We hear about the EPA,
24 the HEW, the, you know, DOE, et cetera, being involved in an
25 emergency situation. We have also heard people talk about

1 interagency rivalry which exists, we know, in the nature of
2 the federal beast.

3 Is there any way, ever, to make it work for an
4 emergency situation? Is there anything that you can suggest
5 to centralize the effort or to make it work more smoothly?
6 You might talk a little bit about what you are planning as a
7 post-TMI operation.

8 MR. VILLFORTH: Well, the Secretary has given the
9 responsibility to his Assistant Secretary for Planning to
10 review the whole emergency scenario, and that is taking place
11 and I cannot comment on just how the department is looking
12 at that, but that is underway.

13 The problem with so many of us in sort of equal
14 roles or--I guess some of my colleagues who have a more legi-
15 timate role in a TMI situation as it relates to environmental
16 matters; that is, the EPA, the NRC, and the DOE -- really
17 wonder, what are you doing in this thing, Villforth? Why
18 aren't you going home taking care of the x-ray machines where
19 you're needed? There is a tremendous competition for what to
20 do. There is a frustration, I feel, and a kind of really
21 vacuum, in some aspects, of who is in charge -- who, among
22 all of us -- DOE, NRC, EPA, FDA -- who is taking the lead now?
23 I perhaps should ask you.

24 COMMISSIONER LEWIS: I don't know, either.

25 (Laughter.)

1 MR. VILLFORTH: The situation is, you see, the
2 President has given some assignment in the middle of April
3 to the Environmental Protection Agency to collate, collect,
4 and to assemble, you see. Previously, we had what I thought
5 was an understanding that NRC -- my understanding was that
6 NRC was to collect, collate, and assemble this material,
7 particularly out of its office in Bethesda. That was later
8 shifted to -- by the President, by The White House -- to the
9 Environmental Protection Agency, who is to collate, collect,
10 and assemble, and prepare material for you.

11 And in fact, then, what we have learned is that the
12 group that is doing all the work, or the mass of the work,
13 the Department of Energy, in terms of the early weeks, they
14 are going off and doing their own thing, but no one seems to
15 know what they are doing. And I ask you, how does this get
16 put together?

17 CHAIRMAN KEMENY: I assure you the Commission is
18 getting the information from the Department of Energy, so at
19 least we don't have that problem.

20 COMMISSIONER LEWIS: But, Mr. Villforth, is there
21 any way to put it right? I mean, I guess what we are saying,
22 we are faced with the problem of an emergency type situation
23 and having to propose ways of -- Lord knows, we hope it never
24 happens again, but if it did, how to prevent it.

25 You know, given the way the federal system, federal

1 government works, is there any way to put this kind of thing
2 right, or are we going to be faced with this kind of division
3 and rivalry and a lack of leadership in any future incident?

4 MR. VILLFORTH: I guess it was a lot simpler in the
5 weapons testing when we really only had to have two things to
6 worry about. We had the Atomic Energy Commission and the
7 Public Health Service, and the division of responsibilities
8 was a lot clearer.

9 Now we have, basically, two health related organiza-
10 tions, and I didn't even bring up the Department of Labor,
11 who certainly has an interest, although the NRC's responsibi-
12 lity preempts the worker as it relates to the nuclear facility,
13 but it is difficult to see how this will be unscrambled with-
14 out some clear direction, and I think all of us are looking
15 to you to help us.

16 If the Environmental Protection Agency is to do
17 this, then they must have the resources to do it. If the NRC
18 is to do it, they must understand what the charge is that is
19 given to them, and they must do it.

20 COMMISSIONER LEWIS: So you are hoping this Commis-
21 sion will try to set right what no one has been able to set
22 right ever since the federal government was set up, in other
23 words.

24 MR. VILLFORTH: I hope you can give us some guidance.

25 COMMISSIONER LEWIS: Okay. Thank you.

1 CHAIRMAN KEMENY: Could I just have one follow-up
2 question, and that is, you mentioned the release of water
3 that you heard about through the news media. Do you now have
4 information on whether that was heavily contaminated or safe?

5 MR. VILLFORTH: My understanding from a handwritten
6 note from my staff, who have been in contact with the EPA
7 representative at the trailer which we shared at Three Mile
8 Island, is that the release limits for this nonspecific beta
9 are something like 10^{-7} microcuries per cc., and I am under
10 the impression that this was something like 1.8 times 10^{-7}
11 microcuries per cc., so it is really more of an academic
12 level. Now that has to confirmed. I understand --

13 CHAIRMAN KEMENY: Yes, but could you repeat those
14 two numbers?

15 MR. VILLFORTH: My understanding is that the
16 release limits under 10CFR-20 are something like 10^{-7} micro-
17 curies per cc. for nonspecific beta, which the concern here
18 was, I believe, of strontium 90 that might be released.

19 I understand that this was assayed out to something
20 like 1.8 microcuries per cc. In other words, perhaps 80 per-
21 cent more than what would have been allowed. But that is,
22 as I said --

23 CHAIRMAN KEMENY: That is, again, 1.8 times 10^{-7} ?

24 MR. VILLFORTH: Minus 7, yes. Eighty percent more
25 than what would have been permissible.

1 CHAIRMAN KEMENY: Now, does drinking water come
2 under the FDA's jurisdiction?

3 MR. VILLFORTH: No. That is in the Environmental
4 Protection Agency's responsibility. Only when that water
5 becomes bottled and sold, then it becomes a food, or when that
6 water enters into a processing plant used for food, then it
7 is a food responsibility.

8 CHAIRMAN KEMENY: Are you now worried about any of
9 that --

10 MR. VILLFORTH: Yes.

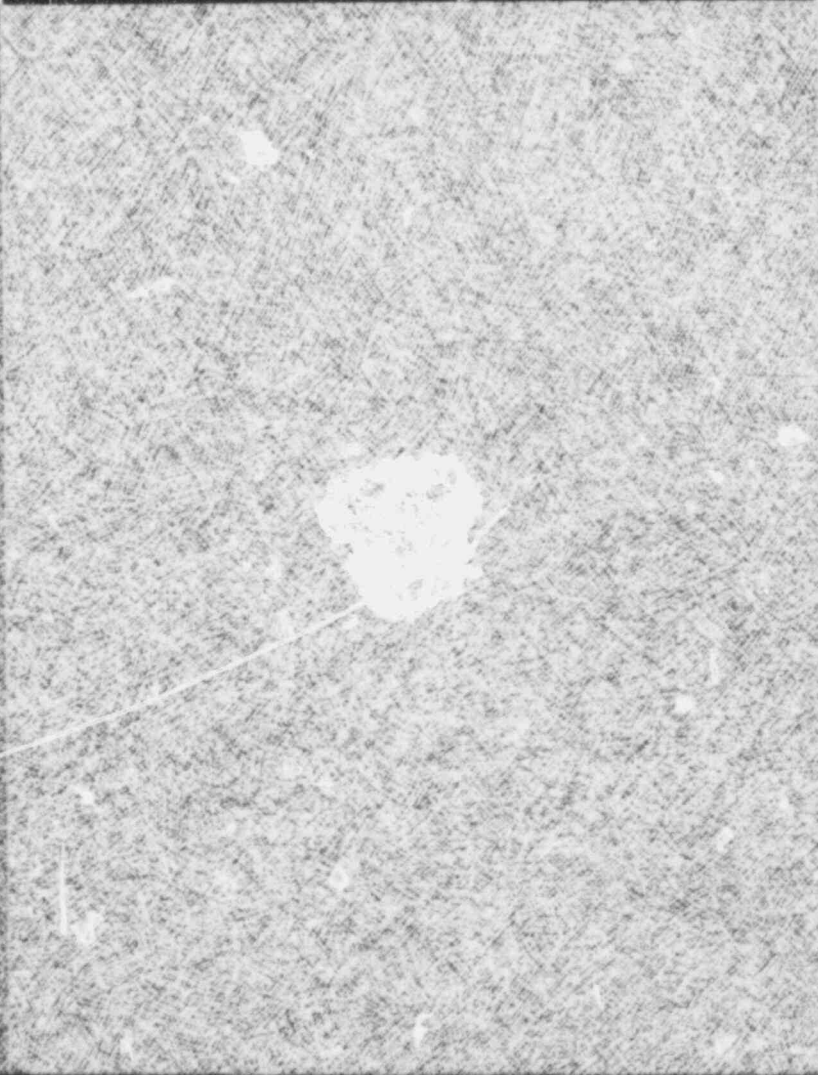
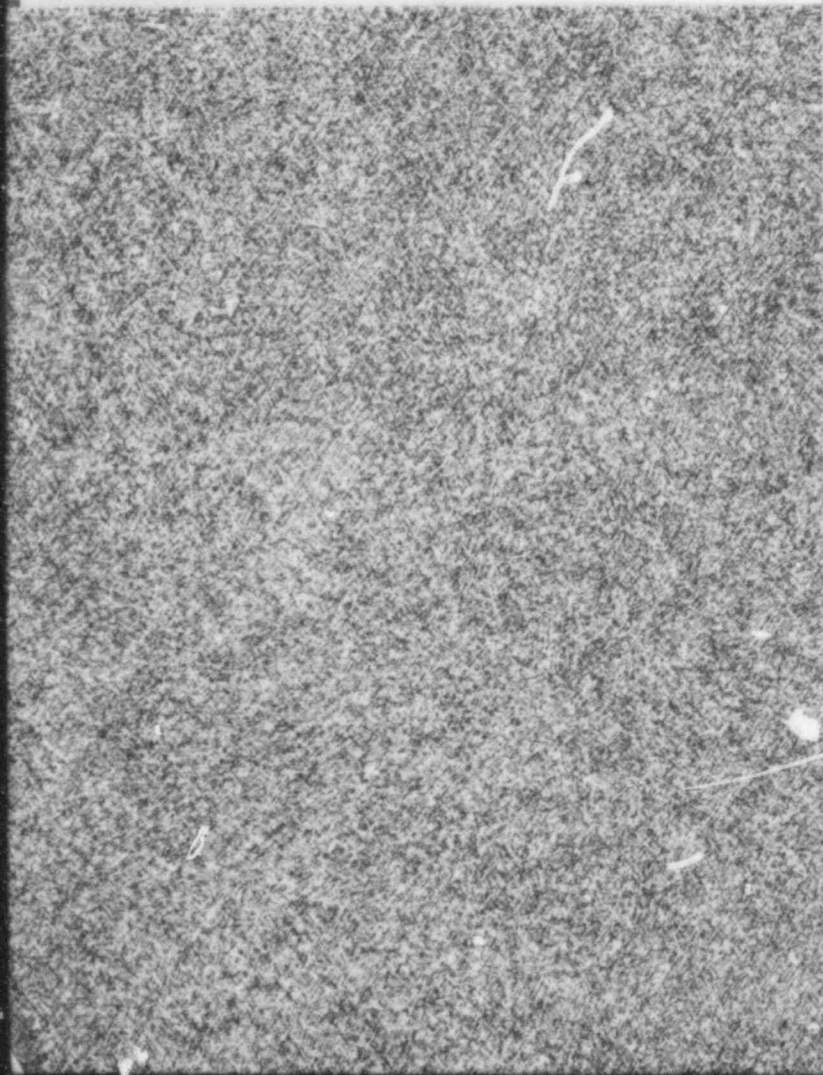
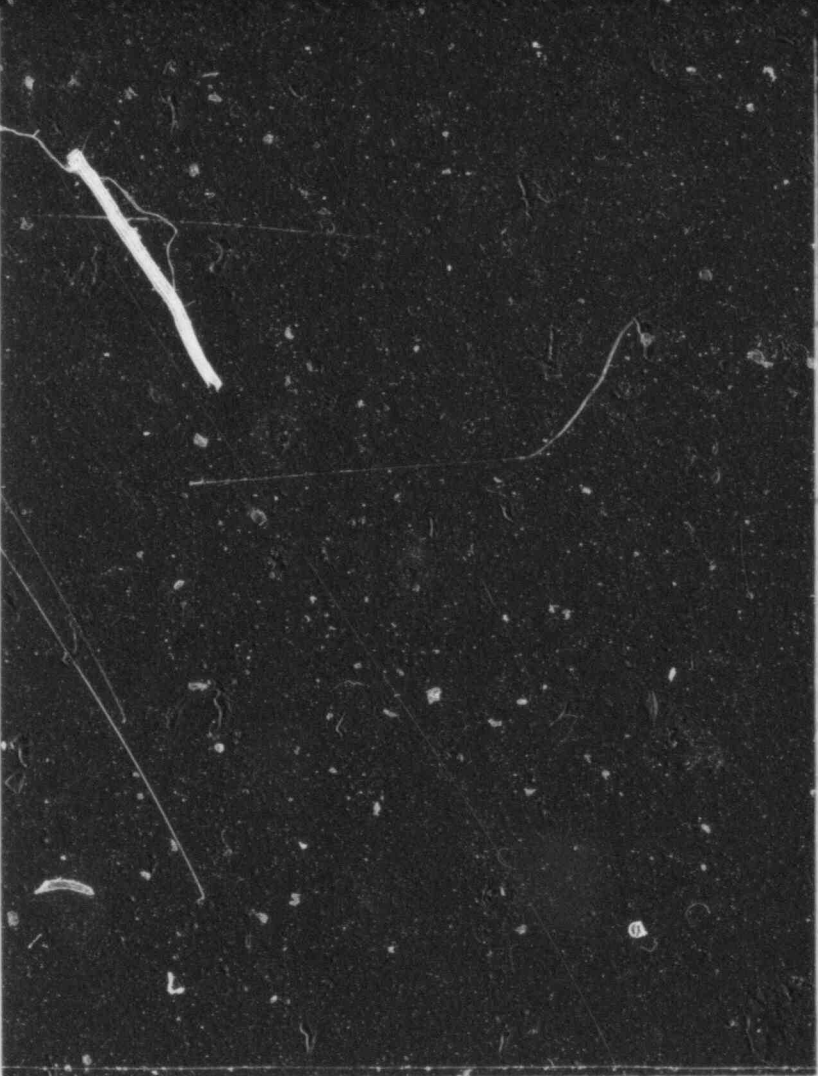
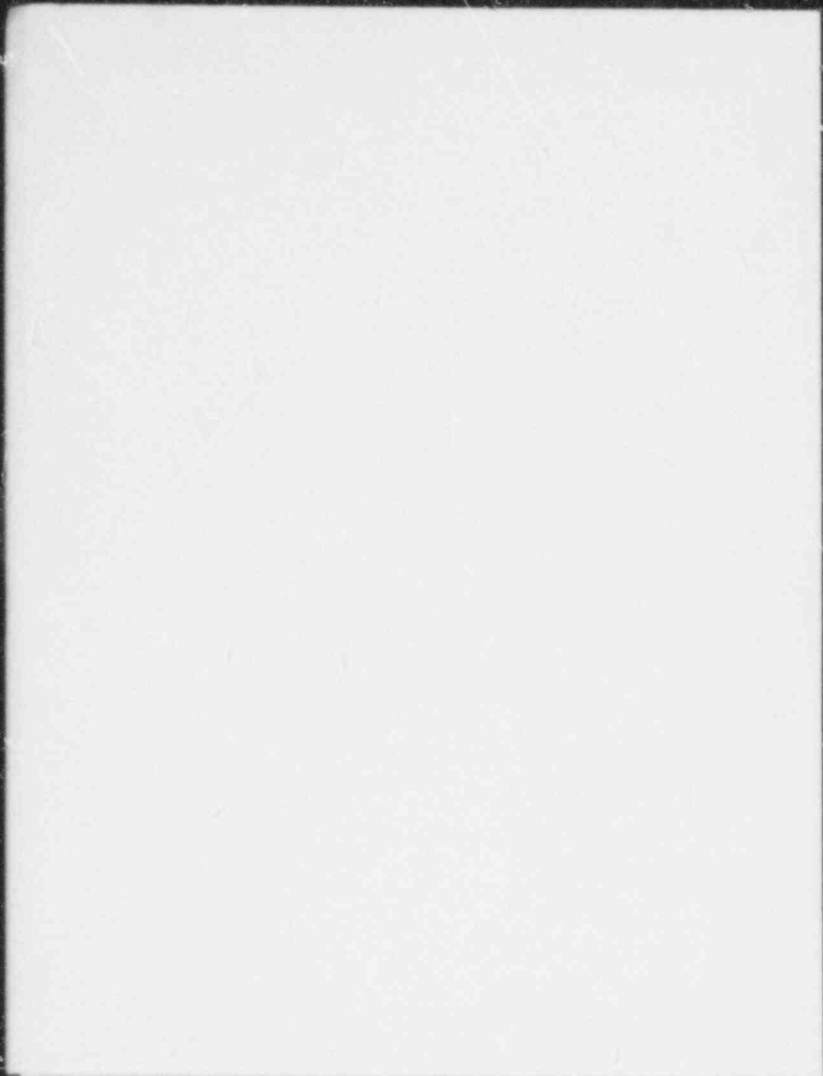
11 CHAIRMAN KEMENY: Now, you said -- are you worried
12 about any of that water entering -- being bottled or being
13 used in food processing?

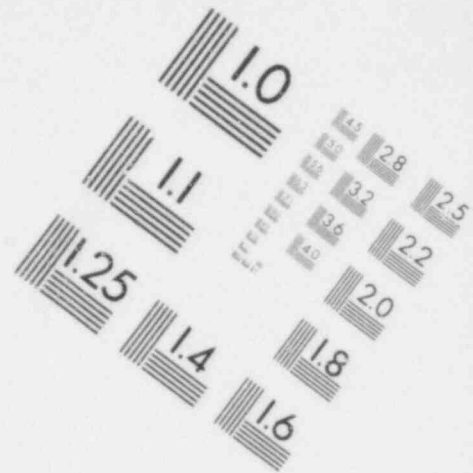
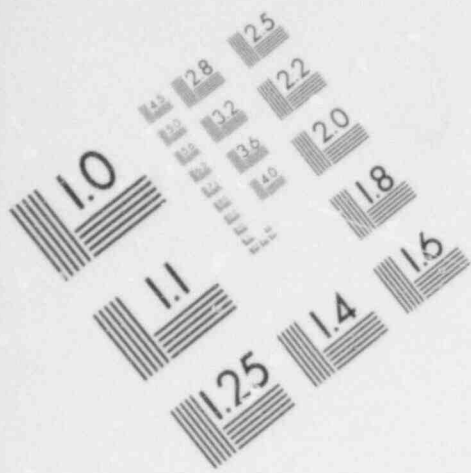
14 MR. VILLFORTH: No, I am not worried about that
15 particular situation because I think now we understand where
16 the water supply intakes are, the nature of the plants down-
17 stream, and I think we understand the magnitude of the dilu-
18 tion in the river and this really would not be a problem, is
19 my understanding.

20 CHAIRMAN KEMENY: Okay.

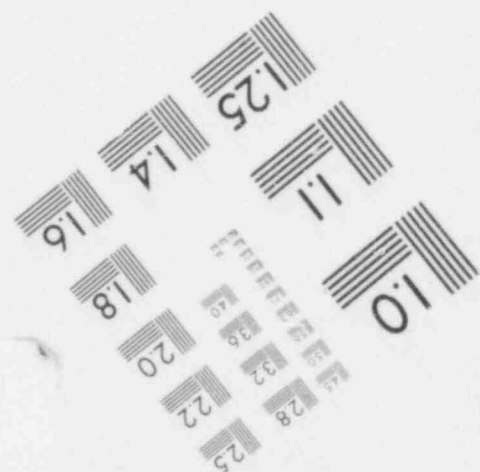
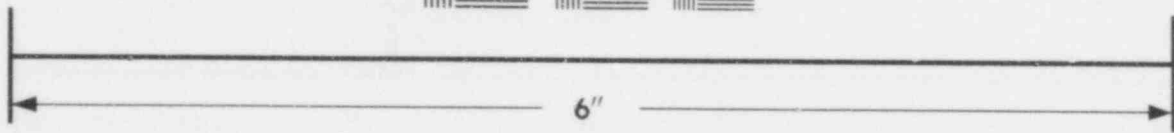
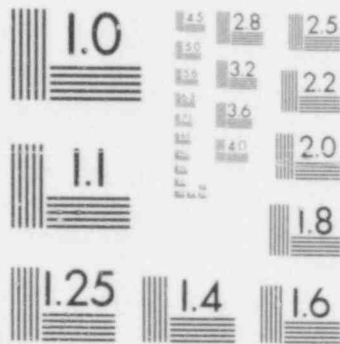
21 MR. VILLFORTH: Now, this has to be confirmed.
22 What I am telling you is handwritten over the telephone and
23 I received just before I came down there.

24 CHAIRMAN KEMENY: Could I just ask a hypothetical
25 question? Suppose your handwritten note had said, which it





**IMAGE EVALUATION
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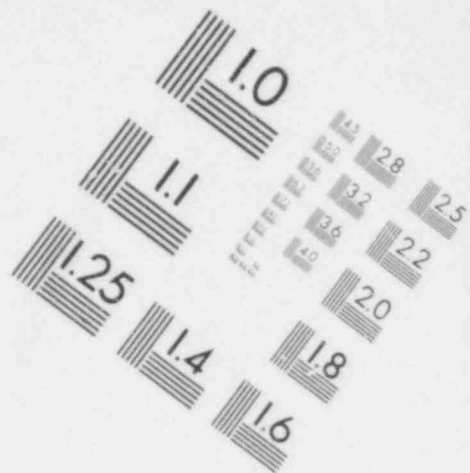
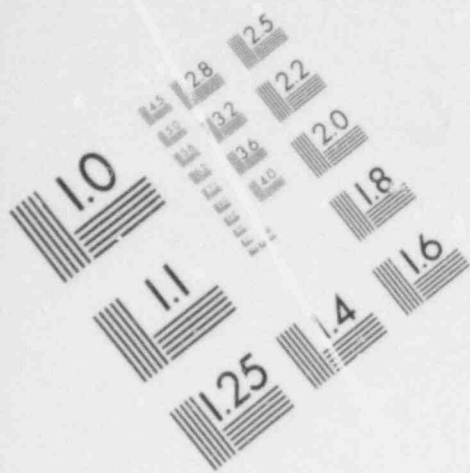
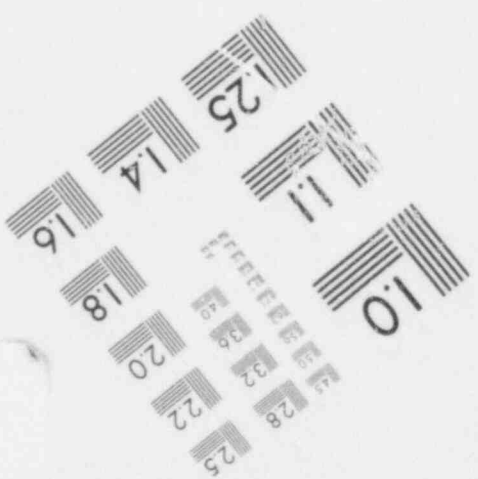
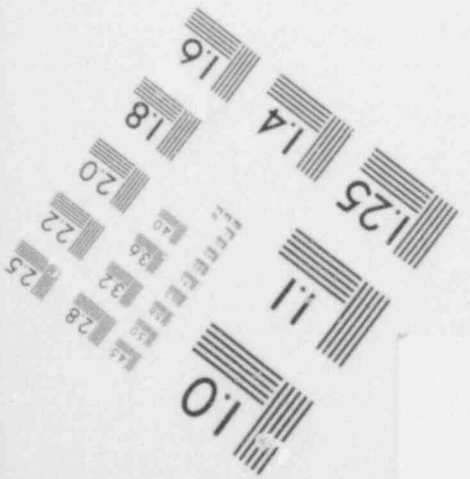
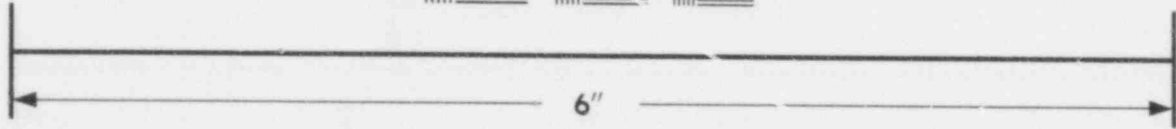
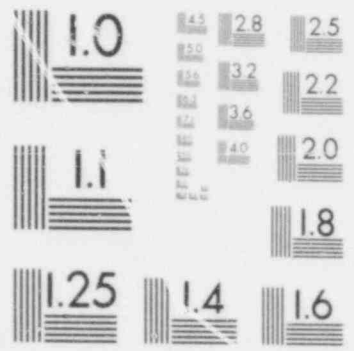


IMAGE EVALUATION
TEST TARGET (MT-3)



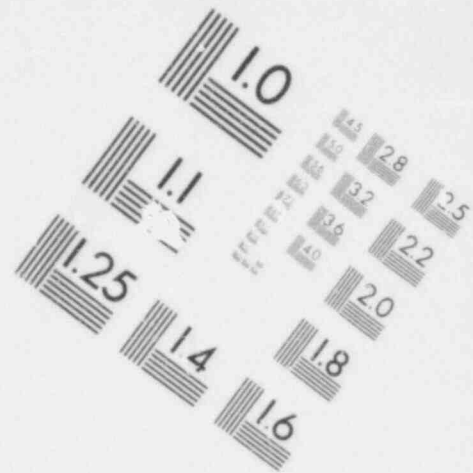
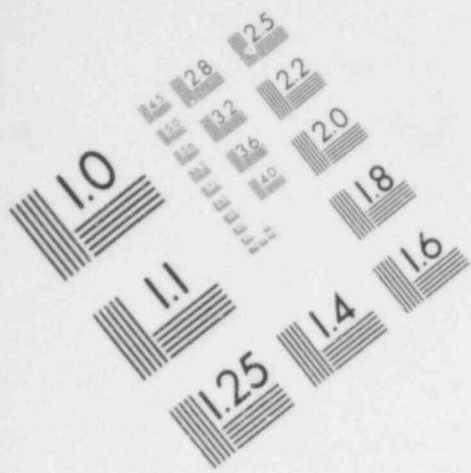
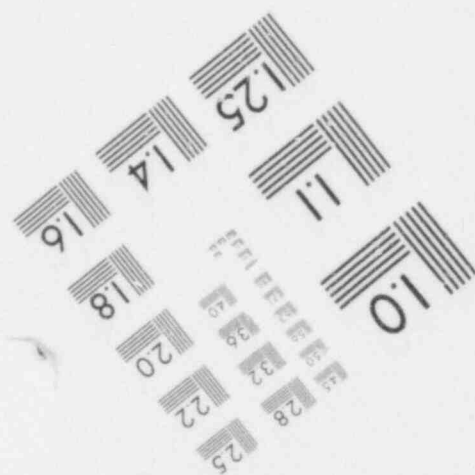
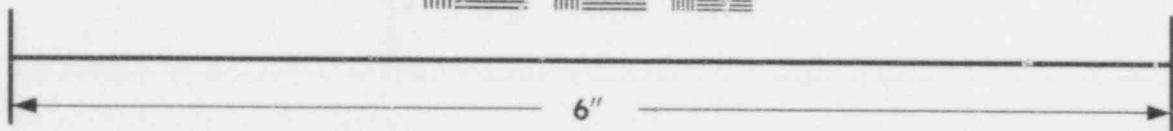
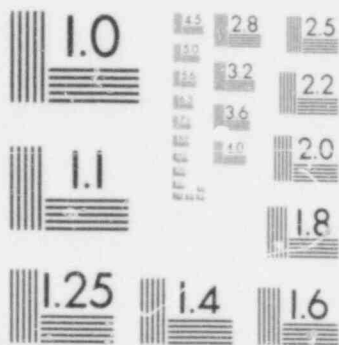


IMAGE EVALUATION
TEST TARGET (MT-3)



1 didn't, that it was 100 times the allowable amount? I mean,
2 what action would you have taken?

3 MR. VILLFORTH: Well, then we would go back and
4 look a little more closely at the dilution and try to deter-
5 mine which of the first inlets downtown -- downstream -- we
6 might want to see those samples downstream. The Environmental
7 Protection Agency does have an outfall monitor, and there are
8 other agencies that are collecting data on the river. Now,
9 this did not show up, was my understanding, as significant
10 in that monitor.

11 So if it had shown up as being significant, then
12 the question has to be, are the downstream plants -- and one
13 has some time. Let's assume we have a very large slug of
14 some large amount of activity that goes down there. Then we
15 have to make some decisions about whether the EPA will shut
16 down the water supply from a drinking standpoint or we should
17 take action as it relates to the food standpoint or the pro-
18 cessing of it or other purposes.

19 I should point out to help you, the EPA and the FDA
20 have been working on a memorandum of understanding as it
21 relates to water, drinking water, so that there will not be
22 conflicting decisionmaking taking place as it did several
23 years ago with the Duluth, Minnesota, taconite plant and the
24 asbestos fibers, where there was a difference of opinion
25 between the agencies. In an attempt to eliminate that, the

1 agencies have come together and are working in concert in
2 these matters, so I don't think that will be a problem.

3 CHAIRMAN KEMENY: Would you mind telling us what
4 that difference of opinion was? I mean, not in great detail,
5 just which -- one agency decided that it was difficult --

6 MR. VILLFORTH: Well, I think the Environmental
7 Protection Agency took action on recommending that the drink-
8 ing water supply be closed down for Duluth because of the
9 asbestos fibers when there were some bottled water plants in
10 the area. The concern was that the information on the bio-
11 logical effects of asbestos in drinking water, there were no
12 standards for this. So there was no clear decision as to what
13 level to take action or why one should take action, and if
14 one were to take action on drinking water at the levels in
15 Duluth, then FDA has some problems with some other products
16 that it regulates which involve filtration using asbestos
17 filters on, say, certain -- I believe certain beverages, some
18 of your carbonated beverages have asbestos fibers that might
19 have exceeded, that did in fact exceed the levels in the
20 Duluth drinking water.

21 This meant that one agency was forcing action which
22 could close down the plants under another agency's jurisdic-
23 tion without a clear health mandate and without the biology
24 to support it.

25 So the problem was that those sorts of unilateral

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1 decisions ought not to occur. They ought to be worked out
2 together. As a result of this and others, there is a group
3 called the Interagency Regulatory Assistance Group which came
4 about as a result of the Food and Drug Administration, the
5 Environmental Protection Agency, the Consumer Product Safety
6 Commission, and the Occupational Safety and Health Adminis-
7 tration, all of which get involved with toxic agents in one
8 form or another.

9 These four agencies, regulatory agencies, have
10 come together to work out and to prevent one agency making a
11 regulatory decision which puts the other agency in an uncom-
12 fortable bind or in which it is premature based on the radia-
13 tion biology.

14 So, first they are trying to work out collectively
15 the risks and the consequences of the agents they have and
16 then develop a more uniform posture on their regulatory
17 approach.

18 CHAIRMAN KEMENY: Before that was formed, what
19 happened? For example, would it have been possible that
20 people were told that they could not drink the water out of
21 the tap, but another agency could say, if it is the same
22 water as bottled, then it is all right to drink it?

23 MR. VILLFORTH: Yes. That is the kind of conflict-
24 ing and embarrassing decision that could occur.

25 CHAIRMAN KEMENY: I'm sorry I asked the question.

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1 MR. VILLFORTH: Not as sorry as I am, sir.

2 CHAIRMAN KEMENY: Commissioner McBride?

3 COMMISSIONER MCBRIDE: Yes. In the earlier sessions
4 of our Commission hearings, there were references to command
5 posts at the Three Mile Island and that the command post was
6 set up very shortly after the incident became known. That
7 does not jibe with the things that you have said here today,
8 at least if I understand the meaning of command post.

9 I would ask you if you would recall or us your
10 understanding of the existence of a command post and what that
11 implied.

12 MR. VILLFORTH: Well, my understanding of a command
13 post in the Washington area, if I could --

14 COMMISSIONER MCBRIDE: No, I am talking now --

15 MR. VILLFORTH: Of the site.

16 COMMISSIONER MCBRIDE: -- of the site, and where
17 the incident occurred, and where, as I understand it, the
18 action was taking place and where the information was and
19 where it was coming out.

20 MR. VILLFORTH: Okay. My understanding, which may
21 be wrong -- my understanding is, in the early days when the
22 Nuclear Regulatory Commission came together at the site, they
23 set up some trailers at the observation location, observation
24 point across from the island, that there were representatives
25 there from the State Department of Environment Resources, the

1 radiation control program, and that probably is the command
2 post that you are referring to.

3 There was also what I would call, might call, a
4 command post or maybe did call a command post at the Capital
5 City Airport. Because the IRAP teams and the EPA teams
6 were airplane dependent or helicopter dependent -- they were
7 doing aerial monitoring -- and because there was a large
8 amount of ground equipment and a need for laboratory space
9 and a place to set up camp, they took over of the hangars
10 at the Capital City Airport south of Harrisburg. That became
11 a command post for the monitors, the surveyors, the people
12 who were doing calculations.

13 As far as environmental monitoring and radiation
14 assessment, I am sure that the command post of the NRC at
15 the site, at Three Mile Island site, was more of the nuclear
16 engineering reactor status decisionmaking command post, but
17 my impression is that the monitoring command post was mustered
18 in, was conducted, at the Capital City Airport.

19 Now, separate from that, there were also little
20 command posts. We had a person sitting in Mr. Gerusky's
21 office in the Department of Environmental Resources, just to
22 be there to help out and provide a flow of information back
23 and forth. That person then would visit the Capital City
24 Airport and participate in the briefings.

25 We had a person later on assigned to Dr. McCloud's

1 office because Dr. McCloud didn't have -- as he pointed out
2 earlier, there was not a radiation competence in his organiza-
3 tion. We had a physician, a radiologist on our staff, who
4 later on went up there and spent several days with Dr. McCloud,
5 and Mr. Charles Cox, who was the on-site coordinator, parti-
6 cipated very -- had a desk in Dr. McCloud's office, or in his
7 facility.

8 So there were many subsets of command posts, and I
9 don't know if that helps to answer your question, but I don't
10 know what the command post was.

11 COMMISSIONER MCBRIDE: Yes. Well, maybe you have
12 answered. This information, for example, in monitoring, was
13 that relayed to another command post, the information that
14 was gathered?

15 MR. VILLFORTH: I don't think so.

16 COMMISSIONER MCBRIDE: What happened to that infor-
17 mation?

18 MR. VILLFORTH: I believe it was assembled, collected,
19 shared with whomever was there, and that was the end of it as
20 far as my understanding of the Department of Energy. I do
21 not believe that the Department of Energy realized or felt
22 any responsibility to call up the command post at Bechesda
23 and say, Here is the latest environmental data. I think they
24 probably assumed that that would have been done by the NRC
25 people who might have been at the briefings, who might have

1 collected the material that was xeroxed daily. But I do not
2 think -- my concern was that that material somehow did not
3 find its way down to Bethesda, which is where I was led to
4 believe was where the fountain of environmental knowledge
5 would ultimately be, and I just think it is because when the
6 Department of Energy was up there, no one explained to them
7 that they had a responsibility to do that as outlined by the
8 White House to NRC in Bethesda, and that they felt their
9 responsibility was to help Mr. Gerusky, primarily, as a result
10 of his request for help, and did an effective job in doing it.
11 But I think they felt that is the end of it.

12 I also believe the Department of Energy anticipated,
13 as soon as things got under control, to pull back. The whole
14 situation as it relates to the long term surveillance, I do
15 not think that the Department of Energy has any plans or
16 anticipates it is their role as it relates to maybe epidemio-
17 logical studies, the recovery phase of this, which may go on
18 for quite a bit of time. The IRAP portion was the emergency
19 portion, and once that emergency portion was somehow defined
20 and understood, I think the IRAP teams pulled back because
21 they had a responsibility to be prepared to respond to inci-
22 dents around the country in other locations.

23 COMMISSIONER MCBRIDE: It was the command post at
24 the hangar that was assembling the monitoring information --
25 was that information related to the possible evacuation of

1 the area?

2 MR. VILLFORTH: Related? No, I don't think so.
3 The information that I saw I don't think was necessarily
4 related to it. Well, when I -- I must say, I was not up
5 there those first three or four days when the critical portion
6 of evacuation was under -- the critical question of evacuation
7 was under consideration, and therefore I don't know whether
8 that information would have been applicable to it or not.

9 Certainly Mr. Gerusky was going to -- having his
10 own data plus that data, would be making use of that as it
11 relates to his decision up his chain of command for evacuation.

12 COMMISSIONER MCBRIDE: So really, the flow of that
13 information would have been to Mr. Gerusky?

14 MR. VILLFORTH: Yes.
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1 CHAIRMAN KEMENY: Governor Peterson.

2 COMMISSIONER PETERSON: Thank you, Mr. Chairman.

3 Mr. Villforth, I want to ask some questions about
4 evacuation, too. Of course, the reason for evacuating is to
5 protect the health of the people and one of the prime assign-
6 ments of HEW is to protect the health of the people. I was
7 wondering if at any time during this event, you had developed
8 any recommendations about whether or not the site should be
9 evacuated.

10 MR. VILLFORTH: I heard the previous testimony by
11 Dr. MacLeod, which clearly indicated to me that he had been in
12 consultation with the Bureau of Radiological Health -- excuse
13 me -- that Dr. Robbins of the National Institutes of Occupa-
14 tional Safety and Health of the Center for Disease Control had
15 been in contact with the Bureau of Radiological Health in
16 FDA about evacuation and we had either supported or concurred
17 in Dr. Robbins' recommendation to Dr. MacLeod. I don't recall
18 that. I have looked through the notes and the logs. I can't
19 find anything that would support that. I don't think that we
20 felt that the evacuation was in order. I think we were appre-
21 hensive that it might be needed. I think that we may have
22 considered, as counsel suggested earlier, a scenario, but I
23 don't recall that we ever made that recommendation.

24 COMMISSIONER PETERSON: Does Dr. Robbins report to
25 you?

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1 MR. VILLFORTH: No, sir.

2 COMMISSIONER PETERSON: Now, at one time later had
3 the responsibility for coordinating all of the federal agencies'
4 efforts dealing with the effects of radiation on the health of
5 the people. Is that right or not?

6 MR. VILLFORTH: My responsibility was to be the
7 HEW coordinator on Three Mile Island and my understanding was
8 that I had received that as a result of an assignment on the
9 first of April.

10 COMMISSIONER PETERSON: Your man who was the coordin-
11 ator on the site, did he have the responsibility only for HEW
12 agencies?

13 MR. VILLFORTH: Yes.

14 COMMISSIONER PETERSON: It wasn't for the coordina-
15 tion of the --

16 MR. VILLFORTH: No. He was HEW only and as a result
17 would have reported to me, going to the Secretary on recommen-
18 dations. I don't remember any official recommendation on
19 evacuation at this time.

20 COMMISSIONER PETERSON: Was he feeding information
21 into Harold Denton or not?

22 MR. VILLFORTH: Was our man on the site?

23 COMMISSIONER PETERSON: Yes.

24 MR. VILLFORTH: No. Mr. Cox was not feeding inform-
25 ation to Harold Denton. I think the first time we may have

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1 been in contact with Harold Denton was when the request came
2 in, I believe, Monday or Tuesday, during a press conference
3 and Harold Denton requested a physician from HEW be available.
4 Mr. Cox is not a physician and it was at that time when we
5 had Dr. Gordon Johnson, the radiologist, that I had described
6 earlier, who was sitting in Dr. MacLeod's office, available
7 to meet with Harold Denton prior to a press conference and to
8 be available if there were any questions coming up.

9 COMMISSIONER PETERSON: I was just curious how your
10 coordinator on the site would feed his information into the
11 people, the Governor's office, say, who were making the deci-
12 sion about whether or not the area be evacuated. How would
13 Cox's information get around that loop?

14 MR. VILLFORTH: They may have asked for his personal
15 opinion. I doubt it. If he was, I am sure it would have been
16 reflected in the record, because he kept meticulous records.
17 We kept a daily log, phone logs and so forth and none of this
18 -- no decision of this magnitude -- and it is a very signifi-
19 cant decision - shows up anywhere in any of our logs that I
20 could find.

21 COMMISSIONER PETERSON: So, except for the uncertain
22 -- your uncertainty about Dr. Robbins' role, you don't know
23 of any role that HEW played in advising relative to evacuation?

24 MR. VILLFORTH: No, I do not. I would say Dr.
25 Robbins' role, as I understood it, was really twofold. One is

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1 that the Secretary--as the director of the National Institutes
2 of Occupational Safety and Health. He has a specific normal
3 responsibility to provide the scientific, public health func-
4 tion to the Department of Labor, under the Occupational and
5 Health Administration, but under this situation, the Secretary
6 looked to him to be concerned about the registry of workers,
7 so that in the future we would be able to answer the question
8 were the workers excessively exposed. Was the program of
9 detection and dosimetry of the worker adequate? So, to work
10 with the Nuclear Regulatory Commission in that regard; also
11 to consider some sort of a registry. So, that was one function.

12 The memoranda that set up assignment on the first
13 day, on the 31st, also indicated that he had a broader role
14 to look for emergency preparedness of the Department, which
15 was not a clear role and not a traditional role for the direc-
16 tor of the National Institutes of Occupational Safety and
17 Health and he may, as a result of this function, have taken
18 on a role and advised Dr. MacLeod unilaterally. I don't know.
19 I do not feel that we had ever discussed this with him -- any
20 of my staff discussed it with him or that I discussed it with
21 him. I know at the time that in my person with Tom Gerusky,
22 I felt I had a pretty good understanding of what was happening
23 at the site at that time. We knew there was a xenon problem.
24 As I recall from my notes at Tom Gerusky had reported to me
25 that they felt that the dose commitment or the offsite dose

1 was probably less than 100 millirems at the early stage, the
2 maximum dose offsite, based on the patterns at that time.
3 And although that was past and the potential for something
4 happening was still there, I felt in my conversations with Mr.
5 Gerusky that I was kind of apprised more directly of what was
6 happening than, perhaps, some of the other people in the De-
7 partment.

8 COMMISSIONER PETERSON: In other words, you were
9 relying primarily on the information coming from the State of
10 Pennsylvania institutions. I understand in the Department of
11 Energy and Jim Liverman's school they have the responsibility
12 for the work of the radiation effects research foundation in
13 Hiroshima, which many people believe has got by far the most
14 data on the exposure of human beings to radiation. Was that
15 expertise brought to bear at all, do you know, on this problem?

16 MR. VILLFORTH: That expertise allows one to better
17 understand the dose response curves, the risk estimates, the
18 incident rate of cancers, breast cancers, leukemias, etcetera,
19 from the massive data that is available in Hiroshima-Nagasaki.
20 That data from that population was data from medical populations
21 that had been studied over the years, the ankylosing spondylitis
22 cases and so forth, all of that has been pulled together by a
23 variety of groups -- the United Nations Scientific Committee
24 of the Effects of Atomic Radiation, a UN based group which has
25 been in existence since the fifties, looking at risk estimates

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1 of biological effects -- the National Academy of Sciences
2 Committee --

3 COMMISSIONER PETERSON: My question is was that
4 expertise brought to bear on this TMI incident?

5 MR. VILLFORTH: The knowledge -- I can't answer your
6 question because -- the individuals who participated in that
7 study, the epidemiologists, were not brought to bear to my
8 knowledge on the TMI situation and I don't think they should
9 have because they are a different type of individual. They
10 are epidemiologists. But the knowledge that came from that
11 eventually was brought to bear in terms of the risk estimates
12 that came out of the three agency reports, the ad hoc group
13 report on dosimetry and its consequences.

14 COMMISSIONER PETERSON: Now, the DOE group that was
15 on the site on Wednesday, the 28th, was that the same group
16 that is tied in with this radiation effects research foundation?

17 MR. VILLFORTH: To the best of my knowledge, in no
18 way.

19 COMMISSIONER PETERSON: Okay. Thank you.

20 CHAIRMAN KEMENY: Dr. Marks.

21 COMMISSIONER MARKS: Mr. Villforth, I would like to
22 pursue two areas with you. First, can you tell us what the
23 scientific basis was for DHEW's recommendations regarding the
24 distribution and the use of potassium iodide?

25 MR. VILLFORTH: You are talking about at the site

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1 as opposed to the Federal Register announcement of this year.

2 COMMISSIONER MARKS: Right.

3 MR. VILLFORTH: Well, as you know, we have a re-
4 sponsibility to look at prophylactic drugs. Potassium iodide
5 is recognized as a possible -- one of the best possible pro-
6 phylactic drugs for a situation like this. We had a Federal
7 Register announcement to encourage this material to be made
8 and as you perhaps know, there is no approved new drug appli-
9 cation to manufacture this. That is, you can't buy, as I
10 understand it, a saturated solution of potassium iodide, ac-
11 cording to the specifications that were laid down in the
12 Federal Register because nobody manufactures it. Therefore,
13 faced with this kind of a situation, if you needed to admin-
14 ister it, you couldn't do it. It doesn't exist as a raw
15 chemical. The Food and Drug Administration has the authority
16 to get that material produced and more or less waive these
17 responsibilities and arrange with a pharmaceutical firm, which
18 they did, the Mallinckrodt Corporation, to produce the mater-
19 ial --

20 COMMISSIONER MARKS: I would like to step back.
21 What was the scientific basis for making the decision to make
22 the potassium iodide and ship it for distribution in Pennsyl-
23 vania?

24 MR. VILLFORTH: The scientific decision --

25 COMMISSIONER MARKS: As I understand, the decision

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1 was made on Sunday. Wasn't it? Or was it Saturday?

2 MR. VILLFORTH: The decision was made at 3 o'clock
3 in the morning of Saturday.

4 COMMISSIONER MARKS: Saturday.

5 MR. VILLFORTH: Yes.

6 COMMISSIONER MARKS: Right. Okay. Were you there
7 when it was made?

8 MR. VILLFORTH: Yes.

9 COMMISSIONER MARKS: Therefore, could you tell us
10 what the scientific basis for that decision was?

11 MR. VILLFORTH: The basis was that it appeared that
12 we may be having an iodine problem with the reactor.

13 COMMISSIONER MARKS: You may be -- and what was the --

14 MR. VILLFORTH: There were trace -- as I recall
15 from my conversation with Mr. Gerusky, there were trace levels
16 of iodine being reported in the environment, trace levels.
17 The question was are we now in a situation where this thing
18 is going to get out of control and we are just seeing the
19 very beginning of a curve. Do we need to get this material
20 on hand and that was the rationale --

21 COMMISSIONER MARKS: Did anybody check those reports
22 from Gerusky? DOE or any of the other organizations monitoring
23 the site?

24 MR. VILLFORTH: No. I assume that -- no.

25 COMMISSIONER MARKS: Do you think that was a good

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1 practice?

2 MR. VILLFORTH: I trust that what Mr. Gerusky was,
3 in fact, the composite of the experience on the site, reflect-
4 ing what was available from the other agencies that were onsite.

5 COMMISSIONER MARKS: Did you ask him what the source
6 of his information was?

7 MR. VILLFORTH: No. I don't recall that I did.

8 COMMISSIONER MARKS: What was the basis of your
9 trust?

10 MR. VILLFORTH: I trust Mr. Gerusky. I have worked
11 with him --

12 COMMISSIONER MARKS: I will ask you again as a pub-
13 lic official, what was the basis of your trust.

14 MR. VILLFORTH: Well, 15 years of working with him
15 in other areas and I trust his judgement.

16 COMMISSIONER MARKS: In retrospect, have you evalua-
17 ted the situation in terms of the evidence for the release
18 that Mr. Gerusky was reporting at the time.

19 MR. VILLFORTH: What I know now, it seems like a
20 dumb decision.

21 COMMISSIONER MARKS: No, that is not what I am asking.
22 At 3 o'clock in the morning you made a decision --

23 MR. VILLFORTH: Yes.

24 COMMISSIONER MARKS: Which had considerable import
25 and among other things led to a considerable conflict between

1 a state official and the Federal Government officials. At
2 that time you based this recommendation on a report from Mr.
3 Gerusky -- okay?

4 MR. VILLFORTH: No. I need to clarify something
5 because either I misunderstood where you were coming from or
6 you misunderstood me. The decision that I made that I am re-
7 ferring to was the decision to procure only --

8 COMMISSIONER MARKS: That is what I am talking about.

9 MR. VILLFORTH: Which, in itself, would not necessarily
10 have resulted in any conflict. There was a decision that came
11 from the Department to administer --

12 COMMISSIONER MARKS: I see. That was a separate
13 decision.

14 MR. VILLFORTH: Yes.

15 COMMISSIONER MARKS: When was that made?

16 MR. VILLFORTH: That was made, I guess, Sunday or
17 Monday by the White House or the Department. There were some
18 press releases.

19 COMMISSIONER MARKS: Do you know the basis for that
20 decision?

21 MR. VILLFORTH: I learned about it, unfortunately,
22 after it happened and how it happened, but I was not a parti-
23 cipant in that. I was quite disappointed. I felt -- and my
24 staff, who was onsite, Dr. Johnson from my staff who was in
25 Dr. MacLeod's office was very disappointed that he didn't know

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1 that this was happening, that the press statement had gotten
 2 out, that the recommendation of the Department was to adminis-
 3 ter this to the workers and to have it available, I think,
 4 within five miles or something like that was the press state-
 5 ment, when the commissioner of health had made a decision not
 6 to do this. So, that there was this conflict. Now, that de-
 7 cision came about as a result -- the decision -- the staff
 8 work was done by a team in HEW made up of the commissioner
 9 of the Food and Drug Administration, the director of the
 10 National Institutes of Health, the director of the National
 11 Cancer Institute, the surgeon-general and some others who put
 12 together a position paper and gave it to the Secretary, who
 13 gave it to the White House and out went the announcement.
 14 That is a separate problem than procuring. I will take the
 15 responsibility for procuring, not that press release.

16 COMMISSIONER MARKS: So, in other words, the group
 17 that made the decision to recommend to the Secretary to re-
 18 commend to the White House to recommend to the state level to
 19 distribute the potassium iodide and to distribute it to people --

20 MR. VILLFORTH: Yes.

21 COMMISSIONER MARKS: Was made up of the director of
 22 NCI, NIH -- who else did you say?

23 MR. VILLFORTH: The Cancer Institute, NIH, the
 24 commissioner of the Food and Drug Administration and, I believe,
 25 the director of the Center for Disease Control and the surgeon-

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1 general, himself.

2 COMMISSIONER MARKS: But you don't know the
3 scientific basis on which they made that decision?

4 MR. VILLFORTH: No. The documentation is there in
5 terms of the potential, but I don't know exactly what caused
6 it to happen. I was surprised that it occurred and my staff,
7 who was up on the site, was very disappointed with me that I
8 didn't let them know and I was equally disappointed with my
9 boss, Dr. Kennedy, the commissioner of the Food and Drug Ad-
10 ministration who hadn't let me know that he had made the
11 decision. So, we had a little communication problem internally.

12 COMMISSIONER MARKS: What I am driving at obviously
13 was, you know, we are looking for guidelines for the future.
14 In retrospect, as you look back on the situation, you said
15 that it was a dumb decision. Which decision was dumb?

16 MR. VILLFORTH: Both.

17 COMMISSIONER MARKS: Both decisions.

18 MR. VILLFORTH: My decision was dumb to procure it
19 in retrospect.

20 COMMISSIONER MARKS: Yes. I understand that.

21 MR. VILLFORTH: The decision to administer it --
22 and let me make sure we understand that -- that is to have in
23 the hands of individuals, as opposed to take -- that decision,
24 I think, was dumb on the basis that the people who knew what
25 the reactor status was, the people who were on site, were the

1 ones who should have been making that decision, now those
2 folks back here locked up in a room in downtown. You can't
3 make those frontline decisions back here in Washington when
4 things are changing so rapidly up there onsite.

5 COMMISSIONER MARKS: Well, I guess what I am having
6 trouble with right now is in view of the potential for the
7 release of the potassium iodide, even though there -- there
8 was a potential for release of I 131, wasn't there?

9 MR. VILLFORTH: Yes.

10 COMMISSIONER MARKS: And there was no potassium
11 iodide onsite.

12 MR. VILLFORTH: That is correct. Excuse me. Onsite
13 being what?

14 COMMISSIONER MARKS: Near Three Mile Island, in
15 Dauphin County.

16 CHAIRMAN KEMENY: Dr. Marks, do you mean before
17 Mr. Villforth's --

18 MR. VILLFORTH: There was none available --

19 COMMISSIONER MARKS: We even heard that there
20 wasn't even a bottle in the utility, but anyway there certainly
21 wasn't a supply to be distributed in case it was needed.

22 MR. VILLFORTH: That is correct.

23 COMMISSIONER MARKS: Why do you say your decision
24 to get it manufactured and available in case of emergency
25 was dumb?

1 MR. VILLFORTH: I think in knowing what we know
2 now, there wasn't an iodine problem. That is what I am saying.

3 COMMISSIONER MARKS: Yes. But you couldn't have
4 anticipated --

5 MR. VILLFORTH: Oh, no, no, no, no. I am saying
6 in retrospect. I look back and I say, well, it is a xenon
7 problem, not an iodine problem. All systems seemed to have
8 worked. Why did you get the stuff? I am having a hard time
9 explaining how to pay the bill, you see.

10 COMMISSIONER MARKS: I see. What is your recommen-
11 dation now with respect to potassium iodide and nuclear react-
12 or sites?

13 MR. VILLFORTH: That is a good question and that I
14 have done a little more introspection on that and I am a
15 little bit concerned that at Three Mile Island we may have set
16 a precedent, which would perhaps allow the public to think
17 that the supersaturated solution of KI could have -- or tablets,
18 whatever -- could be some sort of a panacea if there were
19 another situation at another reactor and that has to look at
20 the problem. For example, if the radioactive iodine gets in
21 the milk or food, I wouldn't think we need to worry -- in
22 general, need to worry about the potassium iodide because you
23 can stop those -- go to canned milk or do something else,
24 rather than consuming the milk. The other problem is that if
25 you are worried about inhalation, which is the then predominant

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1 mode of entry, you are only blocking the iodine, if you give
2 the tablet to the people and then somehow have them feel that
3 they are immune from radiation and go waltzing out into the
4 countryside and not worry about the other isotopes. The
5 question of getting out and getting evacuated might be cer-
6 tainly an important situation and if one can evacuate, then
7 the question of getting under cover and getting the benefit
8 of any attenuation under cover in a multi-story building, if
9 you can, would be, perhaps, preferable to the potassium iodide
10 and then the other question that has to come up in this sort
11 of an equation, I understand -- and I am not a physician --
12 but these things are not completely risk free and although
13 the risk of this material, I understand, is small, it is not
14 completely risk free. And that would have to be looked at
15 if one is looking at a population of 2,000,000 people that
16 was being thought of at the time.

17 I am concerned that we don't set a pattern here
18 that the people feel that KI is the solution and that everybody
19 ought to stockpile this and other forms of protection are not
20 considered. So, the panacea aspect is what worries me. I
21 hope it does not become a panacea.

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1 COMMISSIONER MARKS: Is there a clear understanding
2 of what procedures would be followed if we were so unfortunate
3 as to have another nuclear accident such as TMI, with respect
4 to potassium iodide?

5 MR. VILLFORTH: No, I don't think there is and I think
6 that --

7 COMMISSIONER MARKS: You still don't have one?

8 MR. VILLFORTH: No. And that is -- you know, there
9 are discussions that are taking place under the leadership of
10 the NRC; there are new re-examinations of the emergency plans
11 and as a result of TMI that is being focused on. Hopefully,
12 out of this will come a much better and a much more intelligent
13 action plan. There is a new drug application in now as a re-
14 sult of TMI. So we will have the material as a pharmaceutical,
15 which we didn't have before.

16 COMMISSIONER MARKS: And just to make sure that I
17 understand, the decision to distribute, however, as far as you
18 know, was not based on any new information with respect to an
19 increased danger of exposure to I-131 by the population?

20 MR. VILLFORTH: That is correct.

21 COMMISSIONER MARKS: Between Saturday morning and
22 Monday?

23 MR. VILLFORTH: It must have been not based -- if you
24 will allow that sentence -- it must have been not based on that
25 because I would have been the one that would have fed that group

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1 that information because I would have gotten it from all the
2 other networks and liaison people that we had, and I didn't
3 have that information to support that.

4 COMMISSIONER MARKS: Let me turn to another subject.
5 Could you just briefly tell us what types of programs for edu-
6 cation and training you have with regard to radiation safety
7 and toward whom they are directed?

8 MR. VILLFORTH: We have within the Bureau of Radio-
9 logical Health, within the confines of that area in which we
10 have a regulatory responsibility, and which our main problem
11 is medical X-ray, medical X-ray protection, our programs are
12 designed at -- educational programs are designed at three
13 levels: One, the physician. They are designed at the physi-
14 cian as the medical student and at continuing education packages.
15 We have, without getting into details, we have developed some
16 contracts for learning laboratories, film files, and so forth,
17 for teaching medical students, and also useful for continuing
18 education. Number two, in the medical area we recognize the
19 role of technology -- medical X-ray area, that the role of the
20 technologist is extremely important. So we have developed con-
21 tinuing education packages; self-assessment tests; and we are
22 working on means of developing national standards for radiologic
23 technologists, dental assistants, and so forth, working with
24 X-ray. Number three, a relatively new area, but perhaps some-
25 what related to this situation is our consumer educational

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1 effort. We recognize that in an ideal situation in medical
2 X-rays, one could have the best X-ray equipment so it doesn'
3 leak radiation excessively, the most informed physician admini-
4 strating, recommending, referring, and ordering X-rays in an
5 intelligent fashion; and the best trained technician using the
6 proper techniques, developing the film properly, positioning
7 the patient properly and, therefore, there is nothing the con-
8 sumer needs to worry about. But that is an ideal situation and
9 it just doesn't happen. We can't move fast enough. So we are
10 asking the consumer, the patient, to be a partner, to interact
11 on this. We are asking women that are being asked to have --
12 by their physician, to have an abdominal X-ray if they are preg-
13 nant to advise the referring physician. We are telling the
14 mothers and fathers who take their children in to recommend
15 gonadal shielding. And we are telling individuals who are get-
16 ting X-rays on themselves, you know, ask to have the reproductive
17 organs protected.

18 There is a series of steps that we are trying to get
19 across which we think the patient can interact with the profes-
20 sional and the technologist to bring up this level of radiation
21 protection.

22 COMMISSIONER MARKS: Would this -- I know it has not
23 been written and prepared for this purpose -- but do you think
24 the material would be useful, particularly the health profes-
25 sionally directed material, for health professionals in the

1 TMI area in dealing with the potential hazards of the accident?

2 MR. VILLFORTH: Some of it would be useful, that is,
3 the basic radiation biology portion of it, which I think helps
4 to put the risks in perspective. One of the problems we always
5 have in the medical X-ray area is, on the one hand, how do we
6 convince the patient who is getting an X-ray that if the physi-
7 cian feels that that X-ray is necessary for their well-being,
8 the risk of that X-ray is small compared to the benefit. So
9 you ought to get the X-ray. On the other hand, if someone does
10 a screening X-ray, or if the hospital routinely does admission
11 X-rays, chest X-rays, and they don't know why they are doing it
12 except that it is a policy that is ten years old, or they
13 automatically do chest X-rays in barbers and beauticians for
14 tuberculosis, we want to get rid of those old ideas because
15 from a public health standpoint if we can reduce those unnecessary
16 components of those X-rays that we all receive, those, you know,
17 270 million procedures we get each year, we could probably be
18 saving up to hundreds or maybe thousands, depending on the risk
19 model you use, deaths per year from cancers and leukemias that
20 might be attributed to medical radiation.

21 So from a public health standpoint we are concerned.
22 But we have had a hard time putting this into perspective. That
23 is, the public health consequences versus a decision an indi-
24 vidual has to make when they interact with a physician.

25 COMMISSIONER MARKS: I would like to be just a little

1 bit more specific. I may not have been specific enough. In
2 other words, we have heard testimony of the concern of both
3 health professionals, as well as pregnant women, mothers, and
4 children, and so on. This concern is centered around a good
5 deal of lack of information. What I am trying to find out --
6 and we have been told no material is available to be distribu-
7 ted to them to inform them and as you know, people say that
8 information in itself can alleviate a lot of the anxiety. The
9 material you now have available, do you think it would be use-
10 ful to distribute in this specific regard?

11 MR. VILLFORTH: It would have to be cut and pasted.
12 There are portions of that material that might serve this pur-
13 pose in terms of the radiation -- putting the radiation biology
14 and the radiation risk into perspective. I want to make sure
15 though that you appreciate the fact that if that material had
16 been out, and if every physician understood those response
17 curves in the Pennsylvania area, and anywhere else in the country,
18 as it relates to this incident, it would have done no good un-
19 less the people understood what the dose was so that they could
20 relate the two. So equally important to understanding the
21 concepts of dose response risk, and so forth, is an under-
22 standing of what the dose was. And that did not come out until
23 those three groups of individuals, ad hoc individuals, in these
24 three agencies, the NRC, EPA and HEW put out the report.

25 COMMISSIONER MARKS: Right. That we understand, that

sg 6 1 there are both sides. Are you doing anything with Mr. Gerusky
2 about getting this information out?

3 MR. VILL'ORTH: No, we are not.

4 COMMISSIONER MARKS: Has he asked you?

5 MR. VILLFORTH: No.

6 COMMISSIONER MARKS: Thank you.

7 CHAIRMAN KEMENY: Are there further questions? Yes,
8 Governor Babbitt?

9 COMMISSIONER BABBITT: What was the bill for the pot-
10 assium iodide?

11 MR. VILLFORTH: Somewhere between 300 and 600 thousand.

12 COMMISSIONER BABBITT: Thank you.

13 CHAIRMAN KEMENY: As long as the Governor asked his
14 question, I can't resist asking is the story true that you got
15 one airplane from the Air Force but they wouldn't give you a
16 second one?

17 MR. VILLFORTH: I believe they got the support that
18 they wanted from the military to get the materials airlifted in
19 and the pieces of materials -- the droppers had to come sepa-
20 rately from the bottles, and the labels had to be brought, and
21 it all had to be sort of orchestrated. I think things worked
22 pretty well. The Air Force, the military cooperated in the
23 first shipment. Maybe there were some problems, I was not too
24 aware. But I think things happened all right. The point, I
25 think, that is amazing from our colleagues in the Bureau of

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1 Drugs that arranged this, is that the decision was made at three
2 o'clock on Saturday and the first shipment arrived that night
3 of a pharmaceutical that has no new drug application and basi-
4 cally doesn't exist. So I mean it just was an incredible feat.

5 CHAIRMAN KEMENY: But is it not true that you had to
6 chart this through private planes?

7 MR. VILLFORTH: There were problems of the airport
8 was closed for a while and we had problems with food samples
9 getting in and out. Someone flew a private airplane for food
10 samples but I don't remember that as it relates to the potassium
11 iodide. It may be. I just don't recall it. I know there were
12 some difficulties with weather and the airport just being closed.

13 CHAIRMAN KEMENY: Any other questions?

14 COMMISSIONER MARKS: Do we get copies of the materials?

15 CHAIRMAN KEMENY: Which materials, Dr. Marks?

16 COMMISSIONER MARKS: The educational material that
17 Mr. Villforth's Bureau has developed?

18 MR. VILLFORTH: May I make a suggestion? Certainly,
19 whatever we have is available. May I just offer the suggestion
20 that perhaps Fabrercan, who is familiar with this material, and
21 who as a clinician has perhaps used the material, and who as a
22 staff member might be in a better position to screen this and
23 work with you and work with us and we could be more precise in
24 exactly what might be helpful to you --

25 COMMISSIONER MARKS: Thanks very much.

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CHAIRMAN KEMENY: Dr. Fabrercan, are you willing to do a show and tell on this at some point?

DR. FABRERCAN: Yes.

CHAIRMAN KEMENY: Thank you, Mr. Villforth. Would Counsel please call the next two witnesses?

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1 CHAIRMAN KEMENY: Just for the information of the
2 Commission, these are our final witnesses today.

3 Whereupon,

4 LAKE H. BARRETT

5 HAROLD COLLINS

6 were called as witnesses and, after being first duly sworn,
7 were examined and testified as follows:

8 CHAIRMAN KEMENY: Mr. Barrett, would you state for
9 the record your full name and the position you currently
10 occupy?

11 MR. BARRETT: My name is Lake H. Barrett. I am
12 section leader in the Environmental Evaluation Branch in the
13 Office of Nuclear Reactor Regulation, the staff of the
14 Commission.

15 CHAIRMAN KEMENY: And Mr. Collins?

16 MR. COLLINS: Harold E. Collins, assistant director
17 for emergency preparedness, Office of State Programs, NRC.

18 CHAIRMAN KEMENY: Counsel?

19 MR. HARVEY: Mr. Barrett, you are with the NRC in
20 the Environmental Evaluation Branch. Is that correct?

21 MR. BARRETT: That's correct.

22 MR. HARVEY: Could you give us a general description
23 of your duties in that branch?

24 MR. BARRETT: I'm section leader of a group of six
25 professionals that handle basically radiological issues for

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1 operating reactor plants -- that's operating power reactor
2 plants. We do evaluations of radway systems, which are sys-
3 tems to control the radioactive material within the reactor
4 plant, systems that are also used in the event of an accident
5 to contain that radioactivity, also systems that are used for
6 normal radioactivity control, radiation protection for the
7 workers within the plant, and the impact of normal amounts of
8 radioactivity that are released during normal plant operations,
9 and also accident scenarios that might occur.

10 MR. HARVEY: During the Three Mile Island incident,
11 what function were you performing within the NRC?

12 MR. BARRETT: I was a member of the technical staff
13 that was in the what we call incident response center, which
14 was the NRC headquarters command post in Bethesda, Maryland.
15 My duties were to handle many of the radiological problems
16 that would come up, assess the radiological information as it
17 would come in, trying to grasp an understanding of what was
18 happening at Three Mile Island to brief senior management
19 officials.

20 MR. HARVEY: Would it be fair to say that you would
21 take information concerning the state of the system at the
22 reactor site and perform mathematical calculations to calculate
23 the exposure off site?

24 MR. BARRETT: We would do that, using our judgement
25 as to what was occurring.

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LA 3 1 MR. HARVEY: Now, could you describe the state of
2 the system as you understood it early Friday morning?

3 MR. BARRETT: Early would be before 9:00?

4 MR. HARVEY: Before 9:00.

5 MR. BARRETT: We thought it was basically stable.
6 We thought core cooling had been pretty well established at
7 that time, although with a damaged core. We knew we had
8 substantial amounts of radioactive material in the primary
9 coolant system. This is the cooling water that surrounds the
10 reactor core. We were having sporadic releases of radioactivity
11 from the facility that we had theorized these were caused by
12 various small leaks in what we call the make-up and let-down
13 system and waste gas systems. These are systems that will
14 take some of the primary coolant out of the big containment --
15 that's the big dome building with the four-foot thick concrete
16 walls -- into the auxiliary building. Some of these systems
17 had small leaks. The radioactivity was getting into the air
18 in the auxiliary building and it was being carried through
19 the filters and out to the environment.

20 MR. HARVEY: Was there any particular part of the
21 system that you were concerned about on Friday morning before
22 9:00?

23 MR. BARRETT: Well, through the whole scenario, since
24 the beginning, we were concerned with the capability of what
25 we call the waste gas decay tanks to receive the noncondensable

LA 4 1 and radioactive noble gases from the primary coolant. As the
2 primary coolant is taken out of the reactor, it is injected
3 back in again. And this we call make-up and let-down system.
4 And part of that system contains a tank called the make-up
5 tank, where any dissolved gases that are dissolved in the
6 primary coolant at high pressures will evolve out under lower
7 pressures. And this was happening during the accident. As
8 water was let down, the highly radioactive gases would
9 accumulate in this tank and had to be vented someplace.
10 Under normal conditions, these gases are passed to what we
11 call a waste gas compressor, which is like an air compressor,
12 and it compresses the gas into a big storage tank. And as long
13 as there's capacity in that tank and room to put it, the
14 radioactive material is held in those tanks, and there was no
15 immediate concern.

16 We were concerned about how full tanks were and did
17 they have capacity to keep receiving these gases as the let-
18 down continued.

19 MR. HARVEY: So do I understand correctly that you
20 were concerned that these waste gas decay tanks would become
21 filled, resulting in a continuous emission of radioactive gas
22 into the atmosphere?

23 MR. BARRETT: That's correct.

24 MR. HARVEY: And the emission would be unfiltered.

25 MR. BARRETT: Yes, if the tanks became overfilled,

LA 5 1 the relief valves on these tanks would lift and it would go
2 to a vent header, which would bypass the filters that filter
3 all the air that exits the building.

4 MR. HARVEY: So you were watching this system to
5 see if these tanks were filled. Is that a fair statement?

6 MR. BARRETT: That is correct.

7 MR. HARVEY: As of 9:00, did you receive information
8 about those tanks?

9 MR. BARRETT: Yes, we did. We'd always put questions
10 out to the site to find out the status of these tanks and
11 would get sometimes conflicting information back, but never
12 anything that was concise. At a little before 9:00, one of
13 our inspection and enforcement people that had the direct
14 phone lines to the TMI control room called me over and told
15 me he had received the message from the site that those tanks
16 were now full and that the relief valves on those tanks had
17 lifted and that gases were passing from the make-up tank to
18 a waste gas decay tank where they could not go and the gases
19 were being vented from the plant.

20 MR. HARVEY: In an unfiltered emission, continuous.

21 MR. BARRETT: In an unfiltered emission, and it was
22 something that looked like it was going to continue for some
23 time period.

24 MR. HARVEY: What did you do when you got that infor-
25 mation?

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LA 6

1 MR. BARRETT: Well, I was standing, you know, next
2 to the fellow. Just to get an order of magnitude feel for
3 what that would be as far as any off site dose consequences,
4 we made a very quick calculation, just a mass transport calcu-
5 lation based on some primary coolant concentration data we
6 had from the previous evening. And we calculated a hypothe-
7 tical release rate of about 60 curies per second of noble
8 gases.

9 MR. HARVEY: So, in effect, you took that informa-
10 tion and made a calculation as to what the off site radiation
11 dose would be?

12 MR. BARRETT: No, we made a calculation as to what
13 the release rate of radioactive material would be. I did not
14 have an off site dose calculation for that.

15 MR. HARVEY: All right. What did you do with that
16 information?

17 MR. BARRETT: Well, as I was standing there, on my
18 right shoulder was John Davies, who was the director of the
19 Office of Inspection and Enforcement. And he was part of the
20 other half of the incident response center, which was the
21 management side. I talked to him and briefed him many times
22 during the course of events. And he asked me if that was
23 anything significant. And I said, yeah, I felt it was. And
24 he said, come on to the management side -- I think it's called
25 the executive management team, something like that -- to go

LA 7 1 over the and brief the people that were in the room. So I
2 went with into the other room and started to talk to the
3 people in there.

4 MR. HARVEY: Well, what did you tell them?

5 MR. BARRETT: Okay, what I told them was that infor-
6 mation that I had just received from the I&E people who were
7 in direct phone line to the site was that those tanks were now
8 full and that we had a continuing release occurring and that
9 the release would be about 60 curies per second.

10 MR. HARVEY: What was the reaction when you told
11 them? Well, first of all, who was in the room at that time?

12 MR. BARRETT: Okay, Lee Gossick, who was the
13 executive director of operations, Harold Denton, director of
14 reactor regulation, John Davies, who is director of the Office
15 of Inspection and Enforcement.

16 MR. HARVEY: So this was NRC senior management.

17 MR. BARRETT: These are NRC senior management people.

18 MR. HARVEY: Mr. Collins was there as well?

19 MR. BARRETT: Mr. Collins was there. Victor Stello
20 was there, and several other people I just can't recall right
21 now. I think Mr. Bouchard from public affairs was there.

22 MR. HARVEY: Okay, so you told them that the waste
23 gas decay tanks had filled and that there was a release rate
24 of 63 curies per second?

25 MR. BARRETT: That's what our calculations showed it

LA 8

1 could be.

2 MR. HARVEY: What was the reaction when you said
3 that?

4 MR. BARRETT: I don't think there was a lot of
5 reaction, because I don't think anyone really knew what 60
6 some curies per second would mean. We did initiate a discus-
7 sion with some of the systems people about maintaining con-
8 tainment integrity. I think I made some statements like, we
9 have the containment there and we should be very careful about
10 bringing the radioactivity out of containment through these
11 let-down systems, and were there any other alternatives to
12 operating a let-down system, some way we could keep that gas
13 inside containment, which was, you know, a very substantial
14 building, and it was a negative pressure. It wouldn't get out
15 to the environment.

16 MR. HARVEY: Were you asked to translate that calcu-
17 lation into an off site dose?

18 MR. BARRETT: Yes, the systems discussion was ter-
19 minated when somebody asked, what's the off site dose. And I
20 had not calculated an off site dose. But I was able to give a
21 projection as to what that might be. We had previously, the
22 day before, made various calculations and we had had some
23 estimates at that time that we had about a curie per second
24 release rate with an off site dose of about 20 millirem per
25 hour at a distance not unlike the site boundary distance that

LA 9 1 we had -- the distance that would correspond to a location
2 that was equivalent to the site boundary dose -- that's where
3 members of the public would be -- for that morning. So it
4 was just a straight ratio, a ratio ending up at least now
5 60 times higher. So just multiplying that, 60 times 20 would
6 be 1200 millirem per hour. So we had a hypothetical situation
7 that we could have a 1200 millirem per hour dose off site,
8 though there is considerable uncertainty with this. It was
9 just an extremely rough calculation, made right on the spot
10 as I stood there.

11 MR. HARVEY: What was the reaction when you came up
12 with that calculation?

13 MR. BARRETT: I think I remember a statement like,
14 my gosh, that's over the Environmental Protection Agency's
15 what we call PAGs, which are protective action guidelines.
16 Those are guidelines that are established for taking off site
17 actions. The lower bound is one r. This was a dose rate of
18 1200 mr per hour, which is equivalent to 1.2 r per hour.

19 MR. HARVEY: So your calculation had resulted in a
20 reading of 1200 millirem per hour at that point and you related
21 that to the group, and people became concerned about its
22 effect with respect to protective action guides. Is that a
23 fair statement?

24 MR. BARRETT: I think so.

25 MR. HARVEY: What happened next?

LA 10 1

MR. BARRETT: Well, very quickly, a report came in -- someone reported on the telephone -- somebody in the room stated that they had a telephone report that the licensee was reporting a reading of 1200 mr per hour. It was the exact same number that I had just said from a calculational viewpoint.

MR. HARVEY: So your theoretical prediction was just verified, it appeared, by a telephone report right from the site.

MR. BARRETT: Yes.

MR. HARVEY: The exact same number.

MR. BARRETT: It was the exact same number, and it was within maybe 10 or 15 seconds from my first 1200 millirem per hour prediction.

MR. HARVEY: What was the reaction in the operations center at that point when that information came in?

MR. BARRETT: My perception was that that had a very profound impact on the whole center, that we had shifted from sort of a lack of information on things and nothing really firm to, well, here is a real piece of meaty information that has significance to it. I believe it took a hypothetical situation and rather carved it in stone and set it on a mountain with a burning bush behind it. There was considerable concern. I remember a few people making some statements that that was over the protective action guidelines, that action

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LA 11 1 should be taken.

2 MR. HARVEY: We've got to bite the bullet.

3 MR. BARRETT: Bite the bullet, better safe than sorry,
4 if we're going to err, let us err on the side of public safety.

5 MR. HARVEY: People began to talk about evacuation
6 at that point, did they not?

7 MR. BARRETT: People immediately started talking
8 about evacuation. Well, moving people and evacuation to me
9 are one and the same. But, yes.

10 MR. HARVEY: What happened with respect to what you
11 were doing at that point?

12 MR. BARRETT: I was kind of hearing all that. I was
13 rather surprised we jumped that quickly, but I guess I was
14 still rather surprised that we were getting this report of
15 1200 so quickly from what I thought was a hypothetical situa-
16 tion to having this being the real situation.

17 MR. HARVEY: So this was an extraordinary coincidence
18 that precipitated an evacuation discussion among the senior
19 management in the operations center. Is that a fair statement?

20 MR. BARRETT: I believe so.

21 MR. HARVEY: Were you asked to perform any other
22 calculations or give any other recommendations, once that
23 coincidence was brought to the fore?

24 MR. BARRETT: The scenario would go Mr. Denton and
25 Mr. Case, I think -- Mr. Case is the deputy director of the

LA 12 1 Office of Nuclear Reactor Regulation -- made a few statements
2 about need to be moving people, need to take action. There was
3 no negative statements from anybody in the management group
4 that I could see.

5 MR. HARVEY: Were you asked for a recommendation?

6 MR. BARRETT: Yeah, Mr. Denton, after a few state-
7 ments of, you know, we ought to do something, asked me how
8 far should people be moved.

9 MR. HARVEY: What was your response?

10 MR. BARRETT: I told him I could not recommend any
11 specific distance to move people.

12 MR. HARVEY: And what did he say?

13 MR. BARRETT: He said a second time, tell me how
14 far we should move people.

15 MR. HARVEY: Was he saying that more emphatically?

16 MR. BARRETT: Yes.

17 MR. HARVEY: And what did you say?

18 MR. BARRETT: A lot of things went through my mind
19 at that point. One thing I had not seen, the Pennsylvania
20 plan for evacuation or access to any of those things. So I
21 wondered what he knew that I didn't know, which was considerable,
22 in my opinion, because he had access to a lot of the systems
23 information as far as the core cooling status and that sort of
24 thing. So I let that sink for a millisecond or so and I
25 decided, well, if I'm going to have to give a number and I'm

A 13 1 not getting any help from anyplace else, I'm going to give a
2 conservative number. And I put a qualifier on that, at least
3 I felt I had sufficiently, that if we're going to have to have
4 a number, I'd make it high. And that was the first I said to
5 him, you know, I'm not sure, I can't tell you for sure, but
6 ten miles is more than enough, ten miles is plenty, or some-
7 thing like that.

8 MR. HARVEY: And what happened then?

9 MR. BARRETT: Then there was discussion about the
10 pros and cons of ten miles. Against the ten miles, it was
11 said that ten miles included seven parts of Harrisburg. And
12 someone made a counter proposal of five miles. And then there
13 was discussion about the five miles. I guess one way I
14 visualized it was ten miles had opposition, five miles had
15 none. So without any opposition to the five miles, there was
16 talking back and forth. I don't recall any specific motions
17 or anything like that, but it seemed to be generally agreed
18 upon, in my opinion anyway, that the ENT had reached a con-
19 sensus that people were to be moved out -- a recommendation,
20 now, would go to the state that people would be moved out
21 to a distance of five miles.

22 MR. HARVEY: And as a result of that, Mr. Collins
23 was asked to call the state and make a recommendation for
24 evacuation?

25 MR. BARRETT: That's my interpretation of it.

LA 14

1 MR. HARVEY: All right. Now, did you -- Since the
2 information that started all this was the waste gas decay
3 tanks were filled -- is that correct?

4 MR. BARRETT: That's what was reported to us from
5 the unit two control room.

6 MR. HARVEY: Did you subsequently discover that that
7 information was wrong?

8 MR. BARRETT: Oh, yeah, it was about a half hour
9 after the phone call was made. I went back and received a
10 phone call from the site and things weren't -- information
11 wasn't jiving. The 1200 millirem per hour dose rate was a
12 local dose rate right over the containment, not an off site
13 location. And the relief valve that had lifted was not a
14 waste gas decay tank relief valve, but another relief valve
15 from another tank, called the make-up tank.

16 MR. HARVEY: If you had known that when you were
17 making your original calculations, would you have been as
18 concerned?

19 MR. BARRETT: No, if I'd known either of those two
20 facts, that would have -- there would not have been the concern
21 that prevailed in the EMT.

22 MR. HARVEY: Thank you.

23 Should I go to Mr. Collins?

24 CHAIRMAN KEMENY: Go on to Mr. Collins.

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EENWOOD 1 MR. HARVEY: Mr. Collins, what is your official
27 2 position again, just for the record?

3 MR. COLLINS: I am the Assistant Director for
4 Emergency Preparedness in the Office of State Programs, Nuclear
5 Regulatory Commission.

6 MR. HARVEY: And how long have you been involved
7 with emergency planning in the Nuclear Regulatory Commission
8 or its predecessor, the Atomic Energy Commission?

9 MR. COLLINS: Ten years.

10 MR. HARVEY: Are you involved in the review of
11 state plans that are submitted to the NRC for concurrence?

12 MR. COLLINS: Yes, I am.

13 MR. HARVEY: Do you have any idea whether the
14 State of Pennsylvania has, or the Commonwealth of Pennsylvania
15 has submitted a plan for concurrence?

16 MR. COLLINS: They did not formally submit a plan
17 to us for concurrence. Back in 1975, I believe it was the
18 lieutenant-governor of the state at that time did send us
19 some draft documents which we reviewed in the month of May,
20 I think it was, and we sent a letter back to the lieutenant-
21 governor with our evaluation of those draft documents which
22 essentially was they make a nice start, but we don't think
23 they meet our guidelines standards.

24 MR. HARVEY: Did they ever resubmit the plan?

25 MR. COLLINS: They did not to the best of my

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1 knowledge. We may have gotten pieces of draft material
 2 through the side door, but we really did not see anything
 3 of substance, at least in our office until about December
 4 of last year when we got a copy of the then existing emergency
 5 plan for the state for these kinds of accidents through the
 6 side door.

7 One of our staff people acquired this from an
 8 official of the state, but the state did not send us a letter,
 9 to the best of my knowledge, saying, "Here is our plan. We
 10 would like you to review it and concur in it or tell us what
 11 you think about it."

12 MR. HARVEY: So that the State of Pennsylvania at
 13 the time of the Three Mile Island incident did not have an
 14 NRC concurred plan. Is that correct?

15 MR. COLLINS: That is correct.

16 MR. HARVEY: Were you in the operations center
 17 on Friday during the period of time that Mr. Barrett has
 18 described to us?

19 MR. COLLINS: Yes. I don't think we both arrived
 20 at the same time, but we were both there during the period
 21 of time that he was just talking about.

22 MR. HARVEY: Could you describe the atmosphere of
 23 the operations center early Friday morning?

24 MR. COLLINS: Well, how early Friday morning?

25 MR. HARVEY: Say before 9 o'clock?

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1 MR. COLLINS: Before 9 o'clock there was not much
2 going on between 7 and 8, just, it was reasonably routine.
3 I think about 8 between the period 8 and 9 a.m., we started
4 to hear about the, I like to characterize it as sort of a
5 percolations coming from a tea kettle, the burping of gas and
6 so forth from the Three Mile Island station. We started to
7 hear reports that things were starting to emanate from that
8 facility, more than they had been emanating on previous
9 days.

10 MR. HARVEY: Was it certain where these emanations
11 were coming from or these emissions?

12 MR. COLLINS: Well, it wasn't entirely clear to me
13 where they were coming from. It might have been clear to
14 other people who had more direct access to the information
15 that was coming from the site, but I think in general the
16 feeling was that there were, and I think this is a fair and
17 true statement, that there were radioactive emissions coming
18 from the facility from more than one point, and in other
19 words, there were points where these emissions were occurring
20 which were more important than other parts, but nevertheless
21 there was radioactivity emanating from a lot of different
22 points, and I think people were a little bit confused in the
23 operations center, at least some of the management people
24 as to precisely where all these points were and exactly what
25 all these different readings that they were getting meant.

1 I think that is a fair characterization, at least
2 in my mind.

3 MR. HARVEY: All right, and when the 1.2 rems
4 reading that Mr. Barrett referred to came in, did that change
5 the atmosphere of the operations center?

6 MR. COLLINS: Yes, I would say at that point the
7 atmosphere changed. It turned from sort of a routine operation
8 into what I think in my deposition I characterized as an
9 atmosphere of significant apprehension.

10 MR. HARVEY: Would it be a fair statement to say
11 that at that point when the 1.2 rems figure came in, and
12 the information that the waste gas decay tanks were filled
13 that the senior management discussions appeared to focus
14 on the idea that the people at the site did not seem to have
15 a handle on what was happening in the plant?

16 MR. COLLINS: Yes, I think that seemed to me to be
17 a pervasive mood in the management part of the center which
18 some of us called "the bullpen."

19 I think that is fair.

20 MR. HARVEY: So that you had a situation where
21 there was some uncertainty about where these releases were
22 coming from and where these readings were coming from on the
23 one hand and on the other hand when the 1.2 rems release
24 comes in, there is a general uncertainty about whether the
25 people at the site are really managing the accident in the

1 right way. Is that a fair statement?

2 MR. COLLINS: Yes, it is. I think there was
3 uncertainty in the operations center as to precisely what was
4 going on at the facility and the question was being raised
5 in the minds of many as to whether or not those people up
6 there would do the right thing at the right time, if it had
7 to be done.

8 MR. HARVEY: Was any attempt made to contact the
9 site to confirm the 1.2 rems release?

10 MR. COLLINS: I don't know if there was. Perhaps
11 Mr. Barrett could answer that, but I am sure that phone calls
12 were made concerning that reading, but I have no direct
13 knowledge of that.

14 MR. HARVEY: Were phone calls made to the site
15 to confirm various readings while you were there on Friday
16 morning?

17 MR. COLLINS: I don't really recall hearing. I was
18 not privy to the actual conversations of the people that
19 were working our radiological desk to the site; so whether
20 or not they were calling back when they heard about this
21 1220 milliroentgen per hour reading or not I have no idea,
22 but I would assume that that kind of follow-up was going
23 on, but as I say, perhaps Mr. Barrett knows.

24 MR. HARVEY: Was it your impression from being
25 in the site on Friday morning that attempts to confirm

1 information coming from the site were generally unsuccessful
2 or unsatisfactory?

3 MR. COLLINS: They sure were in my mind.

4 MR. HARVEY: Did Mr. Denton use the word "morass"
5 for example, in referring to the problems of confirming
6 information at the site?

7 MR. COLLINS: Yes, Mr. Denton made that statement.
8 I think it was about 11 o'clock Friday morning when he was,
9 I believe, talking to the Chairman, Dr. Hendry in which he
10 said something to the effect that when Dr. Hendry asked him,
11 you know, why can't we seem to get better information out of
12 this place up there and so forth and so on, Mr. Denton said,
13 "We have got a lot of people up there, Dr. Hendry, but they
14 just seem to go up there and fall in a morass, and we never
15 hear from them again."

16 So, I think that what that indicated to me, at
17 least, was that the primary problem here was an information
18 flow problem and a communications problem. I think the
19 communications setup all the way through, right up to the
20 state level, to the facility, down to Washington, the whole
21 communications thing had really broken down and was overloaded.

22 There was information getting through, but the
23 system was overloaded.

24 MR. HARVEY: Is it fair to say that that really
25 was the motivation for the evacuation decision at 9 o'clock

1 or so, that you had releases coming out of the plant that
2 really were having difficulty confirming the releases; there
3 was an information flow problem; there was a problem in
4 contacting NRC people on the site; and there was a general
5 feeling that the people at the plant just did not seem to have
6 a handle on the problem and could not be expected to do the
7 right thing at the right time?

8 MR. COLLINS: I certainly think that that idea that
9 you have just expressed, the uncertainty factor which we could
10 sum it up as certainly, at least from what I could see,
11 caused the management people in that site to opt for making
12 a recommendation for precautionary evacuation. I would like
13 to make that clear.

14 The decision to make a recommendation for evacuation
15 was not necessarily based on any real perceived need for such
16 an evacuation, and I want to be careful how I say this because
17 I want to get the right thought across. It was done
18 because there was uncertainty as to what might happen later
19 on that morning with respect to those radiological releases,
20 poor information coming in; would the releases get bigger;
21 how long were they going on?

22 A lot of those questions were very, very vague in the
23 minds of some. So, I think the decision was an opting for
24 precautionary evacuation, and as Mr. Barrett said just a few
25 moments ago, it was a sort of a, we had better be safe than

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1 sorry type of situation.

2 MR. HARVEY: As a result, you were instructed to
3 call the state to recommend evacuation?

4 MR. COLLINS: I was.

5 MR. HARVEY: And what did you recommend when you
6 called Colonel Henderson?

7 MR. COLLINS: All right. I would like to start this
8 off by saying that Mr. Barrett made some statements here
9 concerning the distances, 5 and 10 miles and so forth. The
10 discussion that I remember hearing concerning these distances
11 is generally compatible with what he has just told you,
12 except that I don't remember anybody in that center coming
13 down on a recommendation for 5, 10, 15 or 20. It was all
14 vague.

15 I called Colonel Oran Henderson, the Director of
16 PEMA, and the first thing I asked him was "What have you heard,
17 Oran?" And he said that he told me he had heard about this
18 1200 milliroentgen per hour release or I asked him that, and
19 he said, "Yes," he had heard about it, and I said, "What have
20 you been told to do?" and he said, "Nothing, right now."
21 And so then I said to him as best I can recollect, "It is the
22 opinion of the management people in this NRC operations center
23 that you should start thinking about evacuation, and it is
24 the recommendation of these people that you start evacuating
25 people out in the direction of the plume," and he said to me,

1 "Yes," and I said, "Do you know where the plume is going?"
2 And he said, "Yes, I think I do now; I was given some
3 erroneous information before. Someone had told me it was
4 blowing down the Susquehanna, and now, it was going in a
5 northerly direction," and I said, "You have two or three
6 towns up there," and he said, "Yes," and so I said, "It is our
7 recommendation that you evacuate people in the direction of
8 the plume out to 10 miles."

9 He came back to me, and he said, right there on the
10 same conversation, "I will start with 5 miles," and I said,
11 "That is your prerogative, but you should look to 10 miles."

12 He thanked me, and I told him I would get back to
13 him with any further information that I had. I made it clear
14 to him that this was a recommendation coming from the
15 management people in the NRC center at that time, which it
16 was.

17 MR. HARVEY: One final question, Mr. Collins. You
18 mentioned the uncertainty and the difficulty in verifying
19 and obtaining information from the operations center and
20 elsewhere. Could you comment on your thought on how that
21 information problem caused management of the accident to shift
22 from level to level?

23 MR. COLLINS: Yes. As best as I can characterize it
24 in a few words, in all the emergency planning piece of
25 business that I have been involved in in the agency for nearly

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1 a decade, there never was, in any of the state government
2 emergency plans or local government emergency plans any
3 real definitive role spelled out for the Nuclear Regulatory
4 Commission as to exactly, precisely what it was going to do.

5 There was a manual chapter in the NRC Manual which
6 told about how the operations center would be manned and so
7 forth, and so on, but it never was really clear in emergency
8 plans what the NRC or the Commission itself, when I say the
9 Commission, the body of five collegial men, what they would
10 do and what their role would be. As I saw it, the
11 Metropolitan Edison folks had a responsibility to call the
12 state and local authorities when they saw that something
13 was going amiss. This is the way the emergency plans are
14 currently set up, and this is the way they are supposed to
15 work, and they are, also, supposed to call the NRC Region 1
16 Office, and for them it is in King of Prussia, Pennsylvania.

17 Well, the NRC Region 1 Office responded right away
18 with some inspectors and so forth, and the state was starting
19 to get cranked up for whatever they were going to do, and then
20 I think, because the communications were breaking down, and
21 the information was not coming back to the NRC operations
22 center in Bethesda, this started to cause some concern, and
23 naturally the management of the operations center at Bethesda
24 started to get more involved in, I won't say running the show,
25 but they seemed to be getting more involved in the activity

1 concerning the whole matter, and then when the 1200 milli-
2 roentgen per hour release was reported, which Mr. Barrett
3 talked about, I think at that point it was within an hour
4 after I called Colonel Henderson that it had escalated to the
5 level of the Commission itself.

6 The Chairman started getting involved. The other
7 Commissioners were starting to get involved, and we all know
8 how all that came out, but it just seemed, you know, from
9 Wednesday to Friday that the whole matter just escalated up,
10 until finally it got to the President of the United States
11 himself, and that is what wound up with Mr. Denton being
12 sent as the President's personal representative, up there to
13 Three Mile Island to try to lend some semblance of order and
14 discipline to the whole operation.

15 So, that is the way I saw it happening, and I think
16 it was all because of information, communication flow problems,
17 and there may have been some political considerations as well,
18 but I am not competent to do anything more than speculate
19 on those.

20 MR. HARVEY: Thank you. I have no further questions,
21 Mr. Chairman.

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GREENWOOD

1 CHAIRMAN KEMENY: Mr. Barrett, first of all, we are
2 very grateful to you for your extremely frank description of
3 that famous incident.

4 I just had one question, and tried to summarize it
5 so I understand it clearly. When that phone call came in
6 that there actually was 1200 milliroentgen per hour release,
7 did anyone ask then where that measurement had been taken?

8 MR. BARRETT: You are referring to the reported
9 1200, not the --

10 CHAIRMAN KEMENY: Yes, not your calculated one, but
11 the reported one.

12 MR. BARRETT: I don't know. That phone, that
13 message came in on the phones in the management side, and
14 someone, whoever answered that phone was one of the management
15 people, and I don't know if he ever asked them what the
16 location was or not or if it was in the original message.
17 Whoever spoke that number, it was right in the context of the
18 off-site dose numbers that we are all talking about. I do
19 remember he did not say that it was not the off-site location.
20 That was the only subject of discussion. So, it was assumed
21 to be that.

22 I don't know if anyone, if he, whoever it was who
23 said that, did check it out. We checked it out within a
24 matter of minutes, okay, and it turned out not to be true,
25 but that was after a decision that had been made and

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1 Mr. Collins had made his call.

2 CHAIRMAN KEMENY: Yes. So, therefore, in effect,
3 from your own testimony, and again, I said that it was
4 extremely frank, you were given some wrong information. You
5 made the calculation of an off-site dose which happened to come
6 out to 1200 millirems per hour, and then in came an actual
7 report of 1200 millirems per hour which you later found out
8 was from a quite different source, and it was not an off-site
9 number at all. So, it was comparing apples and oranges. There
10 was that horrible coincidence of the same number coming in
11 that had nothing whatsoever to do with your calculations that
12 led to the evacuation recommendation. Is that a fair state-
13 ment?

14 MR. BARRETT: That is a fair statement.

15 CHAIRMAN KEMENY: Thank you.

16 Professor Pigford?

17 COMMISSIONER PIGFORD: You said that looking at it
18 historically when the number of 1200 millirem per hour appeared,
19 them evacuation was suggested because of the EPA Protective
20 Action guidelines of 1 rem. Is that correct?

21 MR. BARRETT: That statement was made.

22 COMMISSIONER PIGFORD: Please tell me how you go
23 from 1200 millirems per hour to this decision of 1 rem on a
24 guideline?

25 MR. BARRETT: I did not make that statement. I can

1 only surmise what the person who said that would mean, how
2 he was thinking. I did not say anything about --

3 COMMISSIONER PIGFORD: I wonder if you can explain
4 the logic to me because you are giving us a dose rate,
5 1200 millirems per hour, and the Protective Action Guide
6 says nothing about a dose rate?

7 MR. BARRETT: That is right.

8 COMMISSIONER PIGFORD: I am trying to find what
9 is the logic of comparing one number with the second?

10 MR. BARRETT: Since I did not do that comparison,
11 I don't think -- I can only speculate as to what the person
12 was thinking who said that. I think what he was thinking,
13 it would not take very long to get to 1 rem with a 1200 mr
14 per hour dose rate.

15 COMMISSIONER PIGFORD: I see. There is no policy
16 of NRC that when you have 1200 millirems per hour that then
17 is going to exceed the Protective Action Guide or equal to
18 it. Is that right?

19 MR. BARRETT: There is none to my knowledge, but
20 I am not an expert in emergency planning.

21 COMMISSIONER PIGFORD: Mr. Collins, do you know
22 the answer to that?

23 MR. COLLINS: No, I think Mr. Barrett's -- the NRC
24 accepts the Environmental Protection Agency's Protective
25 Action Guides of 1 to 5 rem whole body and 5 to 25 rems

1 thyroid.

2 I think Mr. Barrett's answer is a correct one.

3 The individual that, and I don't know who it was that
4 probably made that statement, was doing precisely what he
5 said. He was running through his mind and saying that 1200
6 milliroentgens per hour, that is 1.2 r per hour, and therefore
7 the lower level of the EPA Protective Action Guide is one hour,
8 and as Mr. Barrett said, it is not going to take very long.
9 It is going to take something on the order of 50 minutes
10 before that, if there is a person standing in that area, before
11 they arrive at a dose of 1 rem, whole body.

12 I think that is --

13 COMMISSIONER PIGFORD: And if one assumes that the
14 person will be standing in the area 10 hours, and if the
15 release continues, then you should take that action at
16 120 millirems per hour. Is that correct?

17 MR. COLLINS: If one was going to -- I don't quite
18 understand that one, again.

19 COMMISSIONER PIGFORD: If one were going to stand
20 in that, not be evacuated but would remain in that zone for
21 10 hours and be exposed to 120 millirems per hour, they
22 would, also, be at, exceed the Protective Action Guidelines.
23 Is that correct?

24 MR. COLLINS: Yes, that would happen in about
25 eight hours, eight to nine hours.

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1 MR. BARRETT: May I add that I think that is very
2 hypothetical. Wind directions would shift. We had very
3 unfavorable meteorology at that time, that it is not an apple
4 and an apple. I think it is an apple and an orange.

5 COMMISSIONER PIGFORD: So, you had some data at that
6 time on the stability of the wind?

7 MR. BARRETT: Oh, yes.

8 COMMISSIONER PIGFORD: And the frequency of the
9 wind direction?

10 MR. BARRETT: It was about as bad a wind as we
11 could have, nice and gentle, blowing right toward what we
12 called "the North Gate" in the Northeast Shore.

13 COMMISSIONER PIGFORD: Did you have any information
14 at this time as to whether this release was of short duration
15 or was expected to continue?

16 MR. BARRETT: Our theory was that it was the
17 relief valves on the waste gas decay tanks stuck open, and
18 that was going to continue as long as the letdown continued.
19 So, it was going to be a continuous release.

20 COMMISSIONER PIGFORD: Why was that your theory?

21 MR. BARRETT: Because that is what we were told
22 from the control room, that the relief valves were stuck
23 open.

24 COMMISSIONER PIGFORD: Do you happen to know who
25 told you that?

1 MR. BARRETT: I don't know myself, but I know
2 there is a message form in our records on this that has this
3 recorded because it recorded in our King of Prussia Office.
4 I am sure you could go back through and find who that
5 individual was.

6 COMMISSIONER PIGFORD: It is your understanding
7 then that the release occurred by open relief valves on the
8 waste gas decay tank? Was it your understanding that these
9 relief valves opened because of excessive pressure?

10 MR. BARRETT: Yes, because the tanks were filled
11 to capacity, and they could hold no more.

12 COMMISSIONER PIGFORD: Now, do you know of
13 testimony by Mr. Floyd of GPU that on same day he opened the
14 valve and caused the release to occur?

15 MR. BARRETT: I have not read Mr. Floyd's
16 testimony. I have heard about Mr. Floyd's testimony, and
17 what I think he is referring to is opening of the valve on
18 the make-up tank to transfer the gases to the waste gas
19 decay tanks. There were leaks between the make-up tank and
20 the waste gas decay tanks. I think what he meant was he
21 intentionally vented the make-up tank to return water to that
22 tank, and when he did that he knew he was going to cause
23 an increased release, but it was a different --

24 COMMISSIONER PIGFORD: And it caused the relief
25 valve to open as a result of what he did?

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1 MR. BARRETT: No, it is a different thing. He was
2 transferring gas to the waste gas decay tank. In reality the
3 tank was not full, okay, and there was room in the tank.
4 However, there were leaks in the header, the piping between
5 the make-up tank and the waste gas decay tanks. So, he knew
6 when he made the decision to open that valve to vent that
7 there would be an increased release, but he did not, there
8 was not, and he knew there would not be a lifting of the
9 relief valves on the waste gas decay tanks, because in
10 reality --

11 COMMISSIONER PIGFORD: Mr. Barrett, is that a
12 different release than the one we are talking about to you?

13 MR. BARRETT: Yes.

14 COMMISSIONER PIGFORD: I see. That occurred, also?

15 MR. BARRETT: Yes.

16 COMMISSIONER PIGFORD: Later or earlier?

17 MR. BARRETT: Earlier, but that was the release
18 that got confused. Okay, what happened was there was a
19 lifting of the relief valve on the make-up tank. This, in
20 itself, caused an increase in airborne effluents, and then
21 additionally, Mr. Floyd opened the vent valve on the make-up
22 tank, and that, also, created an increase in release rates.

23 COMMISSIONER PIGFORD: About how far apart were
24 these in time?

25 MR. BARRETT: They were occurring between like --

1 I can refer to my notes, if you like, about 4 o'clock,
2 4 in the morning and 8 o'clock or so.

3 COMMISSIONER PIGFORD: So that the time that Floyd
4 opened the vent was about 8 o'clock. Is that correct?

5 MR. BARRETT: It was venting around 8 o'clock. It
6 takes time.

7 COMMISSIONER PIGFORD: All right. However, the
8 release you are talking about through the open relief valves
9 occurred about when?

10 MR. BARRETT: Well, the relief valves opened
11 earlier. You know, I think that relief valve opened around
12 4.

13 COMMISSIONER PIGFORD: And you believe the release
14 occurred at that time?

15 MR. BARRETT: I am afraid we are on different wave-
16 lengths. The information I had in instant response center
17 was the waste gas decay tank relief valves are open. That
18 was not true at all. It was a bad message.

19 COMMISSIONER PIGFORD: Oh, I see. That was not --
20 in hindsight then, that was not the source of the release?
21 Is that right?

22 MR. BARRETT: No, the waste gas decay tank relief
23 valves, to our knowledge, never opened at all. It was just
24 a bad message.

25 COMMISSIONER PIGFORD: Then what was the source of

1 the release?

2 MR. BARRETT: The actual source of the release
3 was probably two things. The biggest source was probably
4 Mr. Floyd venting the make-up tank to the waste gas decay
5 tanks, and the reason radioactivity got out to the
6 environment was there were leaks in the piping between those
7 two tanks. Additionally, there was probably an earlier
8 release when the relief valve on the make-up tank opened.

9 COMMISSIONER PIGFORD: Now, which one of these
10 two releases was the source that resulted in the measurement
11 of 1200 millirems per hour, the helicopter?

12 MR. BARRETT: Probably the venting of the make-up
13 tank.

14 COMMISSIONER PIGFORD: By Mr. Floyd?

15 MR. BARRETT: By Mr. Floyd, though the two of them
16 could have been additive, because it would take some time,
17 because what happens when the relief valve on the make-up
18 tank opens, it directs the water and the water in the
19 radioactivity to another tank called the bleed tank, and that
20 tank probably had its relief valve open, venting to another
21 relief valve header. So, it is a cumulative thing that the
22 releases would not be just for a few seconds and stop. They
23 would go up, peak and come down. So, it was an accumulation
24 of the two.

25 COMMISSIONER PIGFORD: From what you know now, is it

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1 correct that Mr. Floyd could have cut down that release
2 whenever he wanted to by closing the valve?

3 MR. BARRETT: It is my --

4 COMMISSIONER PIGFORD: Not to say stop it, cut it
5 down?

6 MR. BARRETT: In my opinion, he could have deferred
7 the release. He made a decision to restore water. Here is
8 what happened. The relief valve on the make-up tank opened,
9 releasing the water from the make-up tank which caused him
10 to have a different letdown mode. He could no longer use
11 the charging pumps to take water from the make-up tank. He
12 had to direct it from a big storage tank which is not a
13 preferable mode of operation. My understanding was he tried
14 to pump water back into the make-up tank with transfer pumps
15 but could not because of the excessive pressure in the
16 make-up tank.

17 So, he chose to vent the make-up tank to get rid
18 of this excess gas, so he could put water back in there.
19 Sooner or later he would probably have had to have done that
20 anyway.

21 So, --

22 COMMISSIONER PIGFORD: Is it your understanding
23 that after he started the release by opening that valve, he
24 could have, shortly thereafter closed that valve, if he had
25 wanted to?

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1 MR. BARRETT: He could have closed the valve and
2 stopped that release, but then he could not have used his
3 normal charging system which had other safety implications
4 to it.

5 COMMISSIONER PIGFORD: He would have had to later
6 on do something about the continued built-up pressure?

7 MR. BARRETT: I think his concern was more of using
8 the water that he had in the large safety tanks. He was
9 trying to chose, probably the lesser of the evils in his
10 opinion.

11 COMMISSIONER PIGFORD: So, from what you know now,
12 was it proper to assume that this was necessarily a
13 continuous release corresponding to an airborne dose rate
14 of 1200 millirems per hour?

15 MR. BARRETT: In my opinion, the facts of the
16 situation was, it was not a continuous release, in my opinion.

1 COMMISSIONER PIGFORD: Now, with regard to your cal-
2 culations, I can see the logic of what you have done. You have
3 told us that you start with the usual rule of thumb that one
4 curie of cobalt 60 will give us a radiation level of one r per
5 hour; and you have an experimental measurement of the actual
6 dose rate from a one milliliter sample, yes?

7 MR. BARRETT: That is -- we got that information on
8 Thursday night.

9 COMMISSIONER PIGFORD: Yes?

10 MR. BARRETT: And that is what I used to know what
11 the activity was.

12 COMMISSIONER PIGFORD: And you have stated that ex-
13 periment was one hundred millirems, yes?

14 MR. BARRETT: The information was reported to us from
15 the site, that was the readings from the sample.

16 COMMISSIONER PIGFORD: That is .1 rems, yes?

17 MR. BARRETT: .1 rem.

18 COMMISSIONER PIGFORD: And you have then concluded
19 that that corresponds to an equivalent of one hundred thousand
20 millicuries of cobalt 60 per milliliter, is that correct?

21 MR. BARRETT: For the one milliliter.

22 COMMISSIONER PIGFORD: That corresponds in a one mil-
23 lilitr to one hundred curies of cobalt?

24 MR. BARRETT: I am not familiar --

25 COMMISSIONER PIGFORD: One thousand milliliters is a

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1 thousand curies, is that correct?

2 MR. BARRETT: No, no, microcuries.

3 COMMISSIONER PIGFORD: I am sorry, your testimony
4 says millicuries.

5 MR. BARRETT: I corrected that. That says microcuries.
6 I went through it. The court stenographer didn't understand
7 microcuries and wrote them all as millicuries. As I went
8 through them I believe that I penned in ink all the milli's to
9 micro's. If I missed one I apologize.

10 COMMISSIONER PIGFORD: I can't find any place that
11 is corrected in my copy.

12 MR. BARRETT: Well, do you have the signed version
13 that has been penned in ink?

14 MR. HARVEY: It came in yesterday afternoon.

15 COMMISSIONER PIGFORD: Thank you. Then you finally
16 compared -- and you stated you calculated a dose rate at the
17 north gate, which you calculated to be 1,200 millirems per
18 hour. Can you tell me what the actual dose rate at the north
19 gate was corresponding to the helicopter measurement of 1,200
20 milligrams per hour?

21 MR. BARRETT: At that time, which was -- when we had
22 the information between eight and nine o'clock, the real dose
23 at the north gate was probably just a few millirems per hour.
24 What had happened was the wind had basically stopped blowing in
25 that direction. We had practically a flat calm and what had

3
1 happened the radioactivity sort of pocketed up over the build-
2 dings and that was what the helicopter was reading. So the true
3 dose at the north gate was a few millirems. I believe there
4 are some survey data somewhere that shows that.

5 COMMISSIONER PIGFORD: So you used as a basis for
6 your own calculations an earlier measurement of 20 millirems
7 per hour and which you state corresponds to one curie per second
8 release?

9 MR. BARRETT: Yes.

10 COMMISSIONER PIGFORD: What was the source of -- how
11 did you know it was one curie per second release?

12 MR. BARRETT: Okay. I am concerned, I am afraid that
13 you might have things out of sequence. You know, at the time
14 what I first initially said here was what we knew at that time.
15 Okay. We did not know that it was only a few millirems at the
16 north gate. Now, I will answer your question. When I was
17 asked at that time what were the off site doses, what we had done
18 the previous day, we were trying to estimate what the releases
19 were and we had an off site reading of 20 millirem per hour and
20 we asked our meteorologist to give us a chi over q, that is a
21 meteorological dispersion constant, for that location, for that
22 time. And he did. We then calculated a curie release of about
23 one curie per second.

24 Now, that was the wind conditions for that time and
25 Friday morning were about the same. I mean you could ratio

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1 the distances, that it would be as great a ratio. Now, I did
2 not know that the wind would stop, that the reading was over
3 the site, et cetera, et cetera.

4 COMMISSIONER PIGFORD: Did you ask the Met Ed people
5 what was the condition of the vent tank, as to whether the
6 relief valves had opened or not?

7 MR. BARRETT: We were always asking those questions,
8 all the time. We did not -- when I was told to go to the
9 management side, you know, I told basically what happened, like
10 I just said, I did not tell them no, let us go back and try to
11 call back and verify, et cetera. There was no verification of
12 that.

13 COMMISSIONER PIGFORD: Then I will try to wind this
14 up this way. Assuming the relief valves had opened, which is
15 what you were calculating, then I suppose the source of the
16 radioactive gas would be the accumulated gas within that tank
17 which would come out. Is that right?

18 MR. BARRETT: Plus what was entering through the let
19 down. The 60 curie per second was a steady state calculation.
20 We would have had about 60 curies a second of noble gas evol-
21 ving off the continuing let down. We were continually brin-
22 ging radioactivity out of the containment via the let down.

23 COMMISSIONER PIGFORD: Now, if the release valve was
24 open, one of the sources would be radioactive gas that had al-
25 ready accumulated in that vent system in the tank. Is that

5
1 correct?

2 MR. BARRETT: No, that would basically stay there.
3 What would happen, you would have a steady state situation and
4 the valve would open up around 100 PSI and the gas would just
5 stay there. The only gas that would be leaving would be the
6 gas that you 'are putting in. You know, it would be a constant
7 mass system.

8 COMMISSIONER PIGFORD: Mr. Barrett, you have also men-
9 tioned the fact that the iodine charcoal filters were retaining
10 the iodine at the other places when the gas would go through
11 the filters before getting to the atmosphere. You pointed out
12 that that would not occur if this particular relief valve had
13 vented.

14 MR. BARRETT: That is correct.

15 COMMISSIONER PIGFORD: The filters would be bypassed.

16 MR. BARRETT: That is correct.

17 COMMISSIONER PIGFORD: Now, have you assessed the
18 condition of the filters?

19 MR. BARRETT: We have done a lot of work on the fil-
20 ters since --

21 COMMISSIONER PIGFORD: Were those filters in proper
22 condition?

23 MR. BARRETT: The filters could have been better. The
24 filters were removing I think some of the last numbers I saw,
25 90 percent of the gross quantity of radioiodine. They were

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1 performing a very beneficial service by converting a lot of the
2 iodine from -- I am going to have to explain a little bit of
3 iodine chemistry I am afraid -- there is one form of iodine cal-
4 led elemental iodine --

5 COMMISSIONER PIGFORD: I think we -- just tell us
6 were the filters in proper condition.

7 MR. BARRETT: The filters could have been better.
8 They were very effective in mitigating the consequences --

9 COMMISSIONER PIGFORD: Did they meet the NRC's speci-
10 fications?

11 MR. BARRETT: As far as I know, okay, yes, they met
12 the NRC's specifications.

13 COMMISSIONER PIGFORD: Was there any indication they
14 were near the breakthrough point?

15 MR. BARRETT: Yes.

16 COMMISSIONER PIGFORD: And still they met the NRC's
17 specifications?

18 MR. BARRETT: I am going to have -- you know, you
19 ask a specific -- all right, the filters we are talking about,
20 you are generally concerned about are the auxiliary building
21 filters --

22 COMMISSIONER PIGFORD: Yes.

23 MR. BARRETT: Okay. The auxiliary building filters
24 had no NRC specifications for charcoal, the ability for the char-
25 coal to retain the iodine. The specifications to me mean the

7
1 technical specifications for that plant, that license. We only
2 had technical specifications on charcoal filters if they are
3 filters that are designated as what we call engineered safety
4 feature filter systems. Ten auxiliary building filters were
5 not engineered safety feature filter systems so consequently
6 they had no tech specs.

7 COMMISSIONER PIGFORD: I see. Then was the actual
8 removal efficiency on those below what is specified for other
9 filters when you do have a safety spec on them?

10 MR. BARRETT: Yes. We thought those filters should
11 have functioned better than they did.

12 COMMISSIONER PIGFORD: Can you be more precise? You
13 said they were removing 90 percent. What do you normally ex-
14 pect?

15 MR. BARRETT: We would expect -- our normal technical
16 assumptions for that kind of a filter would be 99 percent re-
17 moval.

18 COMMISSIONER PIGFORD: I see.

19 MR. BARRETT: They were removing 90.

20 COMMISSIONER PIGFORD: This let through ten times
21 more elemental iodine than your safety specified filters would
22 allow. Is that right?

23 MR. BARRETT: No, that is probably not right. That is
24 why I wanted to tell you about elemental iodine. For elemental
25 iodine they would probably be -- I don't know the numbers, but

sg 8 1 I would say in excess of 99 percent removal of the elemental
2 iodine. The organic iodine that they were letting through, what
3 they were really doing was, elemental iodine would enter into
4 the filters and organic also; they would filter out the elemen-
5 tal quite efficiently but they would let some of the organic
6 pass. The overall effect on the environment was we had very
7 little elemental iodine going out into the environment. Most
8 of it was organic. And the organic iodine was not settled
9 down on the grass, and can become part of the grass pathway,
10 that is why we never saw much iodine in the milk. We did see
11 it in the air sometimes but it stayed in the air. That was
12 very important as far as mitigating the consequences of the
13 iodine that was coming out.

14 COMMISSIONER PIGFORD: A moment ago you said that
15 those filters allowed 99 percent of the iodine to pass through.

16 MR. BARRETT: I am sorry. 99 percent of the iodine
17 was removed.

18 COMMISSIONER PIGFORD: I am sorry, I misstated it.
19 It allowed ten percent of the iodine to pass through. Is that
20 correct?

21 MR. BARRETT: That is some of the numbers that I have
22 seen. That was a test for organic iodine, not a test for
23 elemental iodine. So overall, they probably moved in excess
24 of 90.

25 COMMISSIONER PIGFORD: I see. Thank you.

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1 CHAIRMAN KEMENY: Professor Marrett?

2 COMMISSIONER MARRETT: Mr. Collins, I am interested
3 in what is going on at NRC now with reference to emergency
4 preparedness. I understand that there are some discussions
5 underway about revising NRC's role. Are you involved in any
6 of the plans or discussions?

7 MR. COLLINS: Well, yes, I am. There are a lot of
8 things going on in emergency preparedness, I can assure you,
9 both from the standpoint of what the agency itself should do
10 in the future in the event of another accident like this, and
11 in my particular area there is a great deal of effort going
12 on in trying to get a radiological emergency response plan
13 put in place in some 20-odd states that need these kinds of
14 plans that have operating reactors and states sitting next
15 door to those states where the reactor is on a border.

16 When I say putting the plans in place, I mean plans
17 that would measure up to our current voluntary guideline
18 standards, because we do not have any legal clout to require
19 these kinds of plans. So there is a lot of activity going on.

20 COMMISSIONER MARRETT: You do -- I believe the
21 voluntary program allows you to concur in plans. Is that the
22 procedure --

23 MR. COLLINS: That is the word we use, review and
24 concur, right.

25 COMMISSIONER MARRETT: Have there been any instances

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1 in which you would not concur in plans? Have any come in
2 that you felt so inadequate you would not concur?

3 MR. COLLINS: Well, the way the concurrence process
4 is set up right now and the way it has been set up since we
5 granted out first concurrence, back, I believe it was, in
6 1976 -- 1977, I guess it was -- generally, the way it happens
7 is like this. A state will get a visit from one of ten
8 regional advisory committees that we have set up around the
9 country, and sitting on these committees are the other seven
10 federal agencies that are involved in this business with us.
11 Now there are six federal agencies because of the new Federal
12 Emergency Management Agency, FEMA, which came into being on
13 July 17, so that reduced the number of agencies that were
14 involved in this effort from eight to six within NRC's in the
15 lead agency role.

16 Typically, what happens is the state will come in
17 with, generally, draft documents at the first go-around, or
18 will give this committee draft documents, the Regional
19 Advisory Committee, and they will look at these documents and
20 go around and around and around and say, We think this ought
21 to be a little clearer here, or we don't think this is going
22 to work, and it is sort of a negotiating process with the
23 state and the involved local governments more than anything
24 else.

25 And then, finally, as the point of concurrence

1 reaches, the plan is now taking shape as a final document,
2 and when the Regional Advisory Committee is satisfied that
3 the prescribed voluntary guidelines are applied in the state's
4 plan, then the Regional Advisory Committee recommends to
5 the NRC that the plan receive an NRC concurrence.

6 At that point in time, it goes through a final
7 look at the headquarters level, and the involved federal
8 agencies at the headquarters level are given a five-working-
9 day notice that unless objections are heard, the concurrence
10 will be granted.

11 COMMISSIONER MARRETT: Have there been any instances
12 in which that whole process was not followed through on?

13 MR. COLLINS: Well, I don't quite know exactly what
14 you mean, the whole process followed through.

15 COMMISSIONER MARRETT: Well, for example, might a
16 state, since this is entirely voluntary, and a state need not
17 submit a plan, might it at any point say, I won't bother about
18 making those changes that were discussed or whatever, and just
19 fail to follow up any more with NRC and the other agencies?

20 MR. COLLINS: Well, indeed, we have had states'
21 emergency planning documents being submitted to us for review
22 and we have sent letters back or advised them that this does
23 not this or that does not meet that in terms of guidelines,
24 and in some cases we have not heard anything more from the
25 states. Now, there is a variety of reasons for this, either

1 that they have got other priorities and they think some other
2 things are more important or, in some cases, they have told
3 us that they have deliberately dragged their feet, hoping
4 against hope that the federal government or their own state
5 legislatures would come along with funds and people so that
6 they could do this thing properly.

7 So there is a whole host of reasons why the twenty
8 or so odd states out there that ought to have concurred-in
9 plans or some kind of plans in place that are maybe better
10 than they have, why they don't have these plans concurred in
11 at this time, a variety of reasons, many of which are poli-
12 tical.

13 COMMISSIONER MARRETT: With reference to the kinds
14 of guidelines that you have used in reviewing plans, has there,
15 for example, been any guideline with reference to public
16 information. Do you look at a plan and ask the extent to
17 which it makes allowances, prepares for the dissemination of
18 information to the public?

19 MR. COLLINS: Yes. Our primary guidance document
20 for the states and local governments has been out since
21 December 1, 1974. It is a comprehensive document. It has
22 withstood the test of time. That document and Supplement
23 Number 1 to it do contain the kind of guideline standards
24 concerning public information, notification, warning, the
25 kind of things that you talk about. Those are identified in

1 our primary guidance document as what we call essential
2 planning elements.

3 COMMISSIONER MARRETT: Could you be a little more
4 specific on that? When you say public information, are you
5 talking simply about warning after an incident, or is this
6 keeping the public generally informed about radiation, for
7 example, about what might be going on in terms of any sorts
8 of discussions that center on the plant?

9 MR. COLLINS: Well, we did not have in mind here
10 that the -- whoever, federal government, utilities, or who-
11 ever -- conduct a continuing education program on matters
12 involving radiation. That is not what we had in mind.

13 That, I think, is something that might have to be
14 looked at, but what we did have in mind here was that the
15 public and the appropriate governmental authorities off-site
16 should be promptly notified in the event that there is an
17 accident or an incident at that facility which will cause or
18 could cause, possibly cause, some impact in the off-site area
19 of the plant, which might require some response on the part
20 of the public.

21 So we had the things like early warning in mind,
22 proper notification of the authorities and the public, and
23 also, we also had in mind making recommendations as to what
24 the public should do, and that is all in our primary guidance
25 document.

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1 COMMISSIONER MARRETT: So public information there
2 means that there must be a call made to the appropriate agen-
3 cies. Is that what is going on?

4 MR. COLLINS: In the --

5 COMMISSIONER MARRETT: That is to enter a channel
6 with information to the public about an incident.

7 MR. COLLINS: In that sense, that is what it means,
8 and it also encompasses that the appropriate governmental
9 authorities be provided with continuing and updated informa-
10 tion as the accident or incident situation changes. In other
11 words, that you just don't call them -- the idea here is not
12 to just call them and leave it at that, but to keep them
13 advised on a continuous basis so that if something changes,
14 they are ready to make the necessary moves that they have to
15 make.

16 In other words, we envision this whole notification
17 and warning and public information process for emergency
18 planning as a dynamic process which starts at the time some-
19 thing goes wrong and continues on through. I hope I have
20 answered your question.

21 COMMISSIONER MARRETT: I think Dr. Marks has a
22 couple of other questions along that line, but to continue
23 with reference to NRC's role in emergency planning and pre-
24 paredness, with the establishment of FEMA and with the lack
25 of clarity earlier with reference to NRC's role and with the

1 comments that have been made about whether or not NRC is the
2 appropriate agency to be responsible for preparing for public
3 health and safety, what do you envision happening in the whole
4 federal structure with reference to NRC and emergency prepared-
5 ness?

6 MR. COLLINS: Well, I think the way it will all
7 shake out, you know, if I am looking in a crystal ball, the
8 way it will all shake out is that the new Federal Emergency
9 Management Agency will assume, we hope, a more comprehensive
10 and positive role in coordinating the activities of the tech-
11 nical federal agencies in emergency response. NRC certainly
12 is a technical federal agency like the EPA and like HEW.

13 So we would assume that the new FEMA would be set-
14 ting policy, making such changes in the emergency response
15 mechanism of the federal government that are needed, and would
16 retain these technical agencies like our agency in technical
17 roles in emergency response, because that is obviously where
18 we belong.

19 COMMISSIONER MARRETT: So if it is a matter of
20 coming to define what should be more concretely the content
21 of state plans, are you saying that should be FEMA's role,
22 generally, with NRC then being responsible for the nuclear
23 side of that, but FEMA will set the policy on what should be
24 in state plans for emergency preparedness?

25 MR. COLLINS: Yes. They probably, ultimately, will

1 set any new changes and so forth guidelines, but I want to
2 point out here that FEMA is not ready to do this yet, and
3 they probably won't be able to do this for some time. One of
4 the reasons is that one must recognize what FEMA really is.
5 It is a combination of three large federal agencies, the
6 Federal Disaster Assistance Administration, Federal Prepared-
7 ness Agency, and Defense Civil Preparedness Agency, and a
8 number of other very small operations like Flood Insurance
9 and Fire Protection and things like that.

10 But I don't think that the technical expertise
11 exists in FEMA at this time and is unlikely to exist in many
12 of the areas for which EPA and HEW and NRC are responsible.
13 What we think is that we should keep the current deck of cards
14 that we've got now in terms of guidelines and standards,
15 because we haven't got anything better out there. Until such
16 time as the guidelines are reviewed and maybe codified into
17 regulations, which is a possibility under the Hart bill,
18 Senate S-62; if that happens, then it is a whole new ball
19 game.

20 But I think gradually FEMA will, and should, assume
21 a more positive role than either of the component agencies
22 has done in the past and gradually set policy and coordinate
23 these guidelines.

24 COMMISSIONER MARRETT: One final question: Someone
25 testified earlier that it would be most appropriate for NRC

1 to establish its own plan in terms of emergency preparedness.
2 Where does NRC stand with reference to that and who might
3 review the NRC plan?

4 MR. COLLINS: Well, that is a little bit out of my
5 bailiwick, but there are people at NRC that do have the
6 responsibility to develop and improve NRC's emergency plan.
7 Incidentally, that is another piece of business that is
8 probably going to be levied on us by the Hart bill, S562,
9 the NRC Contingency Plan.

10 That bill also calls for a national plan, probably
11 to be put together by FEMA. All I can say is that the NRC
12 Contingency Plan will have to be developed, and when that is
13 going to happen I don't know, but it is certainly a thing
14 that is on the books to be done, quite obviously.

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1 CHAIRMAN KEMENY: Governor Babbitt.

2 COMMISSIONER BABBITT: Mr. Collins, following on this
3 line of questioning, if the Hart bill or some other legisla-
4 tion were ultimately put together, giving the Federal Govern-
5 ment direct jurisdiction to approve and supervise state
6 emergency plans, radiological and otherwise, do I understand
7 you as favoring the ultimate evolution of that approval
8 authority from NRC to FEMA?

9 MR. COLLINS: No, for the radiological emergency
10 response plans, the way it's set up in the Hart bill --

11 COMMISSIONER BABBITT: Excuse me, I understand the
12 Hart bill, but I would prefer to hear your position or FEMA's
13 position as a matter of what ought to be.

14 MR. COLLINS: Well, I don't know what FEMA's position
15 is. I have an inkling of what --

16 COMMISSIONER BABBITT: I'm sorry, NRC's position.

17 MR. COLLINS: NRC's position. No, we would like to
18 concur in the future in state plans with FEMA, the radiological
19 plans. In other words, it would be a joint concurrence by
20 FEMA and by NRC for the radiological plans, emergency plans.
21 I think that's what we'd like to do.

22 COMMISSIONER BABBITT: Thank you.

23 CHAIRMAN KEMENY: Governor Peterson.

24 COMMISSIONER PETERSON: Thank you, Mr. Chairman.

25 Mr. Collins, let's go back to the incident response center on

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LA 2 1 that Friday morning, March 30th. If Mr. Barrett hadn't been
2 there that morning and you got only that one piece of infor-
3 mation coming in from the site that they had obtained a
4 measurement of off site reading of 1200 millirems per hour,
5 do you think it likely that you would have -- the group would
6 have decided to recommend evacuation?

7 CHAIRMAN KEMENY: Excuse me, Governor Peterson, did
8 you mean off site or on site?

9 COMMISSIONER PETERSON: I meant, they got in a
10 reading from the site which we subsequently have analyzed was
11 in the plume about the plant. But they didn't have that
12 detail at the time. You had a report from the plant of a
13 reading of 1200 millirems per hour. And my point is, with
14 that one piece of information, would this management group,
15 in your opinion, have gone ahead with the recommendation to
16 evacuate the site?

17 MR. COLLINS: I think so. I don't think it really
18 depended on Mr. Barrett being there. If Mr. Barrett wasn't
19 there, somebody else would have been there, and they'd have
20 probably done the same thing he would have done. Somebody
21 would have been there. We were all on watch in those days,
22 and people were rotating around on long shifts.

23 COMMISSIONER PETERSON: Excuse me a minute, my point
24 was Mr. Barrett did the calculation about the erroneous
25 release of noble gases. And that reinforced this 1200 millirem

LA 3 1 number. My point is if you hadn't had that reinforcement with
2 a phony calculation -- accurate calculation based on the wrong
3 data, excuse me, Mr. Barrett -- would that have been enough,
4 do you think, to get the management group to recommend
5 evacuation?

6 MR. COLLINS: I think it would. If they heard that
7 coming from the site, even without the calculation, they'd
8 have done the same thing. I guess so. I suppose they would.

9 COMMISSIONER PETERSON: When you were talking about
10 this, you referred to the information getting to the
11 commissioners and how the escalating -- I had heard a rumor,
12 I guess it was, that the commissioners on the weekend, on
13 Sunday, I think it was, some of them, had met and at that
14 time decided to recommend evacuation. Do you have any infor-
15 mation on that?

16 MR. COLLINS: On the weekend, talk about evacuation?

17 COMMISSIONER PETERSON: Yes.

18 MR. COLLINS: Well, there was talk over the weekend.
19 I believe it was predominantly on Sunday. And the way that
20 all came about was there were some things that had to be done
21 to the reactor plant, some manipulations of various components
22 and things, to put the entire system closer to a stable shut-
23 down situation. And I do remember that there were some
24 people running around, technical people running around in the
25 center Sunday. I believe it was Sunday, I'm pretty sure about

LA 4 1 that. They were making laundry lists of different technical
2 maneuvers that might have to be done with the plant, such as
3 opening this system and doing this, different things like that.
4 And then along with that list, there was sort of a list of
5 possible consequences if one did those things. And these
6 consequences were in terms, as I remember, of projected doses
7 off site. And then there was a column which said if we do
8 this operation, if this goes wrong and we get this dose, then
9 what do we do. And then there was a recommendation for taking
10 some protective measures. And as I remember, for the differ-
11 ent manipulations that were on this laundry list, protective
12 measures envisioned were sheltering and evacuation and combina-
13 tions of those things.

14 So in that sense, evacuation was discussed on
15 Sunday, I believe. But it was discussed in terms of doing
16 things with the plant in the future that had to be done, in
17 other words, making certain system changes and things. And
18 then if something happened while they were doing these things,
19 and radiological releases occurred, then what would the magni-
20 tude be off site and then what would we tell, you know, the
21 state authorities and the local authorities to do. It was
22 that kind of a thing.

23 COMMISSIONER PETERSON: And the commissioners were
24 in on this discussion?

25 MR. COLLINS: The commissioners were in on this, yes.

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LA 5 1 I can't say whether all five of them were, but I think at least
2 four were. I remember seeing four there.

3 COMMISSIONER PETERSON: Now, this is a time when
4 the President was up at Three Mile Island or en route there,
5 I guess.

6 MR. COLLINS: That would have been on Sunday. I
7 think this whole thing that I just talked about occurred
8 around Sunday afternoon.

9 COMMISSIONER PETERSON: And those four commissioners,
10 did they all agree that, on the basis of the discussion,
11 that they ought to recommend an evacuation?

12 MR. COLLINS: Well, you see, this list -- there were
13 no recommendations for evacuation or anything going out. This
14 was just sort of a list of what protective measures might be
15 required if certain manipulations were done at the plant.
16 And that's simply what it was. It was kind of a look into
17 the future type list. If we have to do this and if this
18 happens or goes wrong, then what should we do, you see. So
19 it was a sort of looking in the future type thing.

20 COMMISSIONER PETERSON: You look like you want to
21 say something about that, Mr. Barrett.

22 MR. BARRETT: These were contingency plans, that if
23 certain things happened, like what we lost what we call the
24 main coolant pump, a significant piece of equipment, if we
25 lost a piece of equipment, what should be done. And we did

1 dose calculations and projections. If the containment failed
2 for some reason, what should be done. They were contingency
3 plans, and strictly that.

4 COMMISSIONER PETERSON: Let me ask Mr. Collins this.
5 In your experience with the Atomic Energy Commission and the
6 Nuclear Regulatory Commission, have you ever encountered an
7 attitude that emergency planning should not be emphasized,
8 because that emphasis might stifle the development of nuclear
9 power?

10 MR. COLLINS: I have.

11 COMMISSIONER PETERSON: Does that permeate a lot of
12 the thinking and planning in the agency?

13 MR. COLLINS: Well, when I first joined the Atomic
14 Energy Commission in 1969, that particular attitude, I would
15 say, prevailed in many quarters. There were very few of us
16 involved in reactor safety or emergency planning in those
17 days, from an operational standpoint. And the whole emergency
18 planning business in the AEC was a very low profile situation.
19 I can say that having been in it for a decade now, as I look
20 back, things are more out in the open. We're in better shape
21 today on this whole business than we were in '69. But we
22 still got a long way to go.

23 So the climate for emergency planning and preparedness
24 has improved gradually through the old AEC and the NRC. But
25 in all honesty, there are still some vestiges of the old

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1 hang-ups about trotting emergency planning out and giving it
2 too high a visibility, lest you frighten the folks in
3 Tunerville.

4 COMMISSIONER PETERSON: Do you have that same
5 experience, Mr. Barrett?

6 MR. BARRETT: No, I have not had that experience, but
7 I'm not that involved in emergency planning.

8 COMMISSIONER PETERSON: Mr. Chairman, Commissioner
9 Pigford had a question he wanted me to ask for him. It's
10 a follow-up on something I asked. Can he do that at this
11 time?

12 CHAIRMAN KEMENY: Yes.

13 COMMISSIONER PETERSON: I couldn't follow it
14 thoroughly.

15 CHAIRMAN KEMENY: Okay, it's now seven after seven.
16 What is your wish? Are you ready to call it a day?

17 The witnesses are thanked. And I have one question
18 to ask the commissioners. The witnesses are excused. Could
19 I just ask the commissioners, because of the change of plans,
20 for a quick show of hands about the starting time tomorrow
21 morning, 9:00 versus 9:30. Those who prefer 9:00, please raise
22 your hand. It looks as if the Chairman is outvoted.

23 (Thereupon, at 7:10 o'clock p.m., the meeting was
24 concluded.)
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P R O C E E D I N G S

12:28 P. M.

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2 CHAIRMAN KEMENY: I have a very brief opening
3 statement. First of all, I would like to introduce Associate
4 Chief Counsel Charles Harvey, who, with his colleague, Ruth
5 Dicker, did part of the taking of depositions and was in
6 charge of preparing the Commission for this set of hearings.

7 Secondly, I wanted to comment on the Commission's
8 decision to try to get all the witnesses in today. It amounts
9 to our feeling very much the burden of coming up to our
10 October 25 deadline, and we wanted to spend as much time as
11 possible at this meeting to make sure that all the investi-
12 gative activity that needs to be done is underway, because
13 we pretty well have to wind up the investigative stage during
14 the month of August.

15 It also meant, as a result of that, of the very
16 many things we found in the area of emergency preparedness
17 and public health, we had to make a selection of the themes
18 that we could bring out at this open hearing. You will vastly
19 more in the depositions that were taken, all of which, of
20 course, will be made public at the conclusion of the Commis-
21 sion's work.

22 For example -- I will give you only one example.
23 There was a fascinating story concerning the provision of
24 potassium iodide which we were very much tempted to bring out,
25 but we decided it would probably add at least an hour to the

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1 length of the hearings. It is an example of something that
2 we decided not to do.

3 Yes?

4 QUESTION: Dr. Kemeny, there are at least, as you
5 know, four government groups that are studying the Three Mile
6 Island situation. One of them came out with a voluminous
7 report today. Two weeks ago, the President said in Kansas
8 City, in effect, that nuclear power is here to stay, and he
9 would wait to see what else you all could add to it.

10 My question is, is there a danger that this Commis-
11 sion's charge is being watered down by all these reports and
12 by the President's statement? Has he usurped your role?

13 CHAIRMAN KEMENY: No. Let me comment on the Presi-
14 dent's statement, specifically, because I have clearly thought
15 about it a great deal and I have gotten copies of the state-
16 ments that were made and looked at news reports of what he
17 said during the retreat at Camp David.

18 I believe in all statements he and other key govern-
19 ment officials made, the statement included that they would
20 wait until this particular Commission reported until taking
21 final action. I think that was crucial.

22 Now, on the President's statement that he felt that
23 nuclear power was an essential part of the energy picture,
24 he has a unique problem that is different from the problem
25 of this Commission. He has to come up with a national plan

1 of how to solve the energy crisis, and I do believe that there
2 is a serious energy crisis. In that, any chief executive has
3 to take the best possible guesses as to to what will be avail-
4 able to help relieve the crisis. I mean, a plan that would
5 have said, We are going to do, with a huge uncertainty as to
6 whether nuclear power will or will not be part of it, would
7 have been a nonsensical plan to recommend to the nation.

8 Clearly, I would interpret the President's statement
9 as his guessing that whatever this Commission would come out
10 with would not recommend the total abolition of nuclear power.
11 I think that is the only way I can interpret his guess.

12 Yet he has publicly promised that he would implement
13 the recommendations of this Commission. Therefore, if this
14 Commission should come out with a recommendation that nuclear
15 power is not sufficiently safe, I have every confidence that
16 the President would accept that, and it would be one more
17 piece of very bad news the President of the United States
18 would get in trying to solve an almost impossible problem.

19 QUESTION: This morning the NRC issued a report that
20 said an accident, the accident at TMI could have been avoided
21 if the plant operators had just allowed the safety system to
22 work. Do you agree with that conclusion of the NRC?

23 CHAIRMAN KEMENY: Yes, I do agree with that state-
24 ment. We have had a number of witnesses who have testified
25 before this Commission on that. But I think it should be put

1 into the following context, and I believe I said this at my
 2 last press conference, that one of the sad things that we are
 3 finding is -- I said something like, Before we are through,
 4 I predict we are going to find ten to twenty different things
 5 about which we could say, If only so and so had happened, this
 6 accident would not have occurred.

7 I believe the NRC correctly identified one of those
 8 many things.

9 QUESTION: The NRC also said, Mr. Chairman, the
 10 design factors could also have prevented the accident and that
 11 there is a long list of noncompliance. Does that comport with
 12 what you have found from witnesses?

13 CHAIRMAN KEMENY: Let me take that question in two
 14 parts. Certainly on equipment failure we have had ample
 15 testimony. On the question of noncompliance, I do not have
 16 first hand evidence yet, but we are now in the process of
 17 deposing a large number of officials of the Nuclear Regulatory
 18 Commission, and therefore we hope by our next public hearings
 19 to have all that information available.

20 QUESTION: In terms of noncompliance by the licensee,
 21 the noncompliance of Nuclear Regulatory Commission regulations,
 22 is that what you are now in the process of finding from
 23 witnesses?

24 CHAIRMAN KEMENY: We are looking at the entire
 25 question of how well the Nuclear Regulatory Commission carried

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1 out its functions to enforce its regulations.

2 QUESTION: Well, when the NRC's inspection staff
3 reports that there was noncompliance by a licensee, would you
4 assess the blame, if that be correct, on the licensee, or
5 would that also fix some blame on the NRC?

6 CHAIRMAN KEMENY: From the way I answered your
7 earlier question, very clearly I was assigning -- if that
8 statement is correct -- that one would have to place -- and if
9 this was known to the NRC -- would have to place blame both
10 on the licensee and on the NRC. I mean, that is their con-
11 stitutional responsibility, to enforce these regulations.

12 QUESTION: Would it not also be the NRC's fault if
13 they did not know or if they were supposed to know?

14 CHAIRMAN KEMENY: Yes. In that case, one would have
15 to have evidence as to whether it was possible for them to
16 find out, you know, whether there was an intentional cover-up,
17 and I have not heard any evidence to that effect, and/or
18 whether somehow they did not find it out or, as we have now
19 found in two other areas where we have looked, people within
20 the organization may have known and the news did not get up
21 high enough to do something about it.

22 QUESTION: Dr. Kemeny, do I understand you correctly
23 when you say that the President has promised in advance to
24 implement your recommendations without knowing what they might
25 be?

1 CHAIRMAN KEMENY: Yes, that was the quite remarkable
2 statement that President Carter made just before the first
3 meeting ever of this Commission. He invited us to the White
4 House, and there was a press pool present. Therefore, it
5 clearly is a public statement the President made, not a
6 private one, and while I cannot quote it verbatim, I will
7 never forget the essence of it. He said how important the
8 Commission was and then said, "I not only look forward to your
9 recommendations, but it is my intention to accept your recom-
10 mendations and to do everything I can within my powers to
11 implement them."

12 I commented on that at our first public hearing,
13 that when I accepted this job, my first words were, "It is
14 an awesome responsibility," and after the President's state-
15 ment to the entire Commission, it became an even more awesome
16 responsibility.

17 QUESTION: Mr. Chairman, do you feel there is a
18 greater pressure; given the complexities of the energy prob-
19 lem, does that increase the pressure on you to come up with
20 some kind of recommendation that does not preclude nuclear
21 power?

22 CHAIRMAN KEMENY: No. I do not think it increases
23 the pressure on us. It clearly eliminates certain very easy
24 alternatives. I mean, if one simply could say eliminate
25 all sources of energy that have any danger associated with it

1 at all, I would assume this Commission would not exist in the
2 first place.

3 Unfortunately, I do not know of a major source of
4 energy that is totally free of dangers, and therefore it creates
5 a context within which this Commission is necessary. But our
6 charge is not to compare this with other sources but to make
7 a determination as to whether nuclear power does constitute
8 acceptable risks presently or if we can come up with recom-
9 mendations under which, if implemented, nuclear power would
10 represent an acceptable risk.

11 QUESTION: Are you worried about conditions at TMI
12 now as they try to bring it back, from the testimony you
13 have heard to date?

14 CHAIRMAN KEMENY: Yes. I think you are in a situa-
15 tion where there is some continuing degree of risk. Actually,
16 and here I am speaking only personally because the Commission
17 has not had a chance to go in depth into that question, that
18 I suspect the very great limelight that has been turned onto
19 Three Mile Island I suspect will lead to extreme caution on
20 the part of everyone, most notably the Nuclear Regulatory
21 Commission, to do everything humanly possible to avoid any
22 further major incident.

23 QUESTION: But the last witness said that the
24 defense barriers are slowly going down as they get into the
25 fuel. Does that worry you, that the closer they get to

1 looking at that fuel, the less defenses there are for exposure?

2 CHAIRMAN KEMENY: I did not quite hear him say that,
3 but what I heard mostly was the problem, of course, of the
4 very large amount of contaminated water in there, and that is
5 a problem, but I think time is of the essence here in the
6 opposite sense of the usual; that is, the more slowly one does
7 it, the safer it can be.

8 What my hope, again speaking personally, is is that
9 people will take their time here to make sure that it is done
10 slowly and safely, rather than feel the economic pressure to
11 get it done as quickly as possible.

12 QUESTION: Mr. Chairman, how will you determine
13 what is an acceptable risk?

14 CHAIRMAN KEMENY: That is going to be one of the
15 most difficult issues the Commission will have to deal with,
16 very clearly. We have had, you know, some very loose, free-
17 for-all discussion on this subject, and it is one of the
18 difficult issues on which we will eventually have to reach a
19 consensus as to how to determine.

20 QUESTION: Will it be done on a comparison basis
21 to other industries?

22 CHAIRMAN KEMENY: I don't know that. I mean, I
23 have my own views, but that is something clearly -- it is one
24 of the key issues that the Commission, as a Commission, will
25 have to determine, and I do not wish to pre-guess where the

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1 Commission will come out on that.

2 QUESTION: One other question, Mr. Chairman.

3 Your changing your schedule today and tomorrow indicates you
4 are continuing to feel pressure to meet your deadline. We have
5 asked you before whether you considered delaying your deadline.
6 Have you considered it now?

7 CHAIRMAN KEMENY: No, we have not considered
8 delaying the deadline. I think we would do so only if we
9 find we absolutely cannot complete our charge. Frankly, there
10 are a large number of staff members who are working straight
11 out, so many hours a day. I think if we had any significant
12 slippage, particularly in the work of the staff, we would
13 have a dead staff on our hands.

14 QUESTION: Do you have any concerns that the quality
15 of your report may be damaged by the haste in which you are
16 preparing it?

17 CHAIRMAN KEMENY: I don't know if haste is quite
18 the right term for it. People are working extremely hard,
19 and we are doing everything humanly possible to have all the
20 major issues investigated. I think "haste" would be an
21 accurate characterization only if we came out with recommenda-
22 tions before we had all the relevant facts that we could
23 possibly collect.

24 QUESTION: Dr. Kemeny, having read the summary of
25 the NRC's report today, do you have any feelings that the

1 blame may be placed upon operator error in order to remove
2 blame from either the NRC, the designers, the industry?

3 CHAIRMAN KEMENY: Yes, there certainly have been a
4 number of groups whose simple summary of it has been that
5 operator error is the cause of the accident, and I think by
6 now everyone concedes that there has been operator error.

7 That is very different from saying that operator
8 error is the total explanation of the problem. You may recall
9 at our last hearings we questioned one of the manufacturers
10 very, very hard. I, myself, remember questioning the vice
11 president in charge of nuclear generation, and pointed out
12 that the very same kind of doubt that I noted in the intro-
13 duction of the NRC document is mentioned, about the pressurizer
14 level, that the very same kind of doubt that existed in the
15 minds of the operators that he said should not have existed,
16 existed on the part of one of the senior officials in that
17 company, and perhaps this may have been very widespread.

18 QUESTION: Dr. Kemeny, there was a congressional
19 report also issued today that basically says that the NRC
20 lulled the utilities and the American public into complacency
21 about reactor safety. Would you comment on that?

22 CHAIRMAN KEMENY: Could you say that again? I
23 would appreciate it.

24 QUESTION: Yes. He asked about the House Govern-
25 ment Operations Committee report, which says the American

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1 and utilities were lulled into complacency by the NRC regard-
2 ing reactor safety.

3 CHAIRMAN KEMENY: Yes, I would be happy to comment
4 on that. May I make one unasked-for comment? I would be
5 terribly grateful if both the NRC and congressional committees
6 came out with important reports the day after our public
7 hearings rather than the morning of, so I have some chance
8 to look at them before I comment on them.

9 (Laughter.)

10 But to take your question, which is a very good
11 one, we have the testimony of the five NRC commissioners
12 themselves, which seems to me the best way to answer that,
13 who said in so many words that the basic safety standards
14 were set down in 1974, if my memory is correct, which was the
15 year before this particular commission came into existence,
16 and they had not, as a commission, spent any serious time
17 discussing safety issues because they believed that sufficient
18 safety standards had been laid down. I think that answers
19 your question, wouldn't you agree?

20 QUESTION: Dr. Kemeny, since this Commission was
21 formed, it has served as something of, at least in essence,
22 a watchdog over the NRC and its activities related to this
23 accident. From the testimony today from Mr. Gerusky and from
24 the previous witnesses from Babcock & Wilcox, we are led to
25 believe that the duration of the Three Mile Island accident

1 is really a four-year duration, four-year span.

2 After October 25, who is going to be watching the
3 watchdog, NRC?

4 CHAIRMAN KEMENY: I would hope whatever structure
5 this Commission recommends is a long term structure for that
6 kind of task.

7 QUESTION: Do you anticipate a recommendation along
8 those line, that there will be somebody to watch the NRC?

9 CHAIRMAN KEMENY: I don't quite want to put it in
10 that form. I mean, you are foreclosing a number of options.
11 For example, you are assuming that we would recommend continu-
12 ation of the NRC. I am not saying that we are going to recom-
13 mend abolishing it. I mean, we are now really just in the
14 midst of looking at the NRC. But I think it is fairly clear
15 that there are structural problems, and it is certainly within
16 the purview of this Commission and its charge to possibly
17 recommend some fairly major structural changes.

18 QUESTION: Mr. Chairman, do you feel that you have
19 sufficient staff to meet the deadline now, or would you like
20 more people?

21 CHAIRMAN KEMENY: I think I am --

22 QUESTION: Some are working long hours at a time.

23 CHAIRMAN KEMENY: Yes, I am tempted to answer that
24 in the same terms that one of the operators answered when I
25 suggested that it would have been helpful to have an alarm

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1 that indicated when they crossed over into the steam region,
2 and he said, "Sir, one more alarm was the last thing in the
3 world we needed."

4 I think, in terms of the size of the staff, which
5 incidentally now stands at something like roughly 60 full time
6 people plus outside consultants, plus the Commissioners, that
7 while we certainly could always use more staff, the question
8 is whether we could manage on such a short time period to
9 mold them into a team.

10 QUESTION: You used the analogy, I believe, at your
11 first public session that this Commission was something like
12 a university. Is that analogy still holding for you?

13 CHAIRMAN KEMENY: Yes. As a matter of fact, the
14 more I think about it, the better that analogy is. I said
15 that the Commission members, in effect, were the board of
16 trustees, that the staff was the administration of the insti-
17 tution, and that the Chairman has the famous ambiguous role
18 that university presidents play: on the one hand, he is a
19 member of the board of trustees but has only one vote and
20 also takes instructions from the commission members; on the
21 other hand, he is the head of the staff.

22 I think all the ambiguities and complications of the
23 univeristy structure have manifested themselves in the work-
24 ings of the Commission.

25 QUESTION: In that case, then, how does the

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1 citizens' group which did some public complaining fit into
2 the university analogy? What would they be in a university?

3 CHAIRMAN KEMENY: The faculty, perhaps.

4 (Laughter.)

5 QUESTION: The October 25 deadline, does that mean
6 that this has to be off the presses on October 25 or it has
7 to be on the President's desk?

8 CHAIRMAN KEMENY: I would certainly hope not. I
9 mean, it only says to report to the President within six
10 months of the first meeting, and that is one thing on which
11 I am going to receive clarification from The White House. I
12 hope very much that it means that we will have finished
13 coming up with our findings and recommendations and are able
14 to present a copy of that to the President.

15 If it meant off the press, I think it would be a
16 hopeless deadline, though obviously we want to get it off the
17 press as quickly after that as possible. I would imagine we
18 would want to have a public meeting where we would have a
19 chance to make our findings and recommendations public.

20 QUESTION: Dr. Kemeny, is there going to be another
21 citizens' group established?

22 CHAIRMAN KEMENY: I don't know that yet. In the
23 executive session tomorrow, that is one of the items I put on
24 the agenda to seek the Commission's advice.

25 QUESTION: Could I make, I think on behalf of my

1 colleagues, a plea to be able to see the report at least an
2 hour before you hold your press conference on it? It is very
3 difficult to even attempt to ask meaningful questions --

4 CHAIRMAN KEMENY: That is a good point. Barbara --
5 I see she is taking notes on it. Yes, thank you. It is the
6 kind of thing I could have slipped on, but I hope Barbara
7 would not have.

8 I realize what you are saying. Clearly, we have to
9 report to the President first, but we will not report to the
10 President until we have finalized our findings and recommen-
11 dations, and I have to ask President Carter how he wishes the
12 Commission to do that, and certainly we want to go public
13 as quickly after it as physically possible.

14 What you are saying is that somehow we time it so
15 that you have time to study our findings and recommendations
16 beforehand. I think that is very helpful advice.

17 QUESTION: Mr. Chairman, if I could ask you, I
18 would like to just get some idea of your opinion, your reac-
19 tion, to the NRC's report today.

20 CHAIRMAN KEMENY: I have only read the introduction,
21 to it, and that is thanks to the kindness of one of you here
22 in the room that I had a copy I could glance at two minutes
23 before this press conference.

24 I think that the statements that were made there in
25 the summary seem to be true statements and not very surprising

1 ones, the ones I have seen in the summary. Clearly, I may
2 be doing an injustice without having read the whole report.

3 Thank you.

4 (Whereupon, at 12:50 p. m., the press conference
5 was concluded.)

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