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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

DISCUSSION OF THREE-MILE ISLAND INCIDENT

(Closed to Public Attendance)

Chairman's Conference Room
1717 H Street, N.W.
Washington, D. C.

April 2, 1979

The Commission met, pursuant to notice at 12:20 a.m.
Joseph Hendrie, Chairman of the Commission, presiding.

PRESENT:

- Chairman Hendrie
- Commissioner Gilinsky
- Commissioner Kennedy
- Commissioner Bradford
- Commissioner Ahearne

ALSO PRESENT:

- S. Chilk
- L. Bickwit
- W. Dorie
- A. Renneke

(Note: This transcript is constructed from a
tape recording.)

70-088

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BACKGROUND INFORMATION

As the Three Mile Island situation developed beginning on Wednesday, March 28, the Commissioners met to discuss the nature of the event and scheduled a staff briefing held on March 29 at 9:50 a.m. The emergency nature of this situation at Three Mile Island led the Commission to go into "continuous" session for the duration of the event beginning on the morning of March 30. This meant that whenever a quorum was present, it was part of the continuous session. Because of the nature of these sessions, particularly on Friday, March 30, Saturday, March 31, and Sunday, April 1, most of the Commission meetings were held outside the Chairman's Conference Room which is equipped with magnetic tape recorders. Part of Saturday's and Sunday's meetings, for example, were at the Incident Response Center at Bethesda.

The nature of these meetings was informal and often interrupted. Commissioners and staff members came and went as conditions arose. During many of the sessions, multiple conference telephone calls and twoway telephone calls were made and received that were difficult to record and to transcribe.

These continuous meetings were for the most part recorded by several portable tape recorders using mini cassettes and regular cassettes. Nonetheless, in the fast moving events connected with this incident, there may have been times when Commissioners discussed matters which were not recorded.

The transcripts of the tapes of these continuous sessions, particularly where the meetings were held outside the regular meeting room, are a composite of several tapes. For all of the reasons above, these transcripts do not represent formal or official Commission statements on the matters discussed therein, nor have they been reviewed or edited by the Commission.

P R O C E E D I N G S

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CHAIRMAN HENDRIE: Let's call the meeting to order.

3

4

This, at the moment, continues to be one of the closed session in connection with the three-mile thing.

5

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7

I should tell you that I have got to go over and see Jack Watson at 1:00 o'clock, so I may have to go off and leave you discussing things.

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Let me give you a brief rundown. I have been talking to Harold this morning at the center and so on. Harold went on -- a little after 11:00 o'clock -- for a press briefing in which he discussed -- and there is a tape of that on the way down to you, so you can hear the full briefing right off the tape.

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MR. CHILK: There is also a transcript coming down.

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CHAIRMAN HENDRIE: Yes, there will be a transcript coming.

Now, what Harold did was to explain in some detail at this briefing, the various pressure -- the various measurements which have been made, the bubble volume and the fact that those have been trending down. He discussed the nature of the measurement, the substantial error band on it is about plus or minus 200 cubic feet. So, you know, we started out around 1,000 and then there were measurements at 850 and then 600 or 700, and then yesterday afternoon 350 and 200. One late last night around -- the last one I

1 saw, I guess, about 1:00 a.m. or something like that was
2 about -- just below 200. The last measurement Harold had
3 this morning, he called me just before he went into the
4 briefing, was 25 cubic feet plus or minus 200.

5 COMMISSIONER AHEARNE: Does he believe the numbers
6 are now -- because the constant trend, he got some ---

7 CHAIRMAN HENDRIE: Yes, the terms in which he
8 discussed it was that clearly in spite of the very substantial
9 error that the bubble volume is coming down ---

10 COMMISSIONER BRADFORD: Where is it going, though?

11 CHAIRMAN HENDRIE: Well, let me discuss that in a
12 minute. But let me tell you what he said so that you know
13 what sort of a consensus view of the organization is and the
14 people on site.

15 But it is coming down and is either now gone or
16 very -- or much smaller, and that, you know, very encouraged
17 by that. We have the customary regulatory conservatism
18 about proudly announcing that it is all gone, because there
19 is a substantial error, but it is clear that even with the
20 substantial error that is moving rapidly in the right
21 direction and the concerns then, over the hydrogen bubble
22 and its possible effects on this system is -- that concern
23 is very considerably mitigated now and on its way to not
24 being of concern much longer.

25 Secondly, the discussion about the evolution of

1 hydrogen and the evolution of oxygen and Harold also
2 discussed, and Roger Mattson, I guess, covered that detail
3 for him, the high early estimates of oxygen evolution rate
4 that gave rise to concern the fact that when recalculation
5 was done, taking into account the substantial hydrogen
6 overpressure in the system, that we got out to all the
7 experts in the country and that numbers of people who are
8 the very best on this subject, now are in full consensus,
9 and the staff at Bethesda is now in full consensus, that in fa
10 with that much hydrogen over-pressure in the system there
11 has not been any substantial evolution of oxygen at anytime
12 in the system. So that that concern is pretty well put to
13 bed now, too.

14 *question?* Where did the hydrogen go? I don't -- he discussed
15 COMMISSIONER BRADFORD: And how did it get there?

16 CHAIRMAN HENDRIE: And how did it get out, yes.

17 -- He discussed the ways in which it could come
18 out in which one or another or the full combination are
19 certainly the reasons, and they are briefly -- there are
20 a couple of letdown -- in effect, letdown streams from the
21 primary system. One is the pump seal leakage oozing
22 liquid out of the system, and it comes out with some hydrogen
23 gas in it. So that comes out of the system, comes in to
24 storage tanks, letdown and storage tanks, and then when
25 it is pumped back into the system it doesn't have that

1 hydrogen system in it, because it is out gas at the lower
2 pressure.

3 You've got a letdown line, there's the 10 gpm
4 or so going back into the system. Probably the main place
5 the hydrogen went -- I guess that has to be my speculation --
6 is this stream which we have been taking from the discharge
7 of the main circulated pump, which runs up into the top of
8 the pressurizer and then that water is sprayed as a fine
9 spray, down through the pressurizer. There's the norm for
10 operating stream, and that's a good physical chemistry
11 sort of gas stripping operation. You then get -- in train,
12 (desolved) gases come out in that steam bubble in the pressurizer
13 and then they vent from that gas base just into the contain-
14 ment.

15 Now, we are kind of surprised at the rate at which
16 it has moved on out. Your instincts for the rate at which
17 gas would go into solution and then be stripped out by this --
18 it is only about 20-30 gpm flow -- your instincts would be
19 that that wouldn't move that much hydrogen. On the other
20 hand, we have to recognize that we don't have any way to
21 know whether we've had one big bubble or maybe a big bubble
22 in the vessel and a smaller one over in that -- one of those
23 or both of those top elbows in the heat exchange -- in the
24 steam generator inlet piping, or in fact, whether the hydrogen
25 whether there never has been any substantial large bubble, but

1 the hydrogen has been in very small bubbles that are sort
2 of entrained in the circulating water in the primary system.
3 So that maybe that 20 gpm is not carrying just hydrogen that
4 is actually ~~resolved~~^{disolved} in the liquid, but a lot of small bubbles
5 which would be a much more effective mass transfer -- transport
6 mechanism.

7 Don Davis did a rough calculation late last night
8 trying to see whether that mechanism would be compatible with
9 apparent rate of mass transport, and it is, at least, within
10 the ballpark.

11 So our situation at the moment is that the bubble
12 is either gone or about to go by mechanisms which are a good
13 deal less traumatic than we thought might have to be the case.
14 And the oxygen -- the explosion capability is gone.

15 Out on the containment side, the containment hydroge
16 measurements continue to run at about two percent plus a
17 little -- I don't know what the precision is on those, but
18 they haven't changed all that substantially over the last
19 24 hours, and they are just about now -- either the
20 recombiner is now running or they are about to crank it up.
21 There was debate about the pros and cons of running if you
22 don't need it urgently now. On the other hand, why not
23 go ahead ---

24 COMMISSIONER AHEARNE: Did we get the other one on?

25 CHAIRMAN HENDRIE: The other one is plumbed. The

1 utility finished welding it in mid-afternoon yesterday and
2 is ready to go, but Stello insisted that our recombiner man,
3 Vic Benary^{o a}, spent all evening crawling all over it, worrying
4 and testing and so on, great concern about the possibility
5 of leakage from that system, because it is out in the
6 auxiliary building, and you know, that containment atmosphere
7 is murderously radioactive. But they are about to crank it
8 up, either that or it is running now, so that will pull down -

9 COMMISSIONER KENNEDY: They shielded them with those
10 lead ---

11 CHAIRMAN HENDRIE: Yes, with the lead brick.

12 - COMMISSIONER KENNEDY: -- brick?

13 CHAIRMAN HENDRIE: Call went out, they needed
14 something like 50 tons and found about 400 of them.

15 COMMISSIONER AHEARNE: Yes, I know.

16 COMMISSIONER KENNEDY: The Island, I understand is --

17 CHAIRMAN HENDRIE: Settling. That's all right,
18 listen, they are going to be shielding pieces of equipment
19 in that auxiliary building and we are going to need it for
20 months, and they are going to use every brick of that and
21 may call for more. So I think that's just fine.

22 Now, the next question immediately is: Good, we
23 have gotten rid of the bubble. Are we now ready to
24 depressurize and go down on to the ^{RHR}rhr mode, the normal
25 decay cooling mode at a lower pressure and a lower temperature

1 in the system. I will recommend urgently that nobody make
2 a move nowhere until we know exactly how we are going to do
3 that and all the pros and cons.

4 The utility side now has a functioning senior
5 advisory team out there in the guard headquarters at Olmstead
6 Airbase. They have pulled in senior reactor people from all
7 over the country. There are groups there from all over.

8 COMMISSIONER AHEARNE: So the technical competence
9 is now up.

10 CHAIRMAN HENDRIE: The technical competence, on the
11 utility side, people who have the experience, imagination and
12 the intellect, to think, very carefully through all of these
13 options to balance them, is now in place and supplementing
14 very rapidly. So that is very good, because instead of, in
15 effect, our people being the plant engineering staff for
16 these evolutions, are now -- you know -- they will now have
17 substantial technical strength on the utility side ---

18 COMMISSIONER KENNEDY: Back into an agree mode. ?

19 CHAIRMAN HENDRIE: Yes.

20 -- we can now look at that and our people, of
21 course, will, you know, inevitably there will be arguments
22 about where the best balance is and how to do this, and
23 out of the concurrence that will come from those, why you
24 get the best -- about as good as can be done.

25 Since the system is now stable, we are not concerned

1 about the bubble and any explosion problems with it. It is
2 cooling nicely, -- all the thermocouples, I believe, are
3 now under 400.

4 The question is whether to move ahead aggressively
5 to prepare for and make the transition to the decay heat
6 mode or whether to plan to stay here for a week or so and
7 let further decay occur in the core. One wants to look very
8 carefully at the event trees that flow from both of these
9 courses to see where your best option is, and that requires
10 some very careful examination and evaluation. If you go
11 this way what are the possible troubles you can get into and
12 what are the relative likelihoods of those, and at each
13 stage down either of these paths, where are you left always
14 with the best standby and reserve capabilities to deal with
15 the situation. So I am telling people that we ought, by
16 no means, now to immediately plunge and start depressurizing,
17 or even bringing the temperature down.

18 I talked at some length with Vic Stello last
19 night and we agreed that we now need to be very careful of
20 the boron concentrations in the system. As I recall, the
21 B&W plants, they are more heavily rodded -- control rodded
22 than some of the others so that you have a smaller need for
23 boron poison in the primary water as you come to cold shutdown
24 that is, down maybe at 120 maybe or 150 degrees, but you
25 still need boron in the system to come to cold shutdown,

1 negative temperature coefficients, reactivity increases as
2 the temperature comes down. And we want to think a little
3 bit about whether that highly damaged core and fission
4 products in the water creates any sort of a chemical situation
5 or whether coolant temperatures, coupled with the chemistry,
6 would give you any proclivity for taking boron out of a
7 solution that you wouldn't have in a normal plant situation.
8 So I think we ought to stay right where we are until we
9 have thought through all of these things.

10 COMMISSIONER KENNEDY: They put a lot of boron in it
11 about two or three days ago.

12 CHAIRMAN HENDRIE: Yes, well the water that you
13 pump in is a borated solution.

14 COMMISSIONER KENNEDY: Yes, but my recollection,
15 didn't they dump a whole lot in for the same reason a couple
16 days ago?

17 CHAIRMAN HENDRIE: Well, it's a thing that you would
18 There is a borated water storage tank that hangs there ready
19 to put a strong solution in. It is running at about -- it
20 seems to me 800-odd ppm boron. That's plenty at 280 F.
21 I want to make sure that it's plenty at -- even at ambient
22 temperature, 70 degrees or whatever, and that there isn't
23 an inclination, in view of the accident chemistry situation.

24 COMMISSIONER AHEARNE: At one time they were worried
25 about a potentially high leak rate out of the RHR pumps.

1 CHAIRMAN HENDRIE: That's -- that -- Yes.

2 One of the aspects of going to decay cooling is
3 that you come off a mode in which the primary circulation
4 is within the containment and the heat removal is within
5 the containment and what is coming -- what carries the energy
6 is that second day's steam from ---

7 COMMISSIONER AHEARNE: Right.

8 CHAIRMAN HENDRIE: -- the steam generator going
9 over and condensing in the condensor hotwell on the turbine
10 generator set. You got to a mode in which you are piping
11 the primary water -- coolant water, out into the auxiliary
12 building through a heat exchanger set of pumps and back in --

13 COMMISSIONER AHEARNE: But you still have the ---

14 CHAIRMAN HENDRIE: -- and it's you know, that water
15 is hot as all hell. And any leakage at pump seals, valve
16 bonnets, is going to be murderously hot.

17 COMMISSIONER BRADFORD: Can they do it?

18 CHAIRMAN HENDRIE: Test the system?

19 COMMISSIONER BRADFORD: Yes.

20 CHAIRMAN HENDRIE: I'm not sure ---

21 COMMISSIONER BRADFORD: That or just the pumps.

22 CHAIRMAN HENDRIE: There ---

23 COMMISSIONER AHEARNE: It said the specs were no
24 more than 3 gpm leak rate.

25 CHAIRMAN HENDRIE: Yeah ---

1 COMMISSIONER AHEARNE: That's a pretty high leak
2 rate, isn't it for water that's hot.

3 CHAIRMAN HENDRIE: Yes.

4 And you always have to be ready for something like
5 blowing a shaft seal, in which case the leakage rate will go
6 up substantially.

7 Now, even if just the normal minimal valve bonnet
8 leakage and that little leak that you get around the pump
9 seal, it's not like a normal operating shutdown where those
10 pumps are down in the pit and the exchangers over here and
11 it is sort of open and so on. You know, it is a fairly clean
12 system. What we need to do is to get covers over those pits
13 so that the radioactivity, which will evolve from that leakage
14 is not just free to ^awonder around the auxiliary building.
15 It would chase up completely out of the building and the
16 won't be able to service anything else. And all of those
17 arrangements need to be well in place before ^wwe make a
18 transition, in any event.

19 COMMISSIONER AHEARNE: Are they pumping gas from
20 the waste tank back into the container or is that still an
21 option that's not ---

22 CHAIRMAN HENDRIE: It's set to go, and I
23 don't know whether they are doing it yet.

24 COMMISSIONER AHEARNE: But they are not puffing,
25 burping much?

1 CHAIRMAN HENDRIE: Harold says, no -- through late
2 last night and down through this morning, the sort of -- the
3 stuff -- the helicopters reporting tenths of a millir ^{per} per
4 hour. There was a time earlier yesterday when there was
5 a little more stuff burping from that waste gas header, and
6 it was showing, oh, 4 or 5 millirem up in -- per hour up in
7 the plume. So that, at the moment, is well down.

8 COMMISSIONER BRADFORD: What with the bubble gone
9 or diminishing, what do they worry most about now? What are
10 the worst things that could happen now?

11 CHAIRMAN HENDRIE: Okay, the worry now -- you
12 remember, we sort of had two worries -- well, we had several
13 worries before, but one of them is still with us, although
14 modestly diminishing, and that is that we get a change in the
15 system, lose off-site power, so you lose that pump or the
16 shaft bearings go. You get a failure of the pump, you then
17 have to start one of the other circulating main pumps in
18 order to keep that circulation up. Another possible source of trouble
19 would be losing the condenser over on the turbine generator
20 sets, so you don't have good capability to condense the steam
21 from the steam generator. There are probably other possible
22 malfunctions that could occur, which would then leave you
23 where you were going to have to go -- the first thing you
24 would do would be to go into high pressure safety injection,
25 to keep the core covered, and you would have to relieve the

1 energy by periodic venting from the primary system to the
2 containment.

3 Well, you know, we have always had that set of
4 possibilities as a possibility that would lead us into -- back
5 into saying: Gee, maybe we'd better get people away for
6 some distance. As time goes on, you get -- that situation is
7 helped, at least modestly, by the fact that the after-heat
8 is going down a little bit all the time, and secondly, that
9 as time goes on and the operating crews get more chance to
10 work, why the maintenance of the operating equipment gets
11 better and, you know, you are feeling that you have a better
12 control on keeping it operating as it improves a little bit.

13 The off-site power situation is still a bit of a
14 headache. They had located -- early yesterday -- a set of
15 gas turbines at about 2 megawatts capacity apiece and they
16 were seeing whether they could get those on to the site. It
17 would require, I think, it would require paralleling four
18 of them and they were looking to see what the paralleling
19 and synchronization problems were, whether if they brought
20 them in they could get in the situation, but we are depending
21 in order to keep that circulation going at the present time,
22 on the availability of off-site power.

23 Now, the utility system has done everything it can
24 to assure that supply. Three-Mile Island is now a dedicated
25 mode of the GPU system, and within their capability the

1 switch gear is all lined up now so that it is the last
2 thing that drops if anything happens. They have got the
3 breakers locked in and there will be power on those lines
4 as long as the grid has any capability to supply it in the
5 line to there.

6 COMMISSIONER BRADFORD: What kinds of warning times
7 would go with a failure, at this point?

8 CHAIRMAN HENDRIE: I think, a number of hours,
9 because the kind of failures that occur now, with the bubble
10 gone and so you don't have to worry about that range of
11 concerns, if a pump fails, you immediately try to bring on
12 one of the others. If that -- or a condenser vacuum goes,
13 if any of that sequence goes you have got a number of hours --

14 Well, a number of hours, like 10 or something like
15 that at least, on high pressure injection. Then what you
16 would have to do is to let the pressure come down so that
17 the low pressure injection could pick up. You could still
18 keep water in. It just looks to me like the degraded
19 sequences down these chains don't have the fast-moving
20 character that they would have had if you had a hydrogen
21 bubble in there that might expand down into the core and
22 void the fuel and leave an adiabatic heat-up situation and
23 so on.

24 COMMISSIONER BRADFORD: What has the Governor
25 said? Is the pregnant women and small children advisory

1 still ---

2 CHAIRMAN HENDRIE: It is still in place. He
3 reaffirmed it yesterday afternoon. I went up to Harrisburg
4 late last night with Harold and we had a long talk with the
5 Governor and his staff. Harold is being very frank with the
6 Governor, who is -- you know -- really shown a very sensible
7 and capable leadership capability trying to keep the balance,
8 and he is very much aware, and his staff's very much aware of
9 the possibilities. So Harold has felt free to be quite frank
10 with him.

11 I was able, last night, to discuss with them the
12 decision paper, and I have got a couple of things I want to
13 say about that, after the discussions with them. I think
14 I will also hear sometime today some results from a meeting
15 that the state people were having with Federal Preparedness
16 Agency people and so on, this morning, late this morning,
17 about it at which that would be available. And I left some
18 copies with them.

19 The decision -- Why don't I just talk about that
20 for a minute, because I want -- in case I have to go --
21 on that report. The decision sequence, they think, is a good
22 reasonable thing to do. In looking at our charts, one of
23 their -- immediate comments was that the evacuation
24 scenario is not a good fit. It is not a total misfit, but
25 it is not all that good a fit with their capability. And

1 I think we should recognize that, probably, and a fairly
2 rapid modification of the thing. We can talk to Grimes,
3 you know, and that kind of crowd and see if it is reasonable.

4 But what the Governor and his people point out is
5 that they have an evacuation machine, think of it as a large
6 complex machine. It can perform certain functions and is
7 prepared -- you know -- you press the red button you get the
8 A Plan, the blue button, the yellow button and so on. They
9 can't change that easily. Their capability is evacuation on
10 a one-mile circle around the plant, a five-mile circle, a
11 ten-mile circle. They are not able -- they don't have a
12 quadrant capability in that they don't have a two-mile
13 capability. So I think the immediate realistic situation
14 with regard to evacuation scenario, if it is going to fit
15 well with them, I think our scenarios, what you do in certain
16 cases, need to fit their machine. Otherwise, you present
17 them with a recommendation which they can't ---

18 COMMISSIONER GILINSKY: Execute.

19 COMMISSIONER BRADFORD: That certainly --

20 CHAIRMAN HENDRIE: Which they can't execute with
21 precision. They just have to take the next approximation in
22 their machine.

23 COMMISSIONER AHEARNE: How hard would it be for
24 them on a longer run, let's say you conclude a week from now
25 that, all right, here's the way to get it down, but you

1 conclude there still is a chance of pump seal leakage or
2 whatever, disc rupturing, that there could be a large release.
3 Is it that hard for them to get a sector capability in, because
4 you are talking substantial numbers of people is what you
5 are talking about.

6 CHAIRMAN HENDRIE: Their emergency side people are--

7 COMMISSIONER AHEARNE: I guess ---

8 CHAIRMAN HENDRIE: -- very concerned about trying
9 to reconfigure the evacuation machinery with all the people
10 and all the links in it and so on in order to do something
11 like that.

12 Now, it is certainly true that in pointing that
13 out, they were thinking in terms of ---

14 COMMISSIONER AHEARNE: Immediate response.

15 CHAIRMAN HENDRIE: -- a fairly short-term response.

16 COMMISSIONER AHEARNE: Or perhaps a planned
17 approach they could handle.

18 CHAIRMAN HENDRIE: But -- so -- and since it seemed
19 to me that we are -- you know -- that we are not by any
20 means anchored in concrete here and we are very anxious that
21 we fit well with them, that -- We just didn't get in to
22 much discussion of what you might do if 10 days from
23 now you decided as a precautionary measure and before you
24 start a maneuver that you would like to do something.
25 That's possible we could go back and discuss it. I thought

1 I ought to report to you that their immediate response to
2 this was helpful and so on, but that those evacuation
3 scenarios that weren't a good fit to their machinery.

4 COMMISSIONER BRADFORD: If we are really looking
5 at possibly leaving this present situation in place for
6 a week or more, presumably the Governor is going to have to
7 revisit that recommendation as to pregnant women and small
8 children.

9 CHAIRMAN HENDRIE: Pregnant women and so on. Yes.

10 COMMISSIONER BRADFORD: Is there any thought given
11 to -- of course that concern does primarily does mean a
12 question of the possibility of small releases. That, of
13 course, it is not the only concern in the situation and may
14 not even be a dominant concern as quiet as it is now. Two
15 if he relaxes that, at the same time saying something to
16 the effect that if you don't have to be close-in to the
17 plant until we get that under control, don't be. That is,
18 it is not that the evacuation is over but it is just
19 something that continues to caution people that things
20 aren't completely back to normal.

21 CHAIRMAN HENDRIE: I don't know whether he can
22 cut it that fine, Peter.

23 COMMISSIONER BRADFORD: But what I'm concerned
24 about is that obviously at the point where he drops that
25 advisory, which he may feel he has to do if he foresees

1 the situation going on for a couple of weeks and we don't
2 anticipate even small releases, that that not at the same
3 time be a signal that the crisis is over and you don't have
4 to worry.

5 CHAIRMAN HENDRIE: I think whatever he says in
6 connection with a removal of his recommendation for
7 pregnant women and pre-school children, you know, he strikes
8 me as a pretty sensible guy -- you know -- the things that
9 he has said have been very sensible in his regard, and I'm
10 sure that they will be couched in the terms which says that
11 you know, we continue to have a situation at the plant that
12 is not free of all potential problems. I think that kind
13 of background tone can be added to it, but I don't -- I
14 kind of had the feeling last night that he would find it
15 difficult to find some intermediate cut between a recommen-
16 dation -- not a mandatory, but a recommendation that pregnant
17 women and preschool children stay away from within five
18 miles of the plant, and to find an intermediate cut that
19 says, well, if he removes that recommendation, on the other
20 hand, if you don't have to come back don't. I have just got
21 a notion that ---

22 COMMISSIONER AHEARNE: That's too fine a distinction.

23 CHAIRMAN HENDRIE: -- that he will find himself
24 then trapped unable to answer the question: Governor, are you
25 telling me to ask my wife to come back or not to come back?

1 Say yes or no.

2 COMMISSIONER BRADFORD: Well, what's happened is
3 that he's rather substantially simplified the evacuation
4 situation for one set of reasons which may not continue to
5 be his concern, on the other hand, you want to still have
6 the -- it seems to me that assurance that ---

7 CHAIRMAN HENDRIE: Well, I tell you, Middletown is -
8 I guess the population of Middletown is at about 15 percent
9 of normal. The other towns in the area ---

10 COMMISSIONER GILINSKY: Fifteen?

11 CHAIRMAN HENDRIE: Yes.

12 There are a substantial number of people who have
13 left from as far away as Harrisburg and other places off in
14 the 20 to 30 mile range.

15 COMMISSIONER BRADFORD: I have heard of some people
16 who left Washington, too.

17 (Laughter)

18 CHAIRMAN HENDRIE: What, after my somewhat equivocal
19 announcement at the press conference that I wasn't concerned
20 about Washington, which might be for other reasons than
21 radioactive ---

22 COMMISSIONER GILINSKY: By the way, I wonder if it is
23 clear that pregnant women are covered by this one -- the
24 dotted line in the Column B, projected doses of 1 rem whole body
25 or 5 rem thyroid stay inside. That basically covers

1 children and pregnant women, and --

2 CHAIRMAN HENDRIE: But not others? I ---

3 COMMISSIONER GILINSKY: Well, you are basically
4 throwing everybody into the same group. In other words ---

5 COMMISSIONER KENNEDY: Don't separate them.

6 COMMISSIONER GILINSKY: -- we are just saying that
7 you know, if you mapped out the doses and it is going to be
8 over 5 and you say, get out of there, if it is going to be
9 over 1, you say, stay inside.

10 COMMISSIONER AHEARNE: And that's the fine
11 tuning ---

12 COMMISSIONER GILINSKY: And that's the guideline
13 for pregnant women.

14 CHAIRMAN HENDRIE: Oh.

15 MR. KENNEKE: Everybody is controlled by the
16 limiting group.

17 COMMISSIONER KENNEDY: All right.

18 COMMISSIONER GILINSKY: That's where the "stay
19 inside" guidelines come from.

20 CHAIRMAN HENDRIE: I guess somebody pointed that
21 out to me and it just didn't get it.

22 No, I think, you know, the guidelines are
23 consistent with ---

24 COMMISSIONER GILINSKY: I guess what isn't on here
25 is that the -- it refers to two EPA guidelines and it is not

1 made clear that the one is for pregnant women.

2 CHAIRMAN HENDRIE: Yes. I tell you, I think these
3 are the EPA guidelines.

4 COMMISSIONER GILINSKY: Oh, yes, they are, exactly,
5 because ---

6 CHAIRMAN HENDRIE: I think it would be useful to
7 note that explicitly so that people aren't in any doubt
8 whether this is the same as the thing they have seen before --

9 COMMISSIONER GILINSKY: Right. This is exactly
10 following ---

11 MR. KENNEKE: The numbers also appear in the state's
12 emergency plans.

13 CHAIRMAN HENDRIE: Yes, I think it ought to ---

14 COMMISSIONER AHEARNE: Joe, are people being given
15 any kind of badges, at least the close-in people to sort
16 of keep track (f6) their ---

17 CHAIRMAN HENDRIE: There's a -- I don't think so,
18 because I ---

19 COMMISSIONER AHEARNE: You didn't notice then?

20 CHAIRMAN HENDRIE: No, and we didn't have badges
21 over there in the Command Center. People who went in the
22 plant had badges, but there is a very substantially enhanced,
23 I guess DOE's pulled in a really heavy blanket area monitor
24 of the situation. In fact, there was a report in the press
25 or the press implied that there wasn't anything up to that

1 time.

2 COMMISSIONER AHEARNE: Is it possible to get enough
3 badges to, at least, for this area?

4 CHAIRMAN HENDRIE: For all the people in the area?
5 I don't know. I would guess it would be possible. What are
6 we talking about, only a few thousand people, I would guess.

7 COMMISSIONER KENNEDY: A few thousand?

8 CHAIRMAN HENDRIE: Well, you are just talking about
9 maybe a couple of miles or ---

10 COMMISSIONER KENNEDY: Yes. Are you talking about
11 the general population or what?

12 COMMISSIONER AHEARNE: Yes, in that ---

13 COMMISSIONER BRADFORD: Yes, it would be a good
14 idea to at least get a good sample, I think ---

15 COMMISSIONER AHEARNE: Yes.

16 CHAIRMAN HENDRIE: Well ---

17 MR. THOMPSON: I think HEW is doing something along
18 those lines, I don't know precisely what they are, but I ---

19 CHAIRMAN HENDRIE: They may be badging people,
20 sort of on a sampling basis or something like that. I
21 don't know, and I'm not sure ---

22 COMMISSIONER AHEARNE: Vic, you didn't have the
23 long term.

24 COMMISSIONER GILINSKY: Well, I just put a line
25 down there on the bottom of page 2, just so it won't be --

1 I didn't fill it in, but it just flags it.

2 CHAIRMAN HENDRIE: Yes. Let's --

3 You can check and see what Harold thinks. I don't
4 know, maybe -- If we could -- Peg? (Chairman Hendrie
5 refers to his secretary.)

6 If we could get a squawk-box it would help so we
7 could get a quick rundown from Harold once a day.

8 MR. DORIE: Sure.

9 COMMISSIONER AHEARNE: In here?

10 CHAIRMAN HENDRIE: Yes, some convenient place,
11 and I think this would be a good room, because it allows us
12 to hold -- a convenient closed meeting or whatever else is
13 going on, and see what they think down at the site is a good
14 time. I'm not sure. My guess would be that maybe just
15 before, or maybe it would be better just after his morning
16 briefing or something like that, because he is just then
17 pulled together and there have been a set of questions, he
18 can tell us what he said and also indicate to us what some
19 of the questioning line was and what he said. Let us see
20 what we can do.

21 Okay, I think I'm going to have to sprint off.

22 Now, there are a series of items that we ought to begin to
23 turn to. I think there are sort of several areas, and I
24 think you began to discuss them yesterday.

25 One of them is, could a couple of commissioners ---

1 Think about what we ought to say to Governor Brown's --
2 that is the other B&W plant situation.

3 COMMISSIONER KENNEDY: We need to decide what it
4 is we are going to say generally to people about that, not
5 just Governor Brown.

6 CHAIRMAN HENDRIE: Yes.

7 COMMISSIONER KENNEDY: We have a telegram from
8 Mr. Dodđ and some other people ---

9 CHAIRMAN HENDRIE: Anyway, start to begin to think
10 about that so we can discuss it. I don't know, Vic, would
11 you take lead on that and keep track of it. Did you already --

12 COMMISSIONER GILINSKY: Does this involve a field
13 trip?

14 (Laughter).

15 COMMISSIONER KENNEDY: We already got in touch with
16 Governor Brown's office, b) provided him with a copy of
17 the paper that was sent out to the Regions, and c) reminded
18 him that there is an NRC person, a resident inspector ---

19 COMMISSIONER AHEARNE: Yes, of course, we now have
20 a telegram from him saying that ---

21 COMMISSIONER KENNEDY: Well, that was the telegram
22 he sent yesterday. He told us he was sending it.

23 CHAIRMAN HENDRIE: Yes. Okay ---

24 COMMISSIONER KENNEDY: He was sending it, you know,
25 without regard to our answers to him.

1 CHAIRMAN HENDRIE: And the other thing that I
2 think you were beginning to discuss yesterday was, you know,
3 once the ~~im~~mediate urgency of the operational situation dies
4 down a little bit, why, there are going to be questions about
5 who ought to investigate whom, and it seems to me these are
6 going to come on several levels.

7 We, the NRC, have clearly got a major post-mortem
8 effort that has to go on, so we understand what went on at
9 the plant and who did what to whom and why, and why they
10 thought was a good thing to do or not a good thing if they
11 didn't do it, because we have significant questions to deal
12 with about the plant, its design, operation and future actions
13 instructions with regard to design and administrative
14 procedures and so on. Clearly we are willing to do that.

15 There is also going to have to be a major investi-
16 gatory effort, I'm sure, with regard to ---

17 COMMISSIONER BRADFORD: How it all happened.

18 CHAIRMAN HENDRIE: Well, sort of in two stages.

19 How well organized was the government, notably,
20 NRC with a system which -- you know -- in terms of with
21 review of this plant's design and inspection and review of
22 its operation. This and other plants, generally, and I
23 suppose somebody will want to know, did we behave ourselves
24 in this particular incident.

25 Well, you know, I'd love to be in charge of those

1 investigations --

2 COMMISSIONER AHEARNE: And how not to ---

3 CHAIRMAN HENDRIE: -- but I doubt that option will
4 be offered. We might think about what sort of recommendations
5 we might make. The President has already said in Middletown
6 yesterday that we will want to look very carefully into this
7 event and understand what it was ---

8 COMMISSIONER BRADFORD: John's point has been that
9 in some measure, we should request that kind of an analysis.

10 CHAIRMAN HENDRIE: Well, you know, recognizing that
11 it is inevitable, and also, quite proper, I think -- you
12 know, our suggestions as to who and how, I think, are
13 pertinent to having that decision made and things set up,
14 and John would you ---

15 COMMISSIONER AHEARNE: Fine.

16 CHAIRMAN HENDRIE: -- and with the understanding on
17 these things and others that it is an effort to try to help
18 get our thinking started, and that the Commission has to
19 meet and discuss.

20 I'm going to have to sprint, and please go on,
21 I must say, for about four days, I have quit with the last
22 word in the Response Center about 3:00 a.m. thinking, okay,
23 I think maybe we are beginning to get our hands around it,
24 and by 7:00 o'clock in the morning when I'm back on the phone.

25 COMMISSIONER AHEARNE: This morning's crisis hasn't

1 come up yet.

2 CHAIRMAN HENDRIE: It hasn't happened. By George,
3 that's right. The 7:00 o'clock crisis hasn't ---

4 COMMISSIONER AHEARNE: Right.

5 CHAIRMAN HENDRIE: I regard that as a favorable
6 plan. ?

7 COMMISSIONER AHEARNE: That sounds like a damped oscillator

8 CHAIRMAN HENDRIE: In spite of the large error made
9 in the measurement, I regard this as a favorable ---

10 COMMISSIONER BRADFORD: But the last morning that
11 happened was Thursday.

12 (Laughter)

13 (Chairman Hendrie departed the meeting.)

14 COMMISSIONER AHEARNE: I'm not sure, what with the
15 source of the information disappearing --- what else
16 we could sit around and discuss.

17 COMMISSIONER KENNEDY: As far as fixing this
18 thing is concerned, we can discuss a little bit more about
19 people's concerns are. Well, I guess I understand it a
20 little ---

21 COMMISSIONER GILINSKY: Well, if they discussed it
22 and they tell you then don't have any other options, all
23 you can do is --

24 COMMISSIONER KENNEDY: I'm not altogether sure that
25 that's the way it is.

1 COMMISSIONER GILINSKY: Particularly if the time-
2 scale is becoming as big as it is.

3 COMMISSIONER KENNEDY: Well, I know why ---
4 (Simultaneous conversations amongst Commissioners.)

5 COMMISSIONER KENNEDY: -- they have taken in
6 sectors like that ---

7 COMMISSIONER GILINSKY: Yes.

8 COMMISSIONER KENNEDY: -- and in order to be
9 prepared to do something, they put people all over, that
10 means the resources have been distributed, you see.

11 COMMISSIONER GILINSKY: Yes.

12 COMMISSIONER KENNEDY: Now, if they want to
13 reallocate their resources, you don't need these resources
14 out here, but what you really need is these resources going
15 out there. They do have a problem, but it means an augmental
16 resource capability.

17 COMMISSIONER GILINSKY: Well, you don't want them
18 to move resources around, because another sector may have to
19 go at another time.

20 COMMISSIONER KENNEDY: That's exactly the nature of
21 the problem. That means considerably into this volume of
22 resources that are going to have to be mustered.

23 COMMISSIONER GILINSKY: I don't see why,--

24 (Simultaneous Commissioner conversations.)

25 COMMISSIONER BRADFORD: We should probably break.

(Whereupon, the above-entitled meeting was adjourned
at 1:02 p.m.)