

NUCLEAR REGULATORY COMMISSION

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IN THE MATTER OF:

METROPOLITAN EDISON CO.

OPERATIONAL - THREE MILE ISLAND

CLOSED MEETING

Place - Washington, D. C.

Date - April 4, 1979

Pages 1 - 12

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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.

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

CLOSED MEETING

OPERATIONAL - THREE MILE ISLAND

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

Wednesday, 4 April 1979  
6:05 p.m.

PRESENT:

- DR. JOSEPH M. HENDRIE, Chairman
- VICTOR GILINSKY, Commissioner
- RICHARD T. KENNEDY, Commissioner
- PETER A. BRADFORD, Commissioner
- JOHN F. AHEARNE, Commissioner

ALSO PRESENT:

- S. Chilk, L. Bickwit, L. Slaggie, B. McOsker, J. Stephens,
- D. Hassell, G. Mazuzan, J. Kelley, and R. Pine.

(THIS TRANSCRIPT WAS PREPARED FROM A TAPE RECORDING.)

Meeting

/4/79

EN MIKE

JWBeach

all

P R O C E E D I N G S

(6:05 p.m.)

1  
2  
3 COMMISSIONER AHEARNE: I ought to point out that  
4 the Admiral also informed me that any service that we want of  
5 anybody in the Navy should go to the Admiral --

6 (Laughter.)

7 COMMISSIONER AHEARNE: Even the Chief of Naval  
8 Operations.

CHAIRMAN HENDRIE: Do you want a carrier?

9 COMMISSIONER KENNEDY: Let's not knock it. You  
10 will recall that the Admiral's program works.

11 CHAIRMAN HENDRIE: But I got that straightened  
12 out, and the six health physics types are on their way. They  
13 need them now.

14 One of the things which Harold was concerned about  
15 last night -- I talked to him late. He'd just come back from  
16 a meeting with the GPU, B&W, the industry group down there,  
17 and he was concerned about the management organization again.

18 There is a very strong industry group down there.  
19 You know, you couldn't hire that kind of talent and put it in  
20 one place. B&W is now up to speed in churning out the  
21 material that the industry groups are cutting to pieces just  
22 like good regulators ought to.

23 Down here at the other corner of the -- down from  
24 those two is the operating organization at the plant, and at  
25 the intersection of all of this to make it go was poor Herman

1 DeCamp with his lieutenants Bob Arnold and Jack Herbein, and they  
2 just -- you know, it was too small and an intersect -- too in te  
3 of the resource and the strength, they're just too weak an  
4 intersection.

5 So I called the GPU Chairman of the Board this  
6 morning and told him he had to put that configuration in a --  
7 strengthen it, and what I recommended to him was that he call  
8 up Bill Lee and ask Lee to come down and sit in, in effect,  
9 as Herman's Operations Deputy to run the things that have to  
10 be done at the plant and get the arrangements, because, you  
11 know, Lee is a guy who will pick that up and just drive it.

12 So that went into place at about noon, and Lee is  
13 there, and Byron Lee is on his way, and the organization has  
14 shaken down very rapidly.

15 There is now -- Lee is now formally DeCamp's  
16 deputy with strong authority, and if there's any suggestion  
17 that it's not moving well, why I'll take further steps there.

18 Bob Arnold, who had been the plant super, is a Met  
19 Ed guy; he seems pretty good as the nominal operations  
20 manager, but Fred Stern, Combustions Vice President for doing  
21 things in one hell of a hurry, is the task force manager at  
22 his elbow, so that'll go.

23 There are about 250 industry types down there on  
24 that air base, and the Met Ed people are sort of now embodied  
25 into a network of strong people who will make it go.

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There is a plant modifications group working -- the working group for the plant, Burns and Rowe, and MacMillan and the industry people critiquing; there's a plant modifications combine under a Burns and Rowe guy; Westinghouse is putting together a spare residual heat removal system and we'll cart it up to the site and crank it in.

Ed Sterns has got, and personally, the Con Ed guy doing the Dresden decontamination has got the waste handling group in hand; and so on.

So, overall, Harold, this afternoon and this evening, is very much encouraged about that whole picture, and if it need anymore booting, why I'll boot it.

So that at least is highly on the favorably side.

I'm concerned from the briefing today, the fact that we felt we had to go public -- I think we had to. It was the first detailed laying out of what we think happened, and in spite of the fact that I said, you know, inevitably further information will change some of this, that will all be ignored, but it was a pretty good rundown, and we identified what we believe, have reasonable confidence, are the principal contributors to the difficulty.

And as I look at the list, you know, 3-1/2, or 4, or 4-1/4 out of 6 attach to the actions taken by the operators.

COMMISSIONER GILINSKY: Do you have that list?

Because I think that maybe ought to -- appear.

1 CHAIRMAN HENDRIE: Yes. I tried to write that down  
2 pretty carefully, Vic. Why don't you run --

3 COMMISSIONER KENNEDY: You've got it in that package  
4 that study gave you, didn't you? Did he give you  
5 that --

6 COMMISSIONER GILINSKY: No.

7 COMMISSIONER KENNEDY: No? You gave it back to  
8 him.

9 CHAIRMAN HENDRIE: It's that -- it's the things wrong  
10 in fact, you might want to run a copy of the whole thing.  
11 I was trying to keep a fairly careful note, because there  
12 wasn't a briefing paper on the table.

13 Now the thing that concerns me about -- you know,  
14 I dare say right now, on the radio and television and the  
15 newspapers are screaming, "NRC accuses plant operator of total  
16 foulup."

17 And, you know, I'm willing to let the chips fall  
18 where the chips have to fall, but what I'm worried about is  
19 destroying an effective working relationship between the NRC  
20 team and the operating staff down there.

21 So I -- immediately we came out of the meeting, I  
22 called Coons, the GPU Board Chairman, to alert him, to tell  
23 him, you know, I saw no way to avoid the adverse effects, but  
24 to assure him that we wanted to work -- to make that thing  
25 work down at the site.



1           Then I called down to the site to caution our team  
2 that when all of this hits the fan, everybody from the plant  
3 super and the B&W and everybody else, down to the lowest  
4 grade operator and maintenance man at the place is likely  
5 to be hostile, and watch out not to exacerbate what are  
6 clearly going to a difficult conditions, and try to maintain  
7 things.

8           Harold will be trying to maintain at least a modest  
9 separation, in the sense, and I've encouraged the thought that  
10 the site team is interested in, you know, in getting the plant,  
11 having the plant situation well under control, and that this  
12 autopsy material is going on up here, to try to at least  
13 separate them personally if not organizationally a little bit.

14           COMMISSIONER GILINSKY: Is this -- I assume the  
15 chronology is something that they went over with the people up  
16 at the site?

17           CHAIRMAN HENDRIE: They sent down the chronology  
18 and the things wrong sheet, you know, rapid-faxed it down. But  
19 the people in the trailers down at the plant are worried about  
20 getting the waste-gas tank pump back, and whether the pump will  
21 keep running, and what to do when the level instruments quit, and  
22 a lot of other things, and they regard this -- quite properly,  
23 from their standpoint -- as a lot of mickey mouse, which they  
24 haven't got time to spend any serious -- pay any serious  
25 attention to, and I think that's good, you know. Let them do

1 the job they have to do. If they have to stop and critique  
2 chronologies, and so on, why -- maybe in a couple of weeks;  
3 not this Wednesday afternoon.

4 Now with regard to where we go from here, the  
5 main thrust at the moment is: What do we do when the level  
6 instruments go out, assuming that they may?

7 And where should we go with regard to cooling down,  
8 knocking some of the pressure off, go to RHR, stay where we  
9 are, go to some other mode, what?

10 Let me just outline for you what the current  
11 thought is, understanding that it's still got a lot of  
12 critiquing and shaking down to do.

13 The feeling is that --

14 (Phone rings.)

15 CHAIRMAN HENDRIE: Oh, boy. Does somebody want to  
16 see what that's to do with?

17 The feeling is that we've probably got a fair  
18 amount of hydrogen in solution, that one of the places the  
19 bubble went was not to the containment or the letdown tanks,  
20 but just into the water, and I think that's right.

21 The experience at other plants suggests that it  
22 will take several days of full letdown flow, which they've now  
23 established, to degas and get the primary water pretty well  
24 free of hydrogen.

25 What they're looking forward to is a natural

1 circulation mode. There are sort of two long-term modes that  
2 are available. One is to go down on RHR, but that does involve  
3 bringing the primary water out of the containment, through  
4 the heat exchangers, through the RHR pumps, and shooting it back  
5 in, and people are scratching their heads and saying, "Gee,  
6 wouldn't it be nice to keep that hot water, radioactive hot  
7 water, in the containment?"

8           They can do that. You know, we're that way now,  
9 but again people don't want to rely for, you know, a very long-  
10 term operation, on keeping this recirc pump running, just  
11 because you can lose it and it takes a lot of electricity, so  
12 if you lose outside power, off-site power, it'll drop out on  
13 you.

14           So they're looking at natural convection cooling,  
15 and they believe with a degassed primary water -- because if  
16 you've got gas bubbles in it, why they'll kill the -- you  
17 know, kill the thermal buoyancy effect; for the degassed  
18 primary, for which they figure they need, oh, three to five  
19 days in the present mode; and that with -- come liquid solid  
20 in the primary system, keep it at a, maybe down a little from  
21 where it is in pressure, but not too different, and about the  
22 same temperature, 280 or something like that, to provide a  
23 good difference off the secondary side; and run the exchanger --  
24 fill the steam generator up liquid all the way.

25           And they've got Larry Berando (phonetic) in there

1 in the Barracks building now, which is a good thing, and they're  
2 calculating natural circulation, including taking into account  
3 the damaged core condition.

4 They think the first cut at it is that if they had  
5 both steam generators it would be a breeze, and it's pretty  
6 clear they're going to be okay with one, you know, a few days  
7 out, because the after-heat has come down.

8 Now that would offer, then --

9 COMMISSIONER KENNEDY: In a few more days, it'll  
10 be down even further.

11 CHAIRMAN HENDRIE: Yes.

12 So that would offer, after, oh, three, four, five  
13 days of degassing operation in the present mode of cooling,  
14 going over to a long-term natural circulation capability  
15 which would not bring primary water outside the containment.

16 And the RHR could then be on standby against that.

17 And of course then the other option of course is  
18 either sooner or late to come on to the RHR system, which they  
19 are doubling up and it will go forward, getting ready with  
20 coverage on the pits and the rest of it.

21 The next -- one of the next things that I have  
22 encouraged them to do, and that I encourage about once a day  
23 to please do as soon as they're reasonably able, is to pump  
24 those waste gas tanks back into the containment.

25 We've got two tanks about 80,000 cubic feet at

1 something like 80 or 90 pounds per square inch sitting out  
2 there in the auxiliary building, and it's just fine as long as  
3 the gas stays in the tanks. But if somebody opens a valve  
4 or some fool thing, why that's a big chunk of stuff.

5 And I'm not going to be -- you know, I'm not going  
6 to go "Whew!" until that's all back in the containment and  
7 those tanks are down to a low enough pressure so you wouldn't  
8 hardly get anything out of them.

9 The activity is decaying, but it's still got a long  
10 way to go before it comes down. They say the hookup is about  
11 ready, but -- and they might have started it by now -- but  
12 the primary effort has been going into getting -- to shaking  
13 down the analysis and getting ready for possible natural  
14 circulation mode, and some of these other things, and what to  
15 do about the level -- how to run when the levels go out.

16 COMMISSIONER BRADFORD: Has Harold solved the  
17 problem that was concerning him this morning of getting people  
18 to work on what was needed for standby, among other things.

19 CHAIRMAN HENDRIE: On all the right things?

20 COMMISSIONER BRADFORD: Yes.

21 CHAIRMAN HENDRIE: That was the management problem,  
22 the fact that this little group of -- these three Met Ed, or  
23 GPU guys were the intersection of enormous forces and were  
24 incapable of managing and transmitting the stuff effectively.

25 COMMISSIONER BRADFORD: But having solved it on

1 paper, the right things now are underway?

2 CHAIRMAN HENDRIE: I think so. When I talked to  
3 Harold this afternoon he was really --

4 COMMISSIONER BRADFORD: He's clearly much happier  
5 about it.

6 CHAIRMAN HENDRIE: -- feeling rather elated about  
7 the way things had developed, and having known Mr. William  
8 Lee for a long time, all I can say is there's a lot of dust  
9 flying down there around Three Mile Island now.

10 He will come down from Duke with a working force  
11 of staff aides, GPU may never recover.

12 Anyway, so we want to get those waste gas tanks  
13 emptied back into the containment so there isn't that capa-  
14 bility for release.

15 They tell me that each tank -- there are two --  
16 would be worth about .6 percent hydrogen in the containment.  
17 The recombiner's been running. We've already -- we've come  
18 down just below 2 percent, judged by the recombiner tempera-  
19 ture conditions, and so on; so that you could dump both just  
20 abruptly and still not go flammable in the containment, but one  
21 would want to do that with, you know, throttled flow so that  
22 you didn't do anything abruptly.

23 And one of the things they've been waiting to get  
24 in place is they've had flame arresters flown down, and  
25 Roger's got two in each return line, because that gas is about,

1 what, 50, 60 percent hydrogen in the waste gas tanks.

2 Okay, that's the size of it.

3 COMMISSIONER BRADFORD: Let's see, 50 or 60 percent  
4 hydrogen --

5 CHAIRMAN HENDRIE: "56" is the number that sticks  
6 in my mind, but there have been a lot of numbers.

7 COMMISSIONER BRADFORD: I've learned just enough  
8 about oxygen and hydrogen to be dangerous in the last week,  
9 but how much --

10 CHAIRMAN HENDRIE: You know the question to ask.

11 COMMISSIONER BRADFORD: -- but how much oxygen is  
12 in there with it?

13 CHAIRMAN HENDRIE: By George, another couple of  
14 incidents and we'll have you ready for a PE license in  
15 nuclear engineering, Peter.

16 There isn't any.

17 COMMISSIONER BRADFORD: Ah.

18 (Laughter.)

19 COMMISSIONER AHEARNE: You can tell by the grin.

20 (Whereupon, at 6:25 p.m., the meeting was adjourned.)  
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