

# OFFICIAL TRANSCRIPT OF PROCEEDINGS

**Agency:** Nuclear Regulatory Commission  
Incident Investigation Team

**Title:** Nine Mile Point Nuclear Power Plant  
Interview of: MARK BODOH

**Docket No.**

**LOCATION:** Scriba, New York

**DATE:** Monday, August 19, 1991

**PAGES:** 1 - 32

**ANN RILEY & ASSOCIATES, LTD.**

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Exhibit 3-1 (continued)

ADDENDUM TO INTERVIEW OF MARK A. BODOH / NAOE (R.O.)  
(Name/Position)

<u>Page</u>	<u>Line</u>	<u>Correction and Reason for Correction</u>
3	17	Clarify "everything"; Control Rm indications, plant parameters and annunciators
3	18	Delete "I guess". Poor choice of words. Change "give" to relay
4	20	Change As I came into the "At the controls" area of the Control Rm.
6	1	86 relays were all TRIPPED.
6	25	Delete "just". Change "at" to of
7	1	and he had directed an Auxiliary Operator to continuously monitor R vessel level and pressure. Clarify what direction SSS had given.
7	3	Change "hit" to <sup>we</sup> Vessel level reached
7	5	Change "what" to which. Poor grammar
7	19	I informed the SSS
7	22	An Auxiliary Operator had been directed
8	10	take the actions to ensure that the Feed Pump
8	12	available for service, but it had
9	25	narrow range level instrumentation
10	3	vessel level

Page 1 of 2 Signature Mark A. Bodo Date 8/25/91

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Exhibit 3-1 (continued)

-3-

ADDENDUM TO INTERVIEW OF MARK A. BODOH / NADE (RO)  
(Name/Position)

<u>Page</u>	<u>Line</u>	<u>Correction and Reason for Correction</u>
10	11 & 12	last word on line 11 should be subsequent. subsequent well. doesn't cause further problems.
12	19 & 20	It's up to the SSS's discretion as to what level bond he would like maintained.
13	2 & 3	to tank to tank, taking a suction from the CST and returning to the CST.
13	11	looking for any rod position indication and
14	19 & 20	<del>This was the first</del> Clarify - SRM's are invalid while being inserted or moving into the core. At this time SRM's were fully inserted & gave valid indication of pos.
17	11	we had secured injection to the vessel
19	24 & 25	<u>ROD</u> WORTH MINIMIZER
22	2	Change "2 or 2.3" to 202.3.
23	2	Delete when power was restored
23	8	Change "assert" to insert
24	2	Change "4" to for
24	5	Delete

Page 2 of 2 Signature Mark A. Bodoh Date 8/23/91

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1. 2. 3. 4.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
INCIDENT INVESTIGATION TEAM

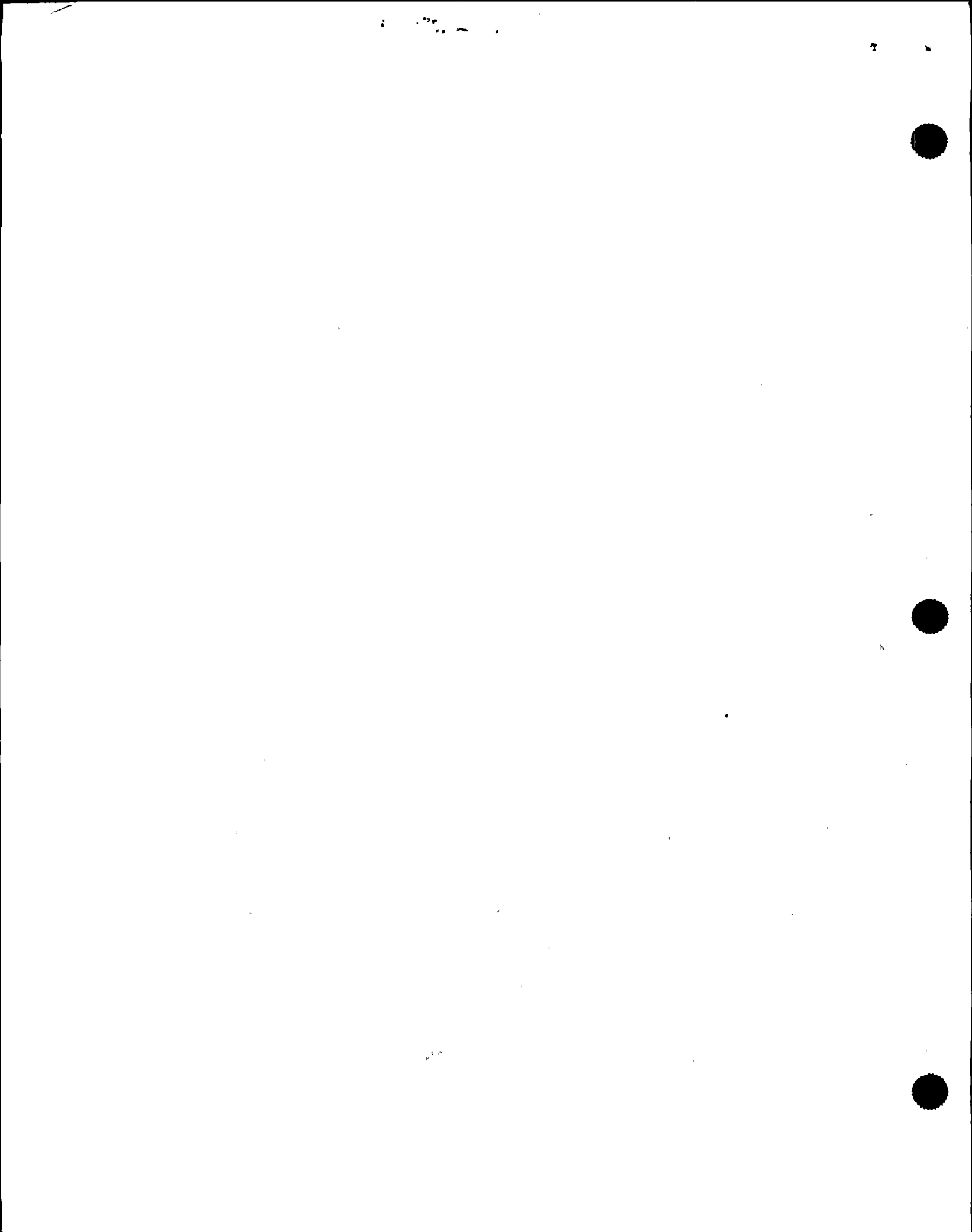
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Interview of :  
MARK BODOH :  
(Closed) :  
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Conference Room B  
Administration Building  
Nine Mile Point Nuclear  
Power Plant, Unit Two  
Lake Road  
Scriba, New York 13093  
Monday, August 19, 1991

The interview commenced, pursuant to notice,  
at 10:22 a.m.

PRESENT FOR THE IIT:  
John Kauffman, NRC  
William Vatter, INPO  
PRESENT WITH MR. BODOH:  
Mike Colomb, Niagara Mohawk





## P R O C E E D I N G S

[10:22 a.m.]

MR. KAUFFMAN: It's August 19 at 10:22 a.m. We're in the Nine Mile Point, Unit Two, P admin building. We're here conducting an interview of Mark Bodoh concerning the Nine Mile Point Two event of August 13, 1991.

I'm John Kauffman, NRC. I'll be leading the interview.

MR. VATTER: I'm Bill Vatter. I work for INPO.

MR. COLOMB: I'm Mike Colomb. I work for Niagara Mohawk. I'm the operations manager at Unit Two.

MR. BODOH: I'm Mark Bodoh. I'm a reactor operator, control room operator. I've had a license for approximately -- a little over a year and a half. Prior to that I was a non-licensed operator, and prior to that I was a nuclear machinist's mate in the Navy for six years.

MR. KAUFFMAN: Okay, Mark. My understanding is, you were on the midnight shift the night that the UPS transformers were lost. I'd like for you to tell us the plant conditions, a little bit about the equipment out of service prior to the event, and then, when the event occurred, the indications you saw and the actions you took and that others were taking, to the best of your recollection.

MR. BODOH: You want me to give you a dissertation



1 of everything I saw and did?

2 MR. KAUFFMAN: As best you can. At certain  
3 points we may interrupt and ask questions about specifics,  
4 but just kind of walk us through the event, if you can.

5 MR. BODOH: All right.

6 MR. VATTER: Maybe you could start by saying in  
7 general what your responsibility was during the shift and  
8 where you were before it happened and when it happened, that  
9 kind of thing.

10 MR. BODOH: I was the control room reactor  
11 operator. My specific duties are to take direction from the  
12 CSO and monitor the electric plant and balance of plant.  
13 That's not all that I do. The CSO and myself basically  
14 share the responsibilities of monitoring both the reactor  
15 plant, the electric plant, and the balance of plant.

16 Normal shift duties, aside from monitoring  
17 everything, is to respond to annunciators in the control  
18 room and, I guess, give orders to the non-licensed personnel  
19 in the plant in accordance with what's put out at the night  
20 notes. As such, I'm not specifically assigned to be in the  
21 control room the whole time. At the time of the incident, I  
22 was in the locker room. I was changing my shoes. This was  
23 just prior to the event.

24 MR. VATTER: You had taken a break to go out of  
25 the locker room?



1 MR. BODOH: That's correct.

2 MR. VATTER: What was your reason for going there?

3 MR. BODOH: I was changing my shoes. Normally I  
4 wear tennis shoes. If I have to go out in the plant, I have  
5 safety shoes that I put on, so I put them on at the  
6 beginning of shift and I change them just prior to the end  
7 of shift.

8 MR. VATTER: Oh, okay. So you were getting ready  
9 for the end of shift.

10 MR. BODOH: For shift turnover, correct.

11 In the locker room, I heard a boom, and the lights  
12 dimmed. Immediately I called the control room on the  
13 telephone and talked with the CSO. I asked him what was  
14 going on. His response at that time was, I don't know. I  
15 told him that I was on my way up to the control room.

16 Upon entering the control room, the biggest thing  
17 I noticed -- I came in the back door -- was that it was  
18 very, very quiet. Normally you hear the alarm typers or  
19 printers; you hear the fans; there was no sound whatsoever.  
20 It was very, very quiet. As I came up at the controls area,  
21 I noticed that we had no annunciators, except for a few that  
22 were flashing, but there were no sounds, no audible alarms.

23 MR. VATTER: Excuse me. When you came into the  
24 control room, was Don Bosnic coming into the control room at  
25 about the same time? Do you remember seeing him?



1 MR. BODOH: Not when I first entered.

2 MR. VATTER: That was later.

3 MR. BODOH: Yes.

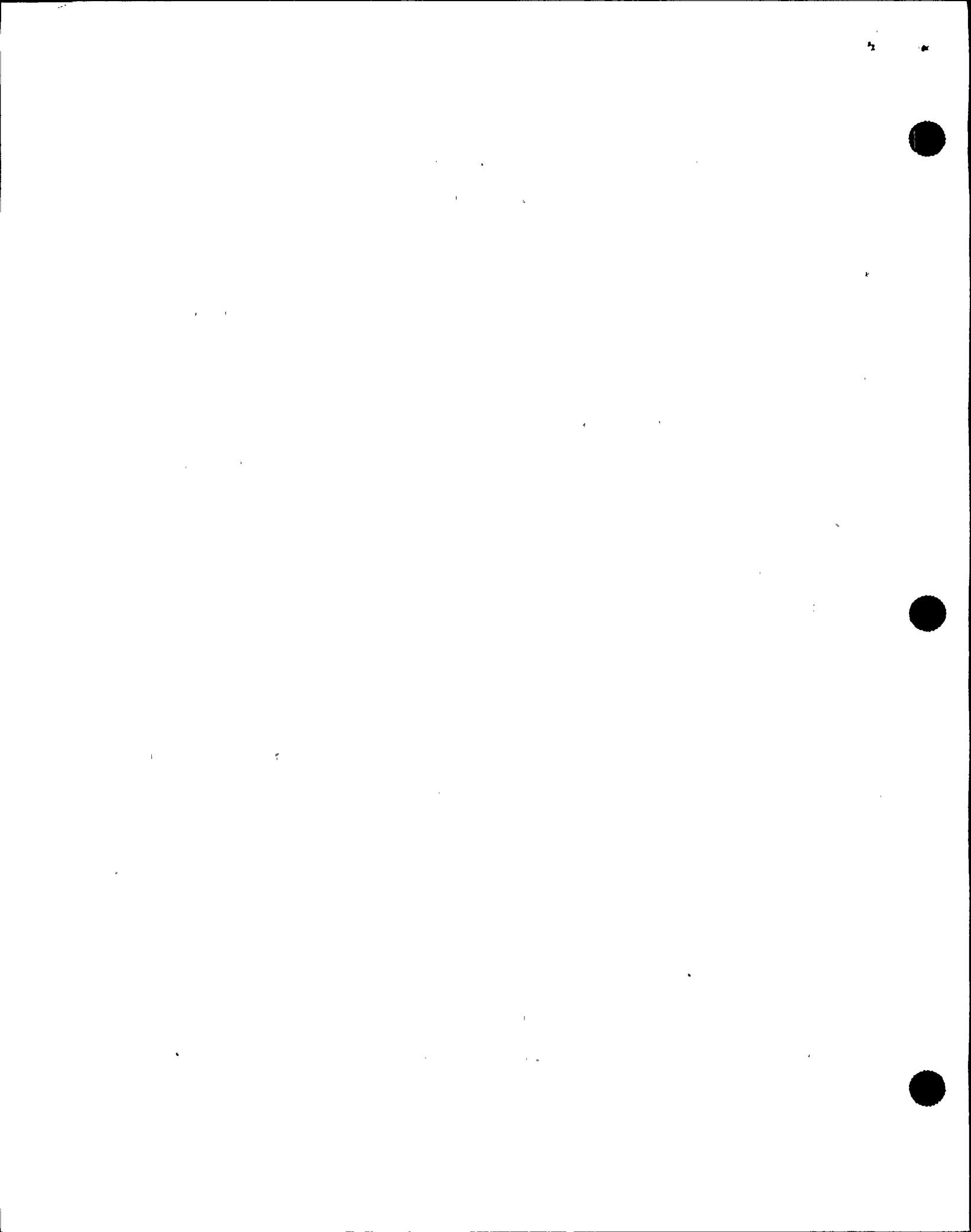
4 MR. VATTER: Okay. Excuse me. Go ahead.

5 MR. BODOH: Upon entering the control room, the  
6 SSS, Mike Conway, directed me to go to the relay room and  
7 look at our relay instrumentation for the normal station  
8 service transformer. I exited the control room and, on my  
9 way down, noted that we had no emergency lighting or egress  
10 lighting in the hallways going down to the relay room.

11 MR. KAUFFMAN: Can you give me -- I'm not  
12 familiar with your plant. If you could tell me the  
13 elevations.

14 MR. BODOH: I left from elevation 306, and I was  
15 headed to elevation 288 in the control building. In the  
16 stairwell, there were no lights. I didn't have a flashlight  
17 with me when I exited the control room. At that time I felt  
18 a sense of urgency to get to the relay room to see what  
19 indications we had for the normal station service  
20 transformer, so I used the handrail and went cautiously down  
21 the stairs. Roughly halfway down to the elevation, you  
22 could see light coming through the door from the next  
23 elevation, so I continued down.

24 I entered the relay room, and I went to the normal  
25 station service transformer relaying. I noted that the





1 primary and backup protection -- the 86 relays were all in,  
2 the lock-out relays. I also noticed that we had the  
3 generator phase differential over current flagged. At that  
4 point I headed back up to the control room and relayed that  
5 information to the SSS. Then I stationed myself at panel  
6 603 to see if I could determine what reactor power, reactor  
7 pressure, and reactor vessel level were.

8           The mode switch was already in shutdown, and a  
9 portion of the immediate scram actions had already been  
10 carried out.

11           MR. VATTER: Do you know who put the mode switch  
12 in shutdown?

13           MR. BODOH: The CSO.

14           MR. VATTER: And you were there when that  
15 happened?

16           MR. BODOH: No, I was not.

17           MR. VATTER: Was that between the time that you  
18 left to go to the relay room and came back that that  
19 happened?

20           MR. BODOH: That was done prior to my first  
21 entering the control room.

22           MR. VATTER: Okay. Thank you.

23           MR. BODOH: When I got to panel 603, vessel level  
24 at that point was just -- I'm not sure of the exact level.  
25 We were just above the EOP setpoint at 159.3, and the SSS



1 had gone to the EOP desk, and he had directed -- At that  
2 point we weren't in the EOPs. The CSO had stepped back.  
3 While I was monitoring the 603 panel, we hit 159.3, which is  
4 our entry level for the emergency operating procedures. The  
5 SSS asked for what systems we had available for injection.

6 At that point, I noted that the feed pumps had  
7 both tripped. The Alpha condensate booster pump had  
8 tripped, and the Charlie condensate booster pump had  
9 started.

10 MR. VATTER: The Bravo pump was --

11 MR. BODOH: The Bravo pump was running and  
12 continued running.

13 MR. VATTER: Is that the first time that you  
14 noticed that the feed pumps had tripped?

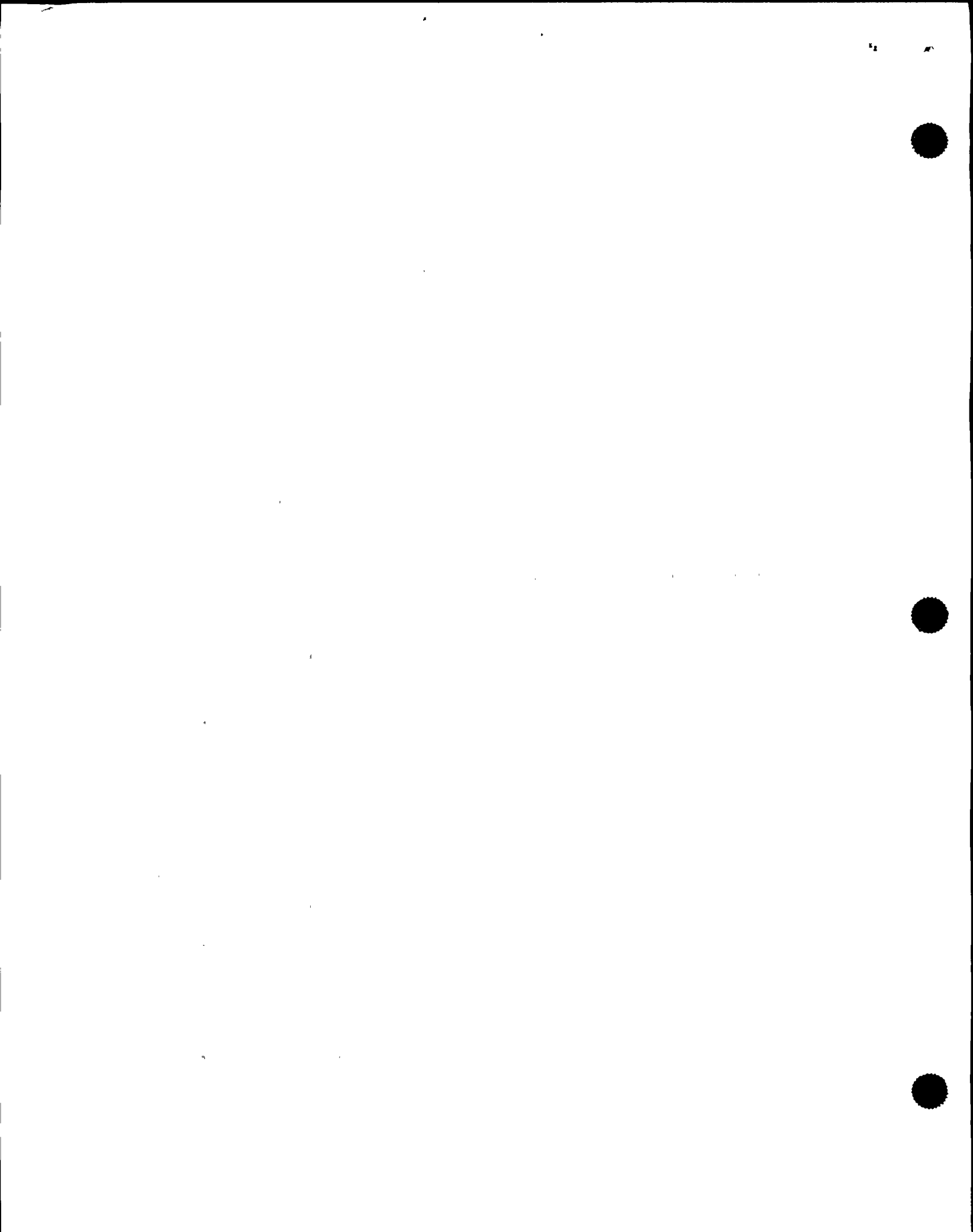
15 MR. BODOH: Yes.

16 MR. KAUFFMAN: And that's after you had gone to  
17 the relay room.

18 MR. BODOH: That's correct.

19 I informed that we had two condensate booster  
20 pumps and two condensate pumps available for injection. At  
21 that point our pressure was roughly around 960 pounds.  
22 Another operator was directed to monitor reactor vessel  
23 level and reactor pressure using the post-accident  
24 monitoring recorders.

25 MR. VATTER: Was there any attempt to restart a



1 feed pump?

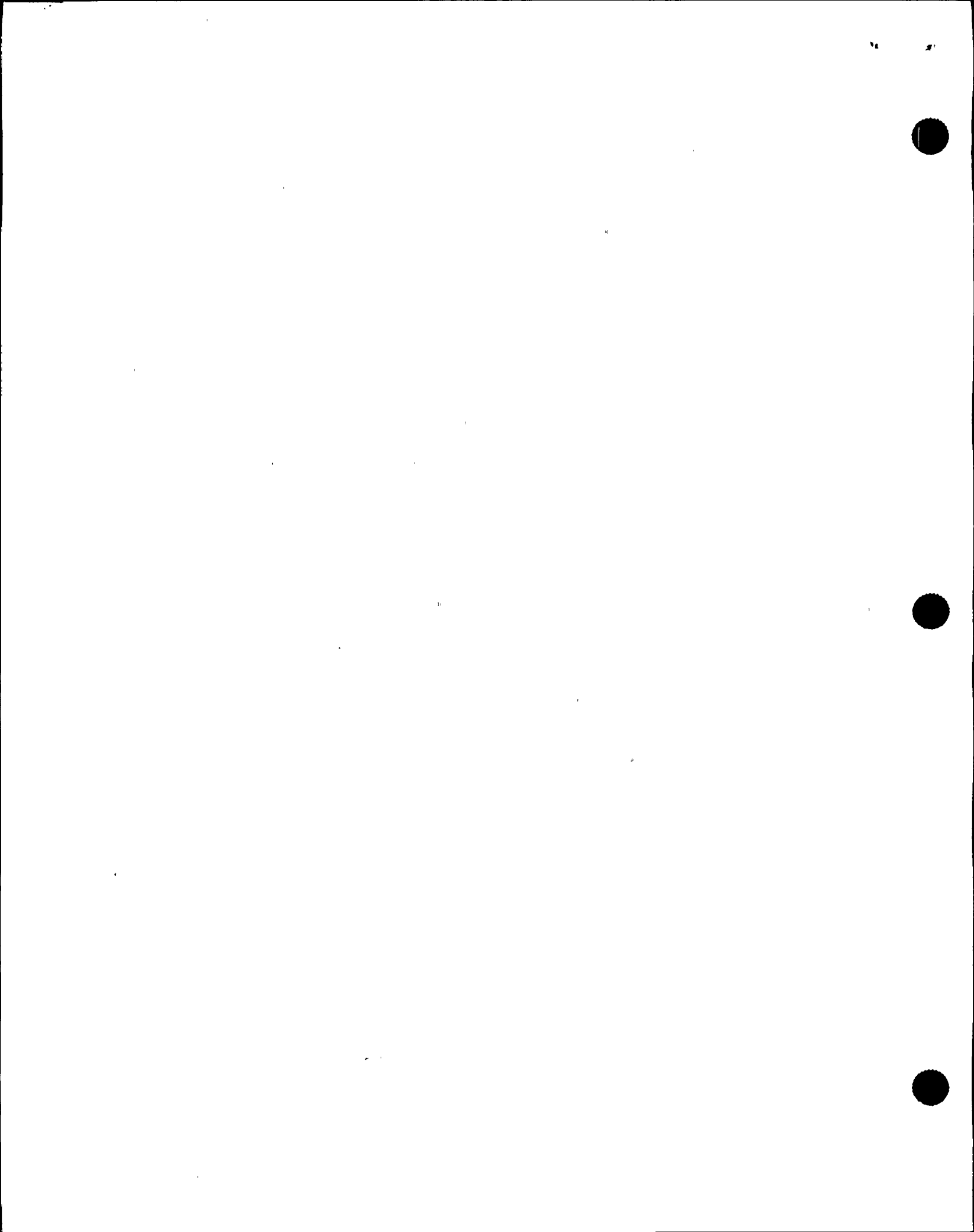
2 MR. BODOH: No.

3 MR. VATTER: What does the procedure say about a  
4 feed pump if it's tripped? To just leave it off and use  
5 other water sources?

6 MR. BODOH: I would look at our procedure for a  
7 tripped feed pump, and I would have to look at that to tell  
8 you exactly what it says. Normally, before we get to a  
9 condition where we're going to have to trip a feed pump, we  
10 take the action so that we make sure the feed pump is in  
11 standby and ready to operate. At this point, the feed pump  
12 had been warmed up and was available for service and had a  
13 hold out on it -- the one pump that we weren't operating,  
14 which was Alpha. It had a hold-out on it because we needed  
15 for Chemistry to obtain a sample due to a maintenance  
16 activity where we had to inject some fermanite into a  
17 leaking valve, and they wanted to sample that prior to  
18 placing it in service to see that we didn't have any  
19 contaminants possibly leaching out of the fermanite that we  
20 put in and possibly causing us problems with the reactor  
21 plant chemistry.

22 MR. VATTER: What would you have needed to do to  
23 start a feed pump -- just turn it on, or is there to it than  
24 that?

25 MR. BODOH: Once the feed pump is in standby, if



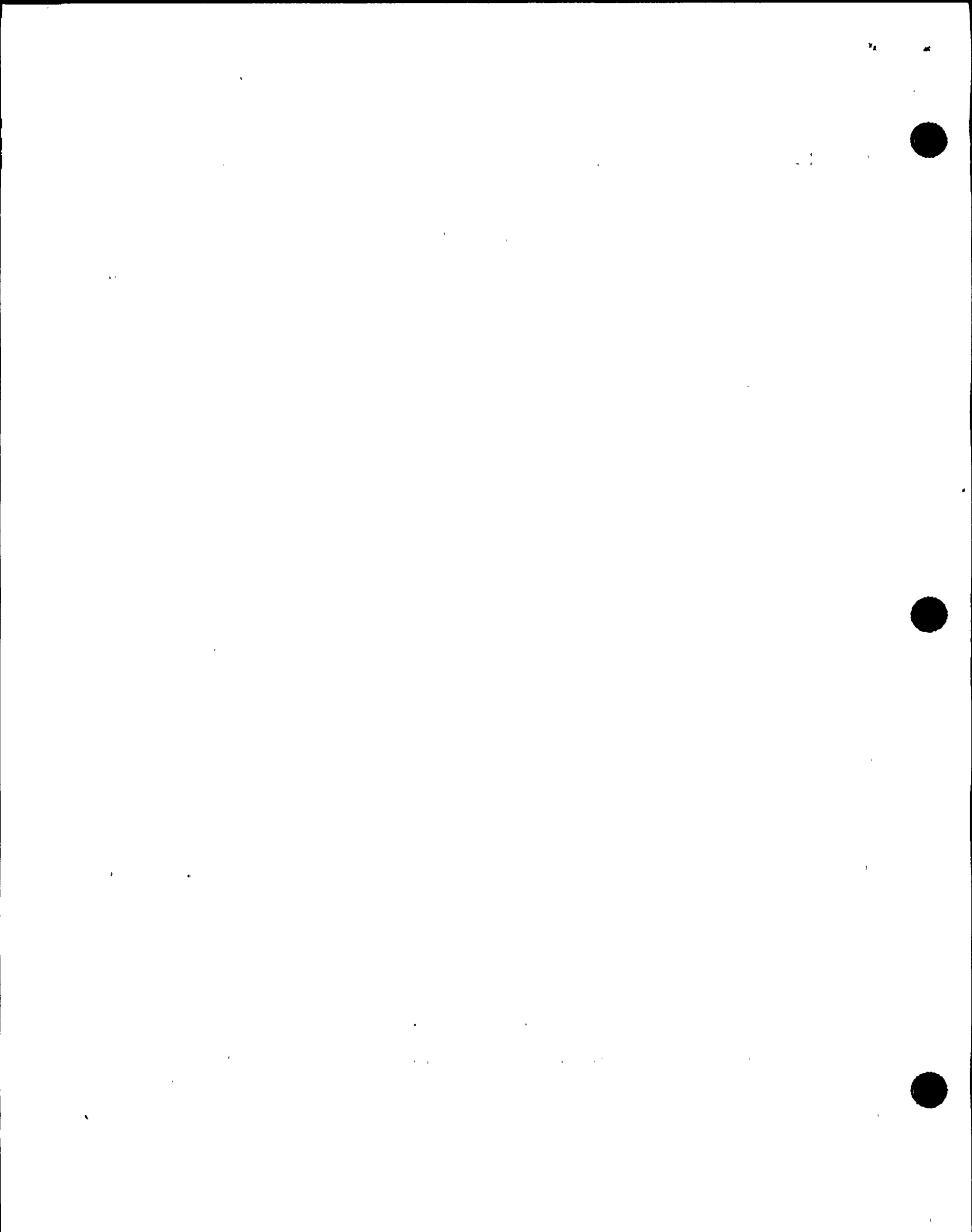
1 the SSS directed that the feed pump be started, we would  
2 still send an operator down and have him look everything  
3 over quickly before we actually started it.

4 MR. VATTER: To put it in standby required you to  
5 do what?

6 MR. BODOH: There is a whole series of valve line-  
7 ups, checking to see that there is seal water, checking to  
8 see that there is cooling in your normal valve line. Along  
9 with that, an operator would also have to be sent down to  
10 the con-demin system to make sure that we had the proper  
11 line-up for demineralizers in service or take them out of  
12 service, as necessary, to support the starting of the feed  
13 pump.

14 When we entered the EOPs on vessel level, the SSS  
15 directed the CSO to manually initiate reactor core isolation  
16 cooling, to restore vessel level. The CSO verified that the  
17 turbine had tripped, and he manually initiated reactor core  
18 isolation cooling using the manual initiation pushbutton.  
19 At first, the controller is in automatic, and there was some  
20 erratic operation of reactor core isolation cooling, so the  
21 CSO took manual control and operated it manually until he  
22 got all his parameters stabilized to inject to the vessel.

23 During this time, I was still trying to see if I  
24 could find any indication for where the rods were, what  
25 power was. I noted also that narrow range instrumentation





1 for the A channel was down-scale. Bravo and Charlie were  
2 indicating a normal condition for the scram.

3 MR. VATTER: Which was about what?

4 MR. BODOH: I would be speaking from simulator  
5 experience on what vessel would be following the scram.

6 MR. VATTER: So you don't remember what they were  
7 reading this time?

8 MR. BODOH: Initially upon the scram, it hadn't  
9 reached 159.3. At 159.3 we received our setpoint set-down,  
10 which reduces the setpoint to maintain vessel level lower,  
11 so that, after the water is added to the vessel and the subs  
12 can swell, the cooler water doesn't cause us further problem  
13 by possibly swelling to a point where we would reach our  
14 high setpoint and possibly secure our injection, trip our  
15 feed pumps.

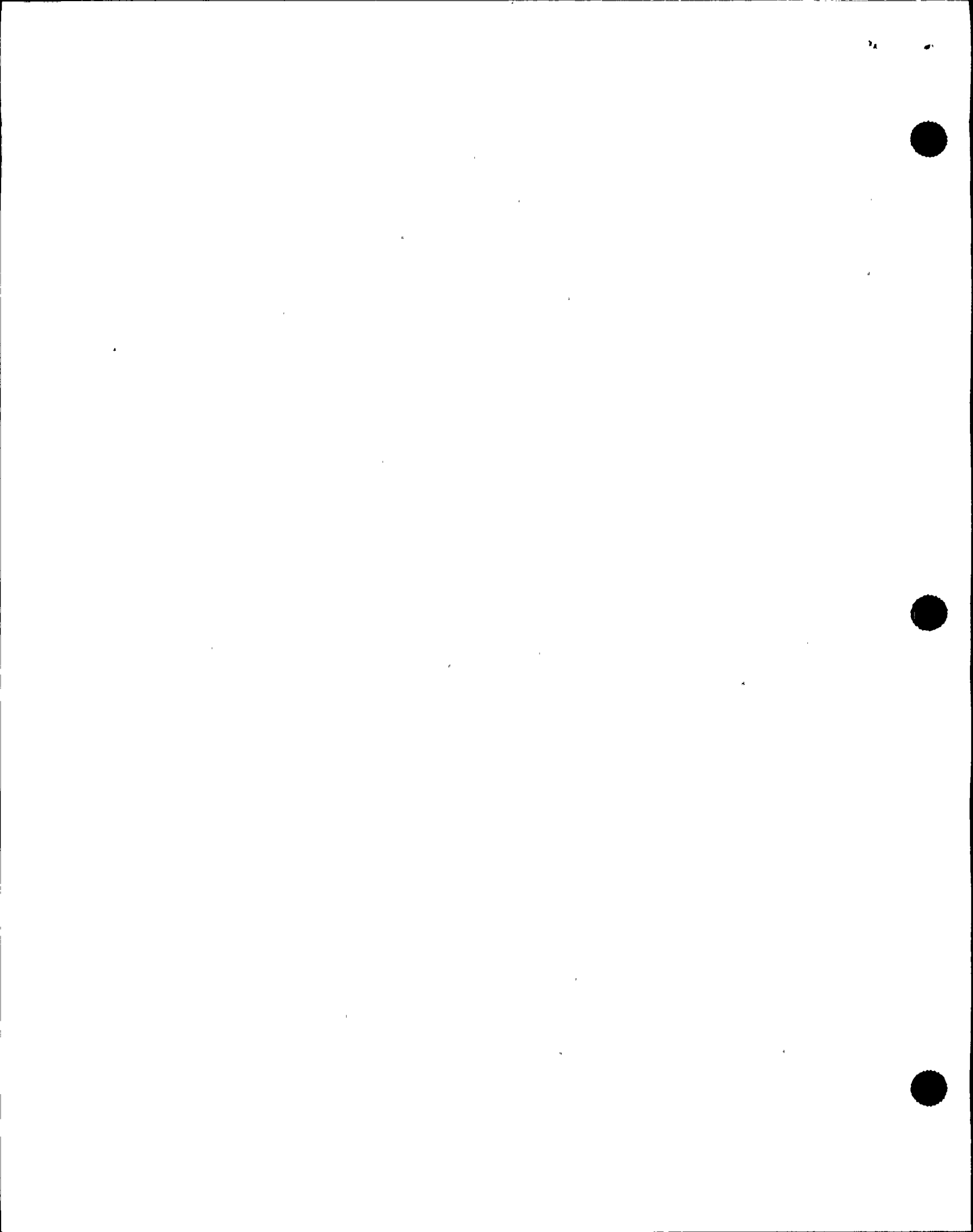
16 Initially I don't know exactly what level was. I  
17 know it was about 159.3.

18 MR. KAUFFMAN: About long into the event are we  
19 talking here about, 6:00, 6:05, 6:10? We're trying to get a  
20 ball park on times, because normally we have alarm print-  
21 outs.

22 MR. BODOH: Right.

23 MR. KAUFFMAN: Just a ball park.

24 MR. BODOH: This was prior to 6:00. This was,  
25 I'll say, approximately seven, eight minutes into the



1 incident.

2 From here, a couple other relief operators and an  
3 operator off the other shift -- reactor operators -- had  
4 come into the control room. One operator was directed to  
5 place RHS loop Alpha in suppression pool cooling, and  
6 another operator was directed to take level control with  
7 reactor core isolation cooling.

8 MR. KAUFFMAN: Do you recall what level band he  
9 was asked to maintain?

10 [Pause.]

11 MR. KAUFFMAN: It's okay if you don't remember.

12 [Pause.]

13 MR. BODOH: I know what level band he would have  
14 been asked to maintain, but I don't remember specifically  
15 hearing it.

16 MR. KAUFFMAN: Okay. You didn't hear it, but  
17 what level band was appropriate?

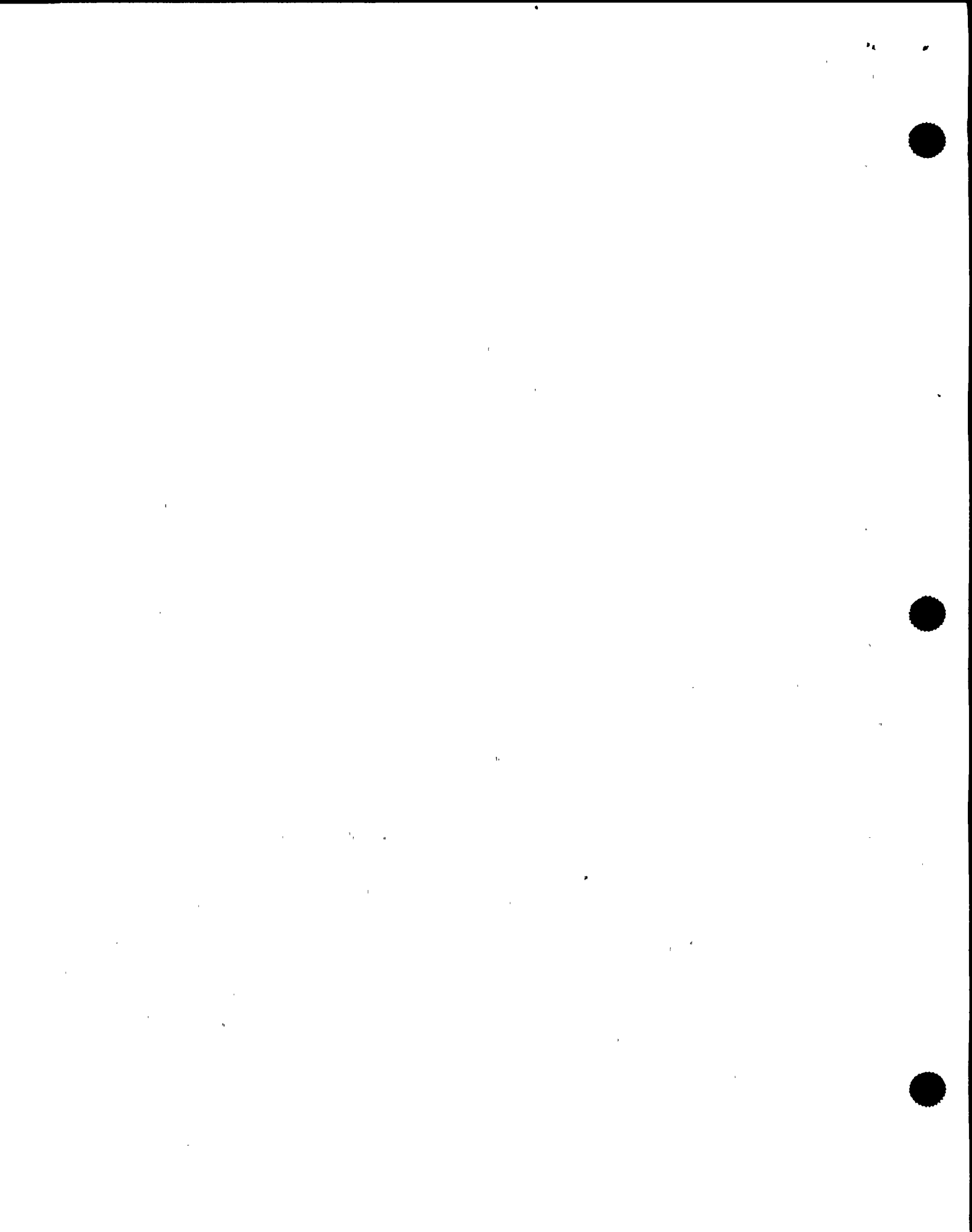
18 MR. BODOH: From 159.3 to 202.3.

19 MR. KAUFFMAN: That's what they would have  
20 typically asked?

21 MR. BODOH: Yes.

22 MR. KAUFFMAN: But you don't recall hearing them  
23 ask this time.

24 MR. BODOH: I know he asked for a band, but I  
25 can't recall what parameters he said.



1 MR. KAUFFMAN: That's fine.

2 MR. COLOMB: Can I ask a question?

3 MR. KAUFFMAN: Sure.

4 MR. COLOMB: You said, what level band would have  
5 been appropriate. I'm not sure what Mark's basing that  
6 "would have been appropriate" on, but --

7 MR. VATTER: Okay. Some clarification. What  
8 would he have expected to hear, based upon experience in the  
9 simulator, probably more than anything.

10 MR. BODOH: Our EOPs directed us to restore and  
11 maintain vessel level, 159.3 to 202.3.

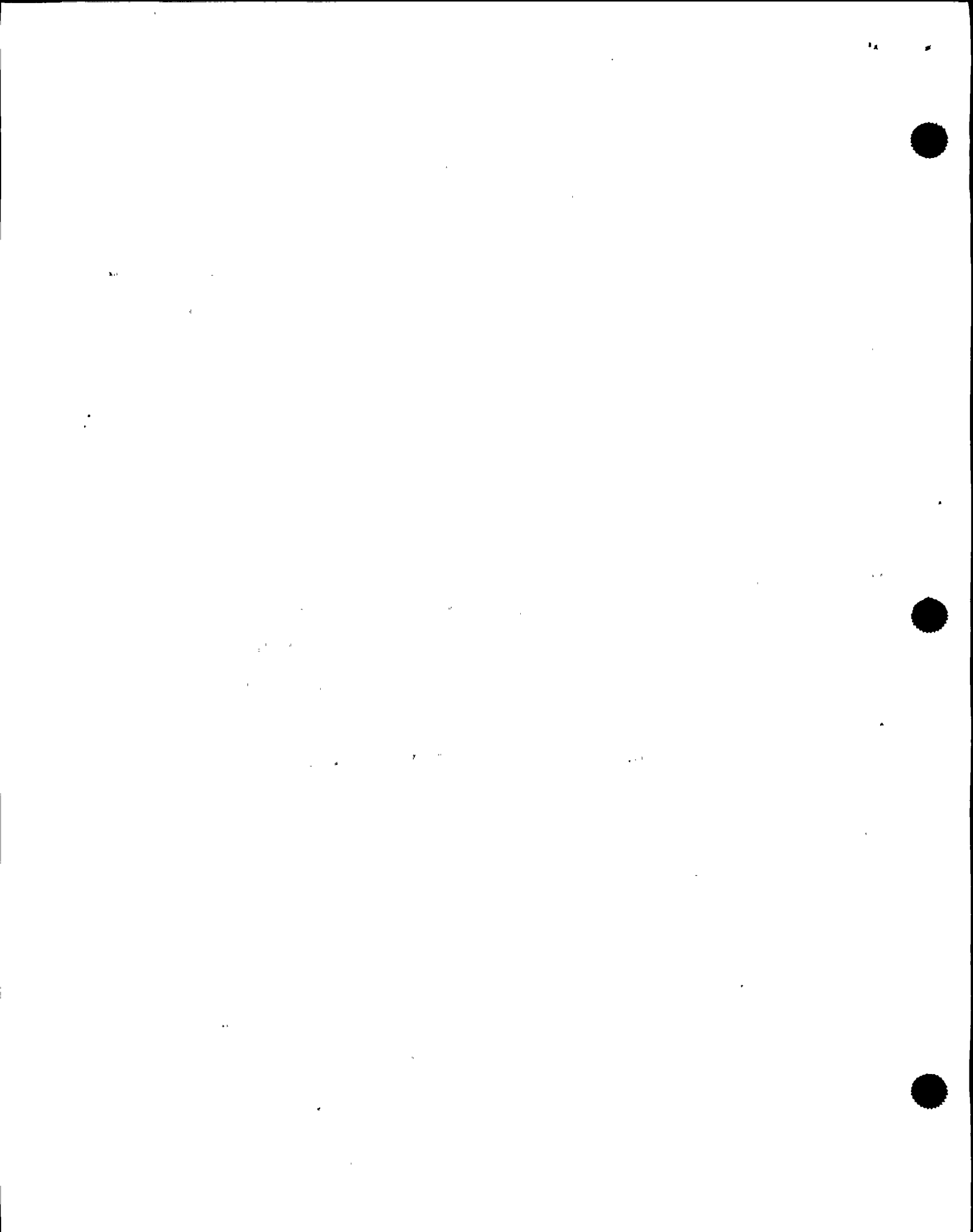
12 MR. VATTER: Right. What I'm really driving at  
13 is, would it have been common to have a more narrow band  
14 than that for a guy controlling RCIC? Is that what they  
15 typically do in the simulator, control at 159.3 to 202.3, or  
16 could they --

17 MR. BODOH: That is what is directed by our EOPs.

18 MR. VATTER: Okay. That's fine.

19 MR. BODOH: I mean, what's up to the SSS's  
20 discretion, what band he gives to the operator.

21 At this point, level was being restored, and we  
22 did have indication that level was rising by the PAM  
23 recorders -- post-accident monitoring recorders -- and also  
24 that our pressure was dropping. And at this point the  
25 operator, which was Brian Hilliker, on the controlling level



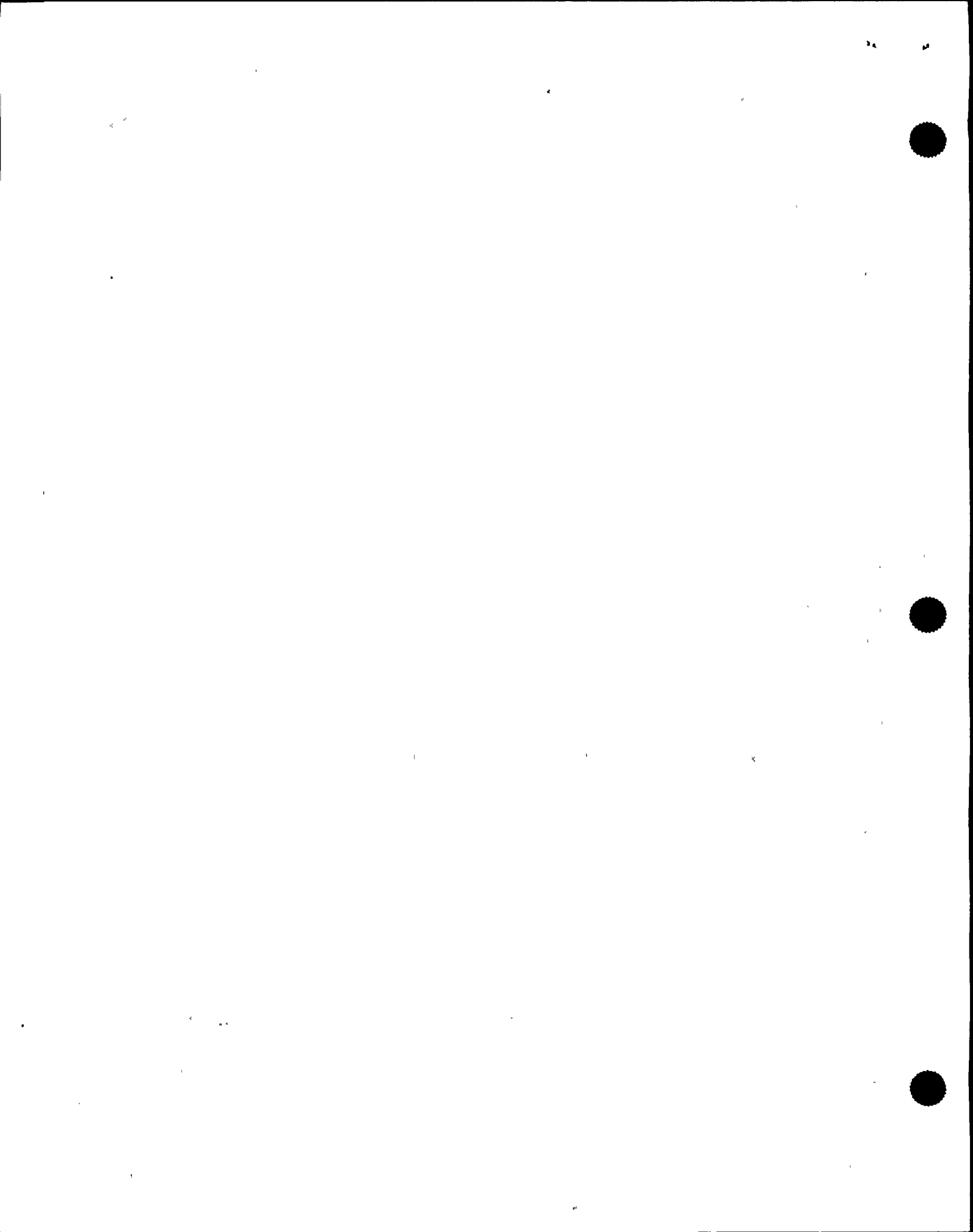
1 had started to take the steps to place RCIC on a test flow  
2 path from tank to tank, or the tank that takes the suction  
3 on the CST and returning to the CST.

4 In this time frame was when the SSS notified all  
5 the control room operators that he was declaring a site area  
6 emergency based on having no annunciation and the plant  
7 having gone through a transient, and possibly still in the  
8 middle of a transient.

9 At this point he also entered one of our  
10 contingencies, C-5, for vessel level control. In this  
11 interim, I was still looking for and carrying out the  
12 immediate actions of the scram. I don't know if you want to  
13 know all those, but verifying that the house loads had  
14 transferred to off site, the turbine was tripped, clean-up  
15 was secured; continuing to drive in all our IRM and SRM  
16 detectors so that we could possibly get some indication of  
17 what power we were at. The IRMs had already been driven in,  
18 and they were still on range 10 and indicating down-scale,  
19 although there was no indication on APRMs on panel 603.  
20 Also, there was no indication on rod sequence control, the  
21 full core display, or the rod worth minimizer at that time.

22 MR. VATTER: Did you select to arrange an IRM that  
23 you could see the power?

24 MR. BODOH: I started following power down, and I  
25 ended up with all range switches on range 1, and half of the





1 indication for the detectors indicated down-scale, and the  
2 other half had no lights.

3 MR. KAUFFMAN: Had which?

4 MR. BODOH: Had no lights, no light indication. I  
5 expected to see down-scale or nothing. Half of them were  
6 indicating down-scale, and the other half, there were no  
7 lights.

8 MR. KAUFFMAN: What do the signal lights signify?

9 MR. BODOH: That that range is down-scale.

10 MR. KAUFFMAN: Okay.

11 MR. BODOH: When the SRMs had reached full in, I  
12 noted that SRM Charlie was indicating 2 to 3 times 10 to the  
13 4th counts per second, and I informed the SSS of that fact.

14 MR. VATTER: About what time was that?

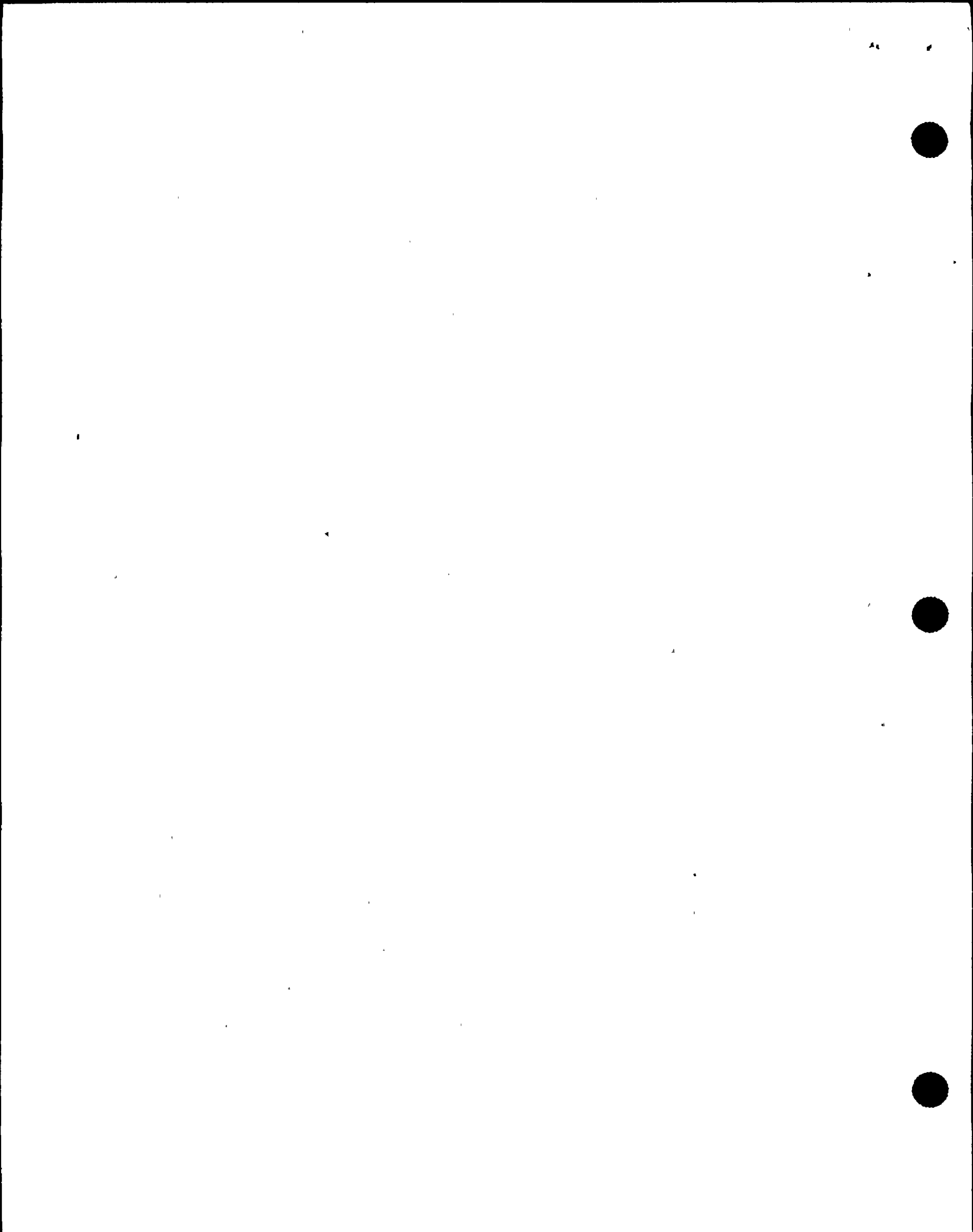
15 MR. BODOH: I couldn't give you a time.

16 MR. VATTER: But that's the first that you looked  
17 at the SRMs, or the first that they were giving you any  
18 indication?

19 MR. BODOH: This was the first that the SRMs --  
20 See, the SRMs had to be driven in, also.

21 MR. VATTER: I understand.

22 MR. BODOH: When I was first there, the SRMs  
23 hadn't been driven in, so I drove the SRMs in. As soon as  
24 the SRMs indicated full in, then I gave what indications I  
25 had to the SSS.



1 MR. VATTER: So when the SRMs were full in, the  
2 first indication after that was --

3 MR. BODOH: Charlie range reading 2 to 4 times 10  
4 to the 4th counts per second.

5 Bravo range and Delta range were in, somewhere in  
6 the range of five times ten to the third.

7 Alpha SRM at that point was inop.

8 MR. VATTER: The B -- the Bravo and Charlie were  
9 five times ten to the third?

10 MR. BODOH: Bravo and Delta.

11 MR. VATTER: Bravo and Delta --

12 MR. BODOH: Approximately.

13 MR. VATTER: That's right and Charlie was two to  
14 four times ten to the fourth?

15 MR. BODOH: Correct. It had been noted that  
16 Charlie normally read higher than the other ranges.

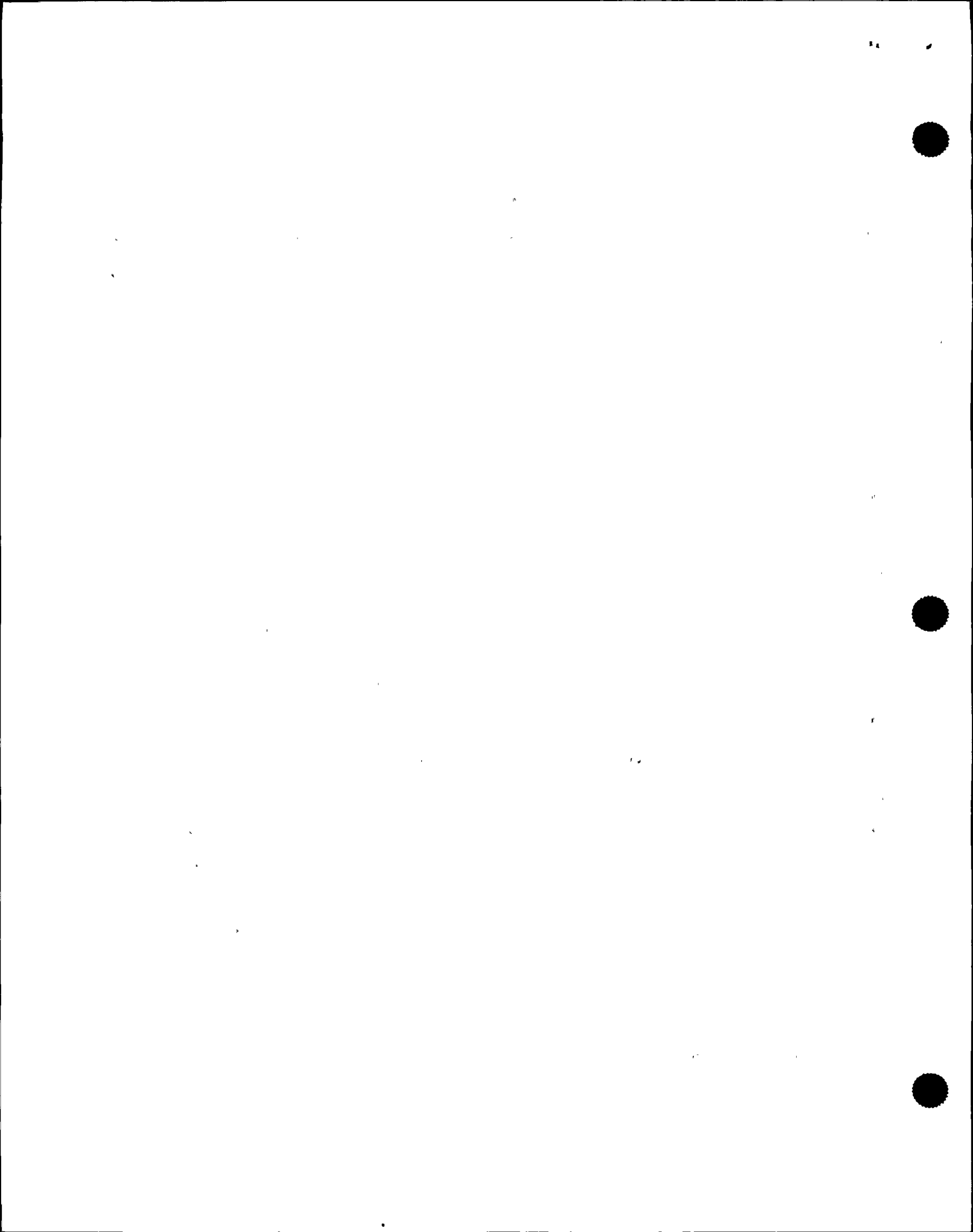
17 MR. VATTER: That was a known situation.

18 MR. BODOH: Excuse me?

19 MR. VATTER: That was a known situation that --

20 MR. BODOH: Yes, and we were also getting  
21 intermittent short period on range Charlie, which was also  
22 noted.

23 At this time we had added enough water to the  
24 vessel that level was starting to swell and the operator  
25 controlling level had already placed RCIC in its test flow



1 path from CST to CST.

2 We had reached greater than 202 inches, at which  
3 point we would have expected to get the high level trip  
4 indication for the feed pumps and that did not occur.

5 We have little amber lights that indicate when we  
6 have reached the high level trips at that point.

7 MR. VATTER: Do you know what time that was?

8 MR. BODOH: No.

9 MR. VATTER: But when you got to Level 8, the feed  
10 pump trip did not occur?

11 MR. BODOH: The feed pumps were already tripped.

12 MR. VATTER: But you didn't get the trip signal?  
13 That's what I thought you said.

14 MR. BODOH: I would have to verify that by  
15 computer points, whether or not we actually go the trip  
16 signal. What I was talking about was we had amber  
17 indication. Once we reached that level, that tells us we  
18 have reached the high level trip set point.

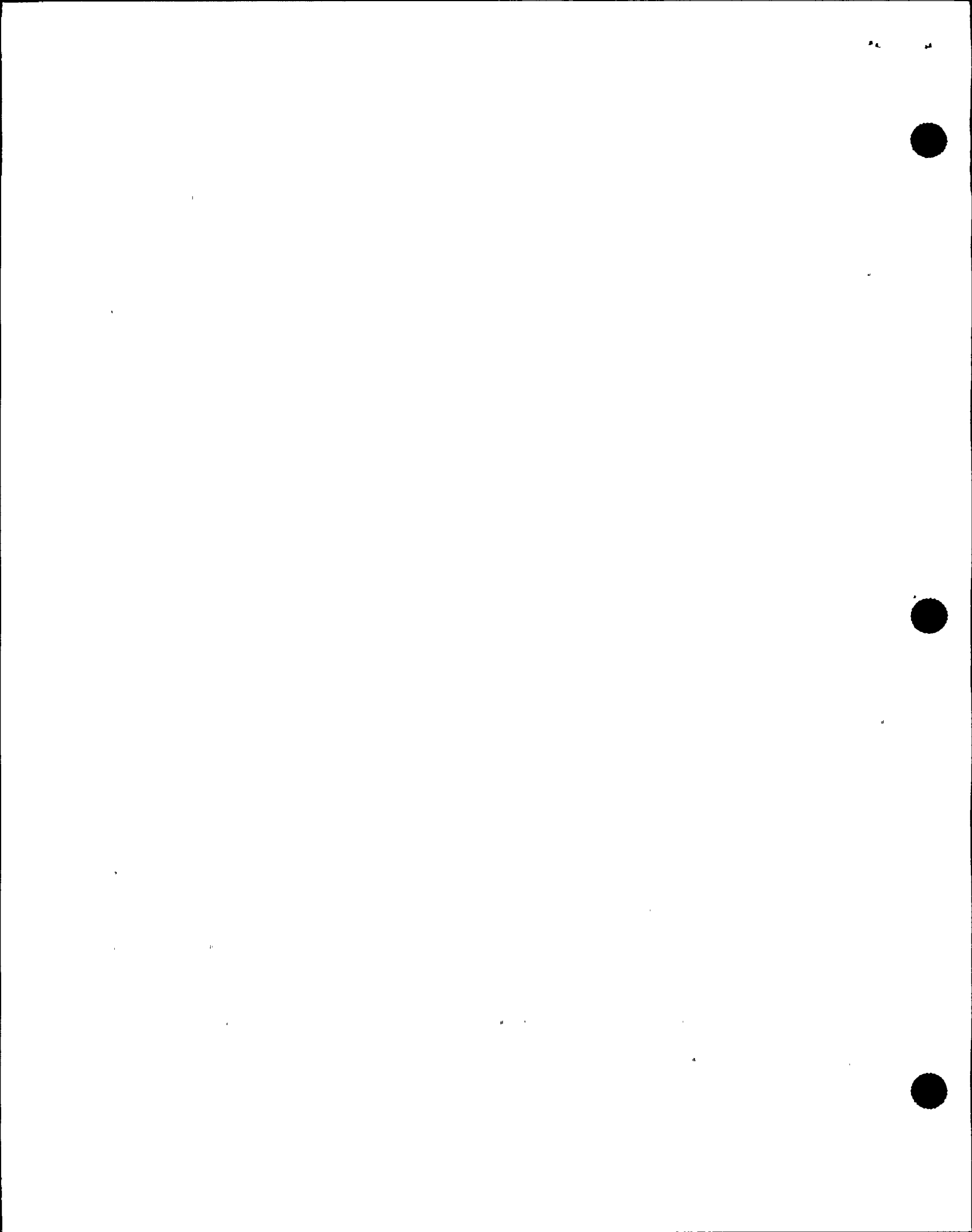
19 MR. VATTER: The amber indication didn't work.

20 MR. COLOMB: I think that's what Mark is saying.

21 MR. BODOH: Yes.

22 MR. COLOMB: He knows the amber lights didn't come  
23 on. He doesn't know that that means that the feed pumps  
24 didn't get a trip signal. He just --

25 MR. BODOH: Correct.



1 MR. COLOMB: -- electrically it might take some  
2 research, right? But he knows that the amber lights didn't  
3 come on at that point, which he was expecting to see. See  
4 what I'm saying?

5 MR. KAUFFMAN: Your event reconstruction says that  
6 was about 6:15, is that about the time this happened?

7 MR. BODOH: Yes.

8 MR. KAUFFMAN: You can refer to the this too, if  
9 you want.

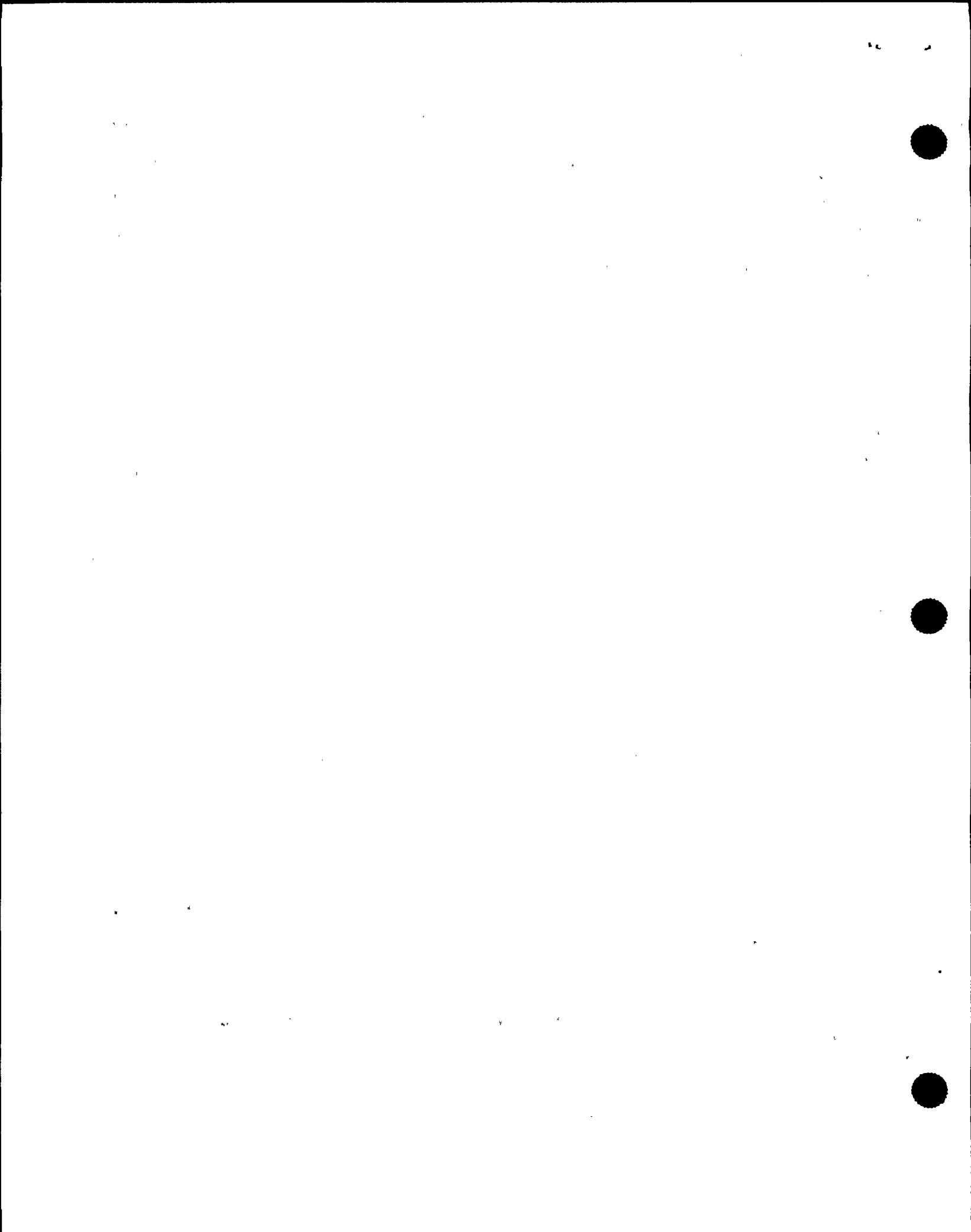
10 MR. BODOH: I couldn't give you times.

11 Also at this point we had secured, as I said we  
12 were on CST to CST with reactor core isolation cooling.

13 Our pressure had dropped. I think the lowest  
14 pressure I had heard at that point from the operator  
15 monitoring the PAM recorders was about 580 pounds. We also  
16 had one of the alpha feed injection check valve was  
17 indicating an intermediate position which was also relayed  
18 to the SSS, but we did not have any indication at that time  
19 that we were feeding.

20 That is lower than the shutoff head of the  
21 condensate booster pumps and at that time the SSS directed  
22 to secure the condensate booster pumps and shut the feed  
23 pump discharge valves.

24 To ensure that, we were not injecting through our  
25 feed and condensate system.





1           At this time or shortly before this, operators  
2 were dispatched to investigate the problem with the  
3 uninterruptable power supplies in an attempt to restore  
4 power to them to restore our indications in the control  
5 room.

6           MR. VATTER: Can you recall exactly how that  
7 conversation went or can you give us as much detail as you  
8 have on the instructions to the operator to go work with  
9 the UPS?

10          MR. BODOH: Not specifically.

11          MR. VATTER: But some operators were told --

12          MR. BODOH: They were, the operators were  
13 instructed to investigate the condition of the  
14 uninterruptable power supplies.

15          MR. VATTER: So it was investigate?

16          MR. BODOH: Yes.

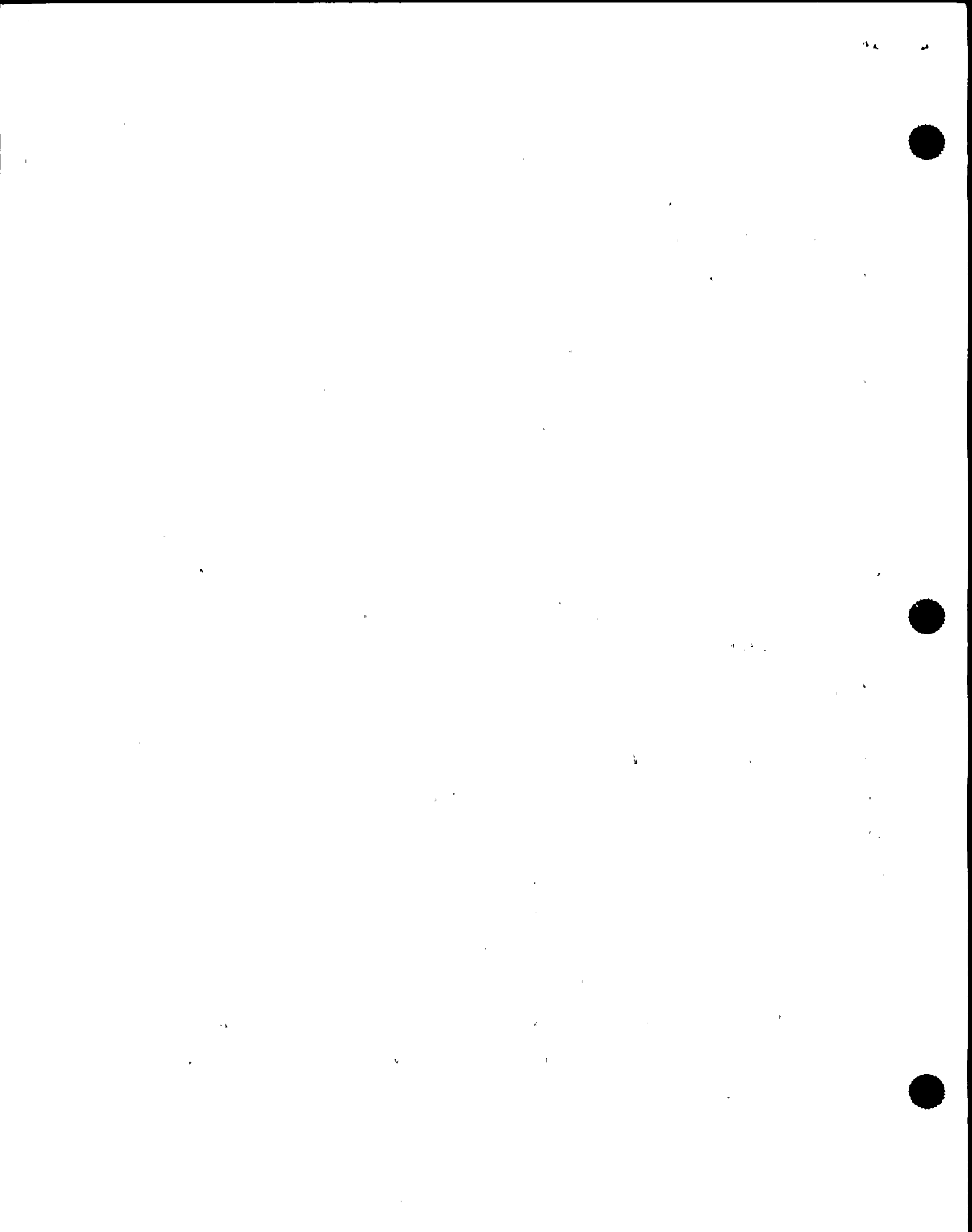
17          MR. VATTER: Which operators were told that?

18          MR. BODOH: I couldn't give you names. I know  
19 Dave Hanczyk was one of the reactor operators that was  
20 working on investigating and restoring power to the UPS's.

21          MR. VATTER: Were there any other operators that  
22 were sent to the UPS's before Dave Hanczyk?

23          MR. BODOH: There were other operators sent. I  
24 can't say whether they were sent prior to this or with Dave.

25          I know that there was several operators that were



1 down at the UPS's attempting to restore power to them.

2           This was all hindered by the fact that we didn't  
3 have any plant communications other than the telephone.

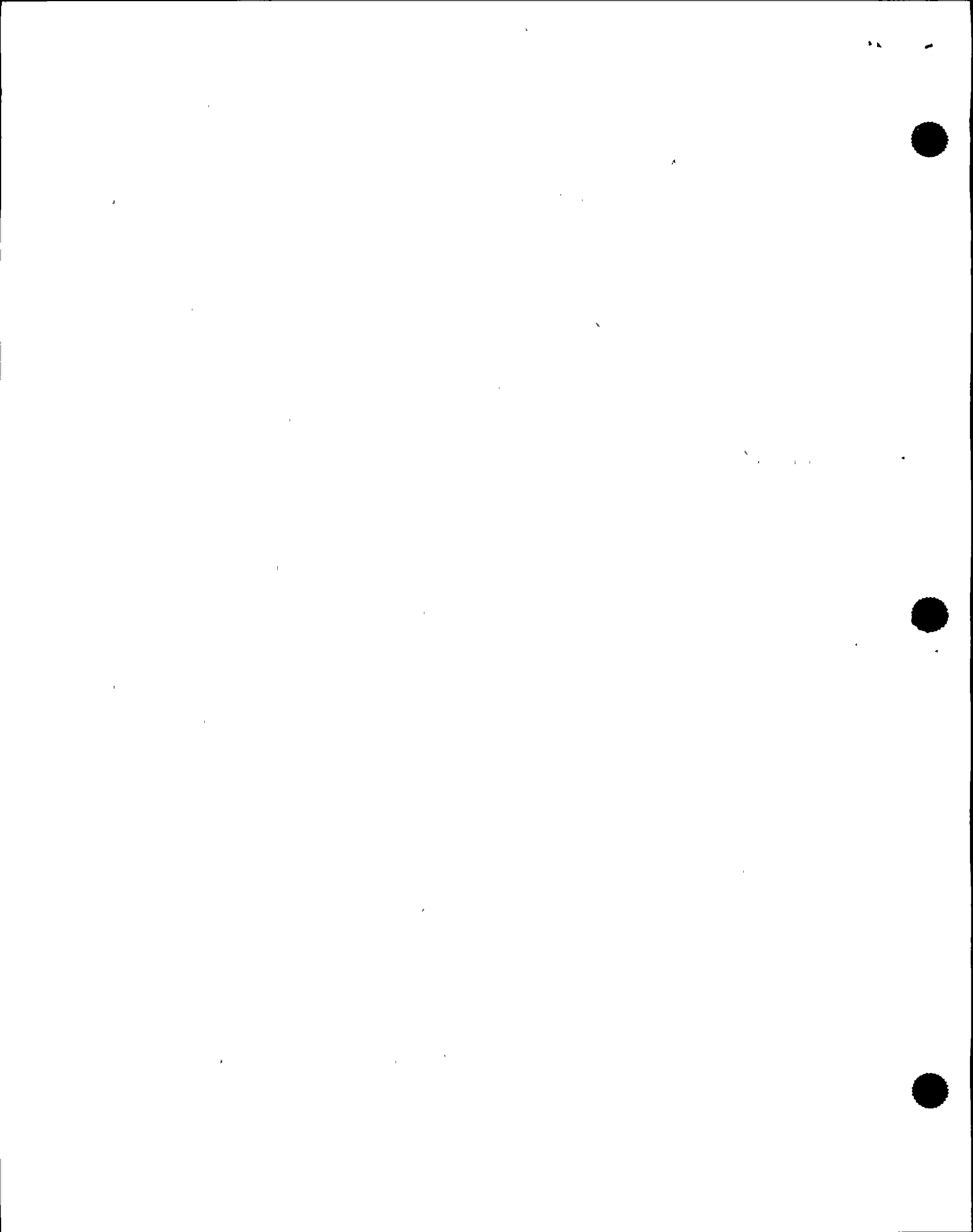
4           In this time frame Dave Hanczyk had returned to  
5 the control room to give the station shift supervisor or  
6 site emergency director at that time the status and  
7 condition of the uninterruptable power supplies.

8           I believe this is the time also, or shortly after  
9 this time that they started restoring power to the UPS's,  
10 placing them on their maintenance supply. I don't really  
11 know any of the specifics that they found when they were  
12 down there other than all the breakers were tripped.

13           From my standpoint of where I was the next actual  
14 thing that happened -- I guess that's relative -- was they  
15 restored power and the annunciators come back and I received  
16 my indications for the rod sequence control, full core  
17 display, and the rod worth minimizer.

18           At this time we were attempting to verify that all  
19 rods had been inserted to their full in position. We noted  
20 that the rod sequence control system showed multiple rods  
21 not full in. Rod sequence control disagreed with the  
22 indications we had on the full core display and rod sequence  
23 control and the full core display disagreed with what we saw  
24 on the rod worth minimizer.

25           The rod worth minimizer at that time showed that



1 its indications were shut down, no; all rods in, no; and it  
2 gave indication of one rod that it said was not full in.  
3 That rod, that specific rod, by the full core display was  
4 indicated as being full in.

5 MR. VATTER: So you had a green bottom light on  
6 the full core display for that rod?

7 MR. BODOH: That is correct.

8 MR. VATTER: But the rod worth minimizer said it  
9 was not all the way in.

10 MR. BODOH: That is correct. At this time we  
11 started, I and Dave Rathbun had come up to assist me at this  
12 point in trying to determine which rods and how many rods  
13 were not full in and we did that by proceeding rod by rod  
14 through the rod sequence control indication and verifying  
15 that position against the full core display.

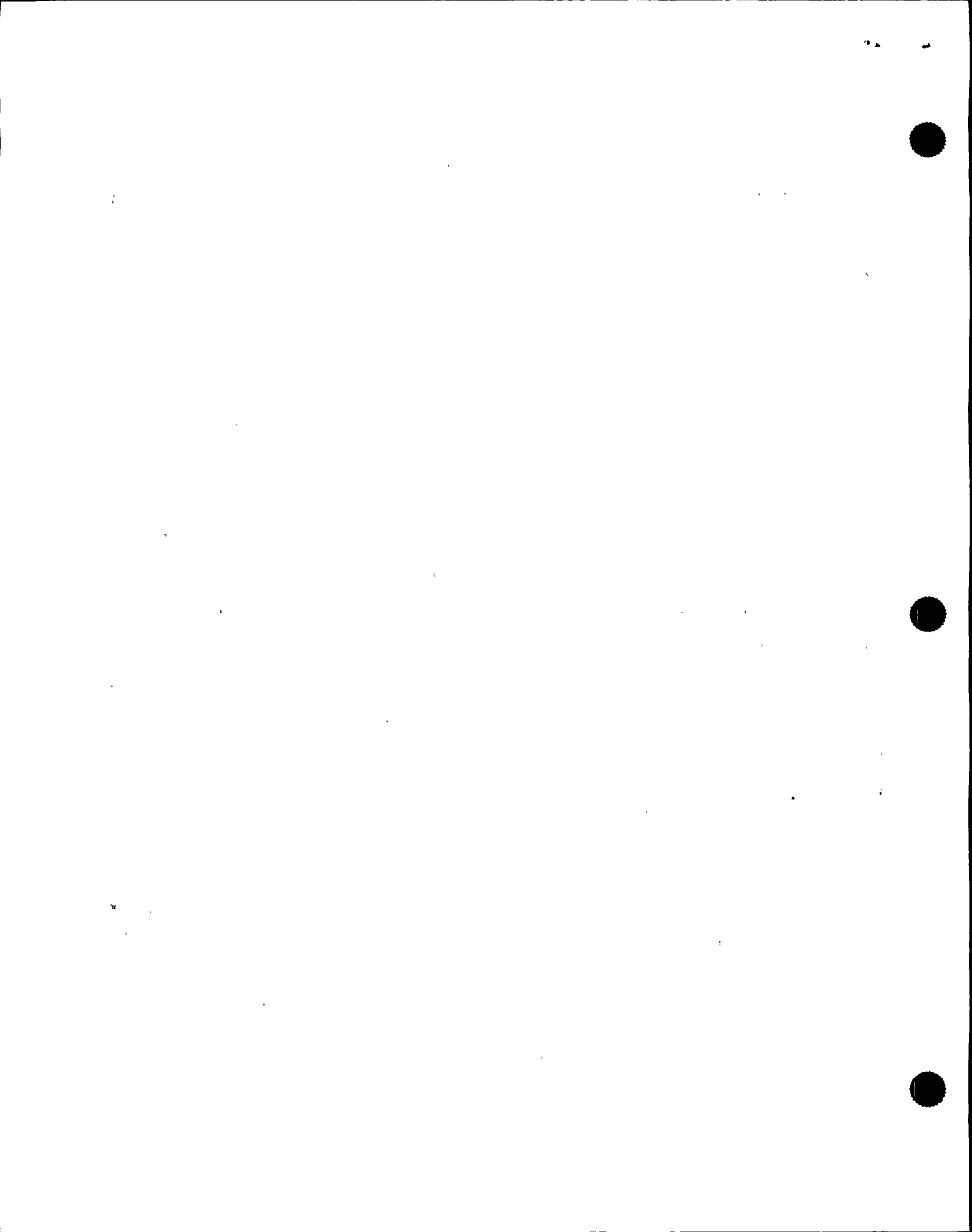
16 In doing that we found that there were multiple  
17 rods on the rod sequence control that did not agree with the  
18 indication on the full core display, being that many of the  
19 rods that were not indicated on the rod sequence control  
20 indicated full in on the full core display.

21 MR. VATTER: Do you have any idea why that might  
22 be?

23 MR. BODOH: At the time? No.

24 MR. VATTER: Now what do you think?

25 MR. BODOH: Now, after talking, I had a



1 conversation with Ray Dean and he informed me that the  
2 indication for the full core display and the rod sequence  
3 control, the position of the rod being full in, comes from  
4 the same source, which at the time I did not know that, so  
5 the two of them should have agreed.

6 At this time Dave Hanczyk went back and reset the  
7 rod drive control system and there was some discussion as to  
8 the scan mode having locked up and that may have been a  
9 possible reason for the rod sequence control and the full  
10 core display not agreeing.

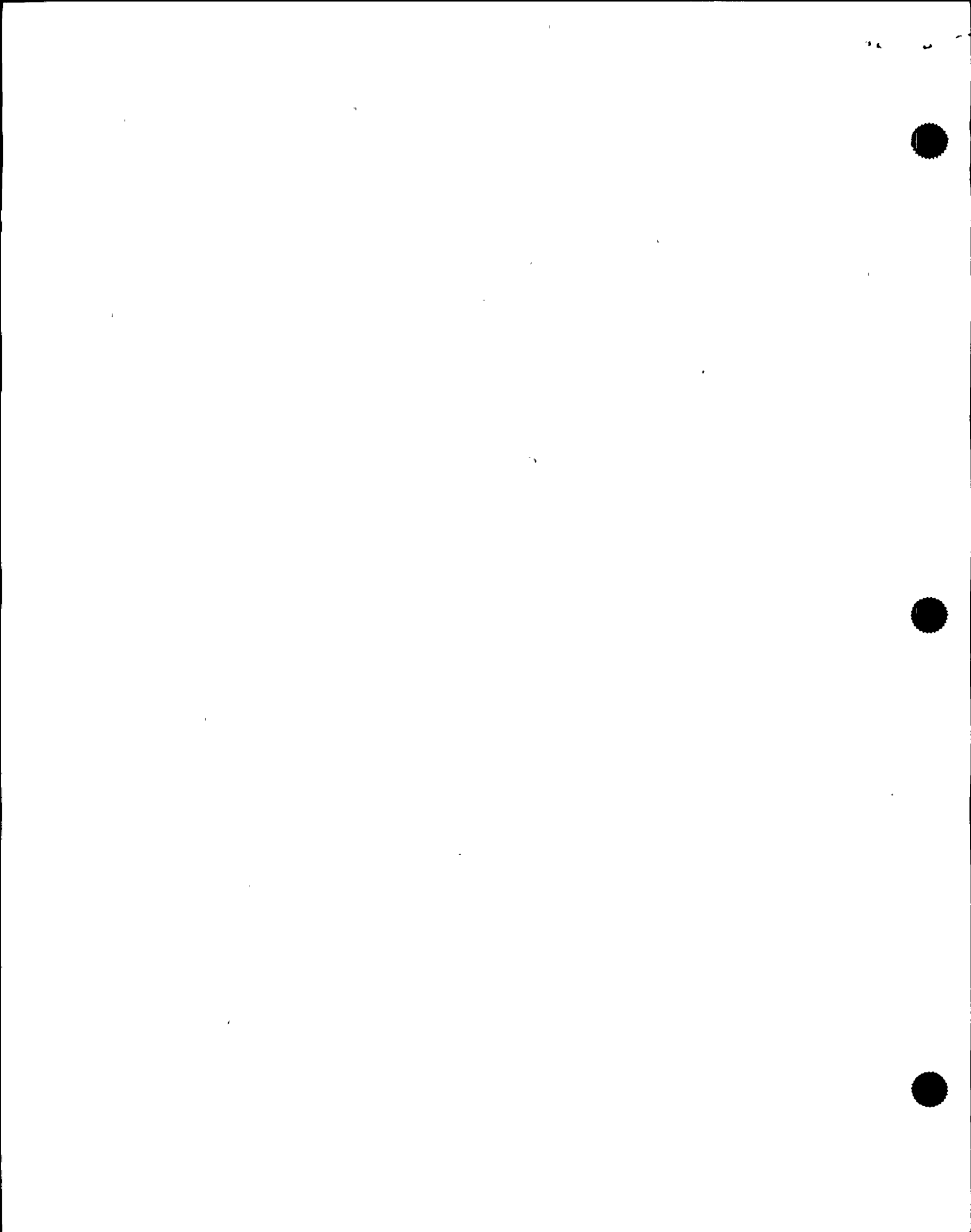
11 When he reset the rod drive control system we were  
12 able to verify that we had six rods that showed no  
13 indication on either the rod sequence control system or the  
14 full core display.

15 At that time the rod worth minimizer still showed  
16 reactor shutdown, no; all rods full in, no; and the same  
17 rod, I think it was 14-31, as being a mispositioned rod when  
18 in fact on the full core display it showed full in.

19 By this time, now, there were many operators  
20 coming in, operators from the day shift -- operators from  
21 the surveillance crew, and relief operators -- coming in and  
22 taking directions from the chief shift operator and starting  
23 to look at balance of plant.

24 MR. VATTER: The CSO was still Mark Davis?

25 MR. BODOH: That is correct.





1           By this time, level had come back on scale, less  
2 than 2 or 2.3, and was slowly dropping. The SSS had given  
3 one operator direction to restart the condensate booster  
4 pumps and have them available for injection, and he also  
5 gave another operator direction to control reactor pressure  
6 utilizing the bypass valves.

7           MR. VATTER: Was he given a band to control?

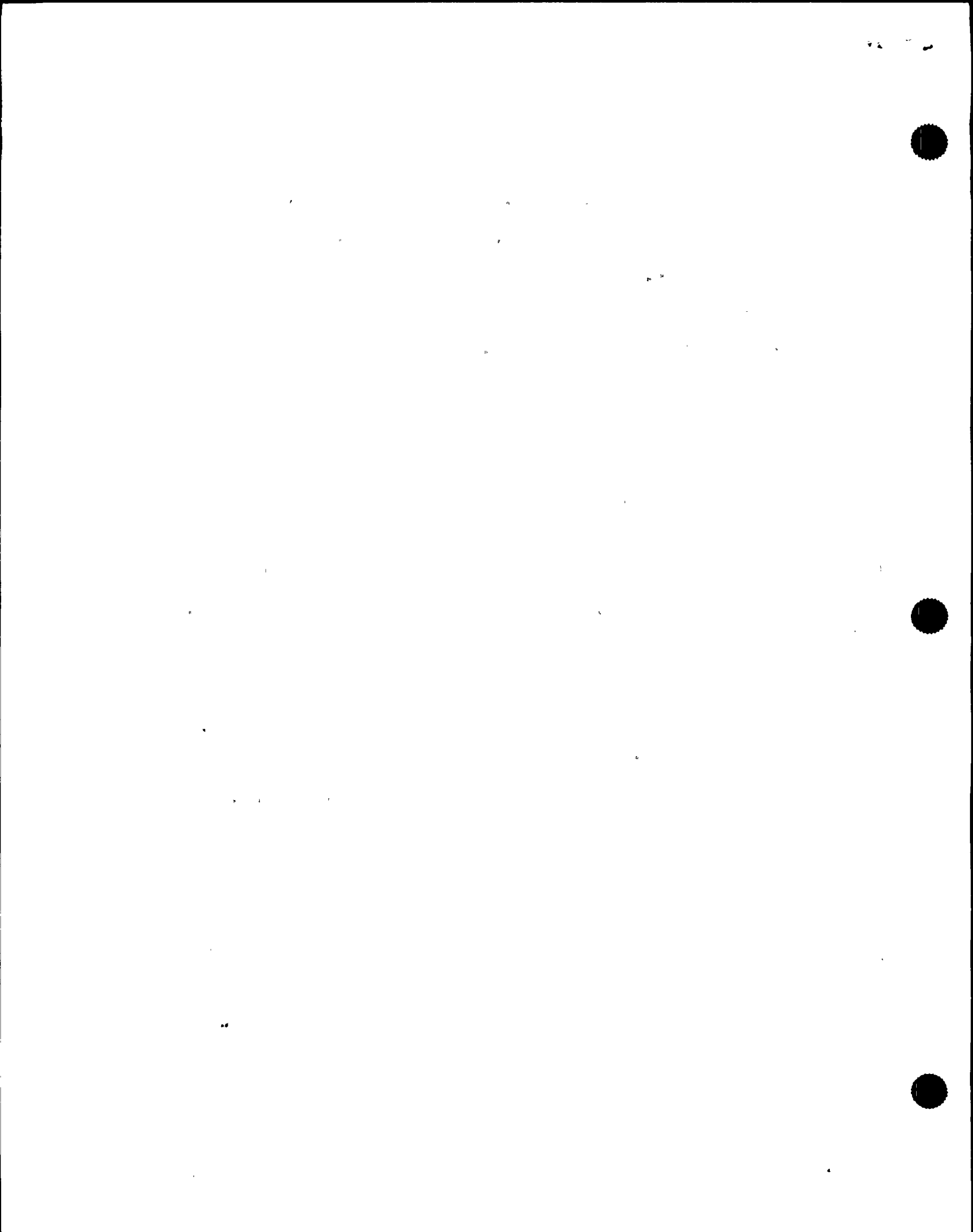
8           MR. BODOH: Yes, he was.

9           MR. VATTER: Do you remember what it was?

10          MR. BODOH: No. He was given several bands, based  
11 upon the condition of the plant. But our main concern at  
12 this point was not to exceed our cool-down rate, and they  
13 were to work together to maintain vessel level and pressure  
14 and not exceed the cool-down rate.

15          We re-entered the EOPs when level dropped to  
16 159.3. At this point there were some problems with re-  
17 establishing flow to the vessel with the condensate booster  
18 pumps. In starting the condensate booster pumps, it  
19 directs you to shut the suction valve to the feed pumps,  
20 which would isolate the normal high-pressure-low-flow, high-  
21 pressure-high-flow injection paths.

22          Eventually, we did restore feed to the vessel,  
23 utilizing low-pressure-low-flow flow control valve 137.  
24 Back when we restored power, we did get our lights for the  
25 feed pump high-level trip, along with our setpoint set-down

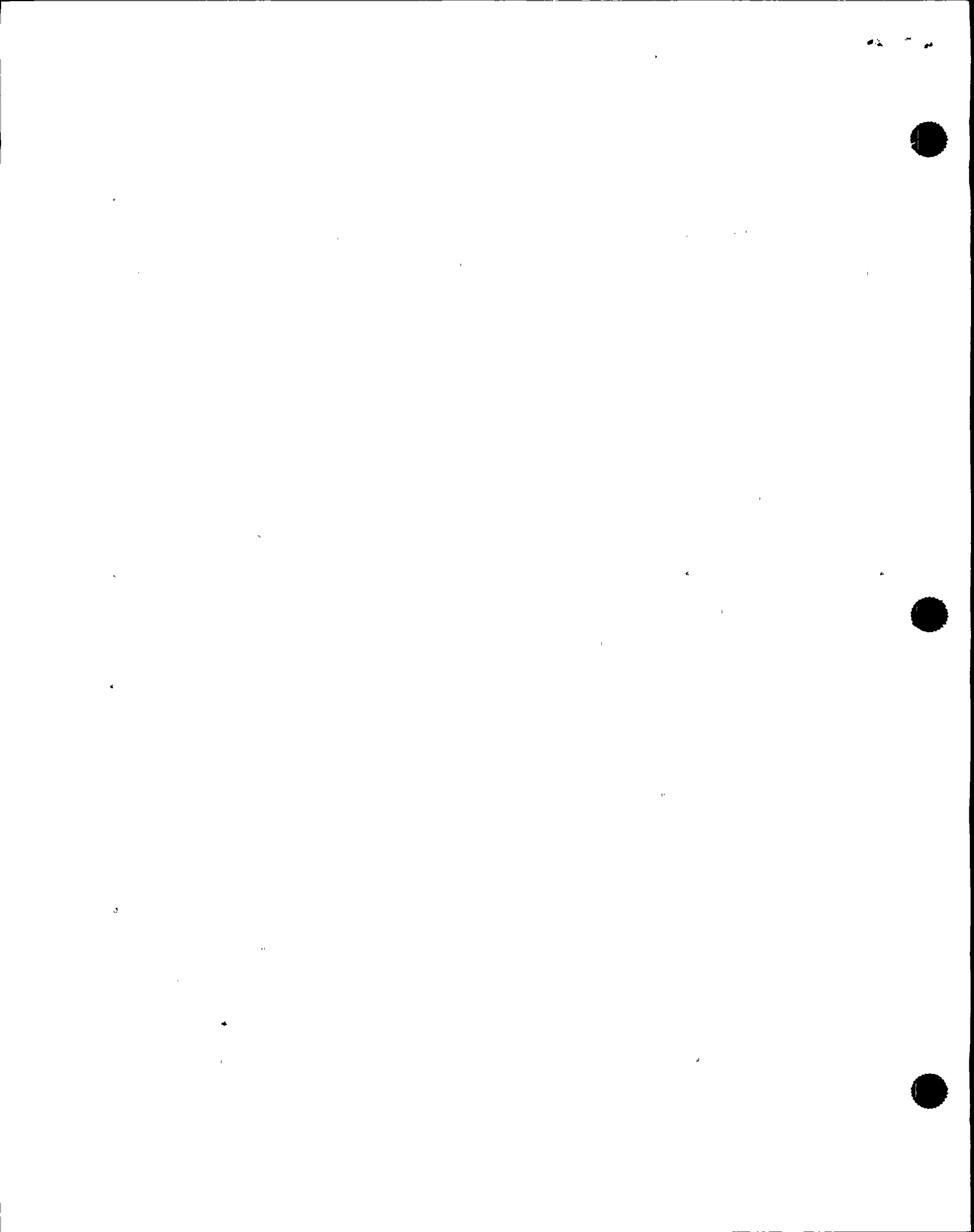


1 indication. We also received our down-scale on the APRMs at  
2 that point, when power was restored, but at that time we  
3 couldn't determine the position of all the rods.

4 MR. VATTER: What did you finally do to get all  
5 the rod position determinations?

6 MR. BODOH: By the emergency operating procedures,  
7 the operator is directed by the site emergency director to  
8 carry out EOP 6, attachment 14, for attempting to assert all  
9 rods. A part of that procedure is bypassing the RPS  
10 interlocks and resetting the scram. When we reset the  
11 scram, that was when we got all rods full in on the rod  
12 sequence control and indication on the rod worth minimizer,  
13 shutdown, yes; all rods in, yes. At that point we informed  
14 the SSS -- I informed the SSS that I had indication that all  
15 rods were full in.

16 At that point, other operators were still  
17 attempting to raise level with injection from condensate and  
18 condensate booster pumps and control pressure and control  
19 our cool-down rate. They also had people securing any  
20 unnecessary steam loads, to minimize any cool-down. Earlier  
21 in the morning, we had hung mark-ups for various electrical  
22 PMs and maintenance on the Division 2 RHR Bravo and RHR  
23 Charlie loops. We were in the process of clearing those, so  
24 that we could set RHR Bravo up for shutdown cooling when we  
25 satisfied the interlocks to place that loop in shutdown



1 cooling.

2 All the scram actions for panel 603 had been  
3 completed, and at that point I started monitoring level 4,  
4 The operators that were controlling vessel level. I was  
5 using the -- I forget what range it is; I believe it's the  
6 shutdown range indication on panel 603 -- to inform them of  
7 what level was and what its trend was, at which point we had  
8 a rising level, but it was rising very, very slowly. They  
9 did have indication that they were injecting, but the level  
10 rise was very slow. We had some discussion at this point  
11 between the operators that a rising level was what we  
12 wanted; we didn't want to inject at to rapid a rate, because  
13 we didn't want to exceed the cool-down. Everybody was  
14 pretty much satisfied that we had a rising level, and we  
15 weren't concerned with how fast it was rising. That was  
16 conveyed to the SSS at that time -- that it was very, very  
17 slow.

18 During that time, also, the operator controlling  
19 reactor pressure utilizing the bypass valves, R. J.  
20 Reynolds, was given bands to control pressure, to help  
21 facilitate restoring level. It may be Rich Reynolds. Once  
22 level was restored, I was secured from panel 603

23 MR. KAUFFMAN: Okay. Were you then relieved off  
24 the shift, or did you continue to have further duties?

25 MR. BODOH: I checked with the CSO, and he asked



1 me to check an annunciator from the back panel, hydrogen-  
2 oxygen concentration, Division 2; a high annunciator had  
3 come in. I got the annunciator response and verified my  
4 indication on the recorder on panel 880, and I looked to see  
5 if we had received a computer point. Carrying out the  
6 annunciator response, there were not any actions for me to  
7 take, so I informed the CSO of what the indications were on  
8 the panel recorder, on 880, and then I also informed the  
9 SSS, at which point the SSS stated that he would have  
10 Chemistry contacted to draw a sample to verify our  
11 indication.

12           Once I completed that annunciator response, I  
13 checked with the CSO, and at that time he didn't need my  
14 service for anything else, so I basically just stepped back.  
15 After a short time, when I saw that he wasn't going to use  
16 me for anything further, I went and told him that I was  
17 going to go across the hall. We have a break area across  
18 the hall.

19           MR. KAUFFMAN: Okay.

20           MR. BODOH: Once there, I sat over there, and I  
21 basically just monitored the telephone.

22           MR. KAUFFMAN: So that was basically the end of  
23 your involvement.

24           MR. BODOH: Yes.

25           MR. VATTER: I think you probably said, but I





1 don't recall. Maybe you could just help me here for a  
2 minute. When the non-licensed operators and David Hanczyk  
3 were sent down to work on the UPS's, who was it that gave  
4 him that instruction?

5 [Pause.]

6 MR. BODOH: I don't now if they specifically got  
7 it from the SSS or if they got it from Mike Eron. Mike Eron  
8 was the assistant SSS.

9 MR. VATTER: But you think it was one of the two.

10 MR. BODOH: Yes.

11 MR. VATTER: Okay.

12 MR. KAUFFMAN: Do you have more specific  
13 questions?

14 MR. VATTER: No.

15 MR. KAUFFMAN: Of all the things that occurred in  
16 the response and allowed the response to go well, what do  
17 you think contributed to the things that went well -- be it  
18 procedures, training, knowledge of the people? Why do you  
19 think things went as smoothly as they appear to have gone?

20 MR. BODOH: I think training is a big part of it.  
21 We have been in training in the simulator where we'll have a  
22 loss of a UPS in a dynamic scenario and taken the actions to  
23 recover from that. I was also on shift with another crew  
24 when we lost UPS-1-Bravo.

25 MR. VATTER: When was that?



1 [No response.]

2 MR. VATTER: A long time ago? A year ago?

3 MR. BODOH: No, it wasn't that long. Back in the  
4 beginning of the year, I would say -- January, February is  
5 when I think it was.

6 MR. VATTER: What happened then?

7 MR. BODOH: We received all the lights on the  
8 full-core display.

9 MR. KAUFFMAN: "You received" them. You mean you  
10 lost --

11 MR. BODOH: We received all the lights. Every  
12 light on the full-core display lit up, including the blue  
13 scram pilot lights. The recirc hydraulics isolated, and we  
14 had a drifting of the Bravo recirc flow control valve.  
15 Power, level, and pressure, megawatts electric -- none of  
16 those parameters changed, even though we had the indication  
17 on the full-core display. That also happened right around  
18 the time frame of a shift turnover, and there was some  
19 discussions between the SSS's as to what indications they  
20 were looking at, whether or not the plant should be  
21 scrammed, or did we have enough indication to believe that  
22 the plant was in a stable condition? The result of that  
23 was that we did not scram; we investigated the problem with  
24 the UPS, and we recovered the recirc loop using procedures.  
25 We continually monitored power, level, pressure, to see that



1 those parameters were good indications of what the plant was  
2 doing.

3 MR. VATTER: Do you know the UPS was recovered at  
4 that time?

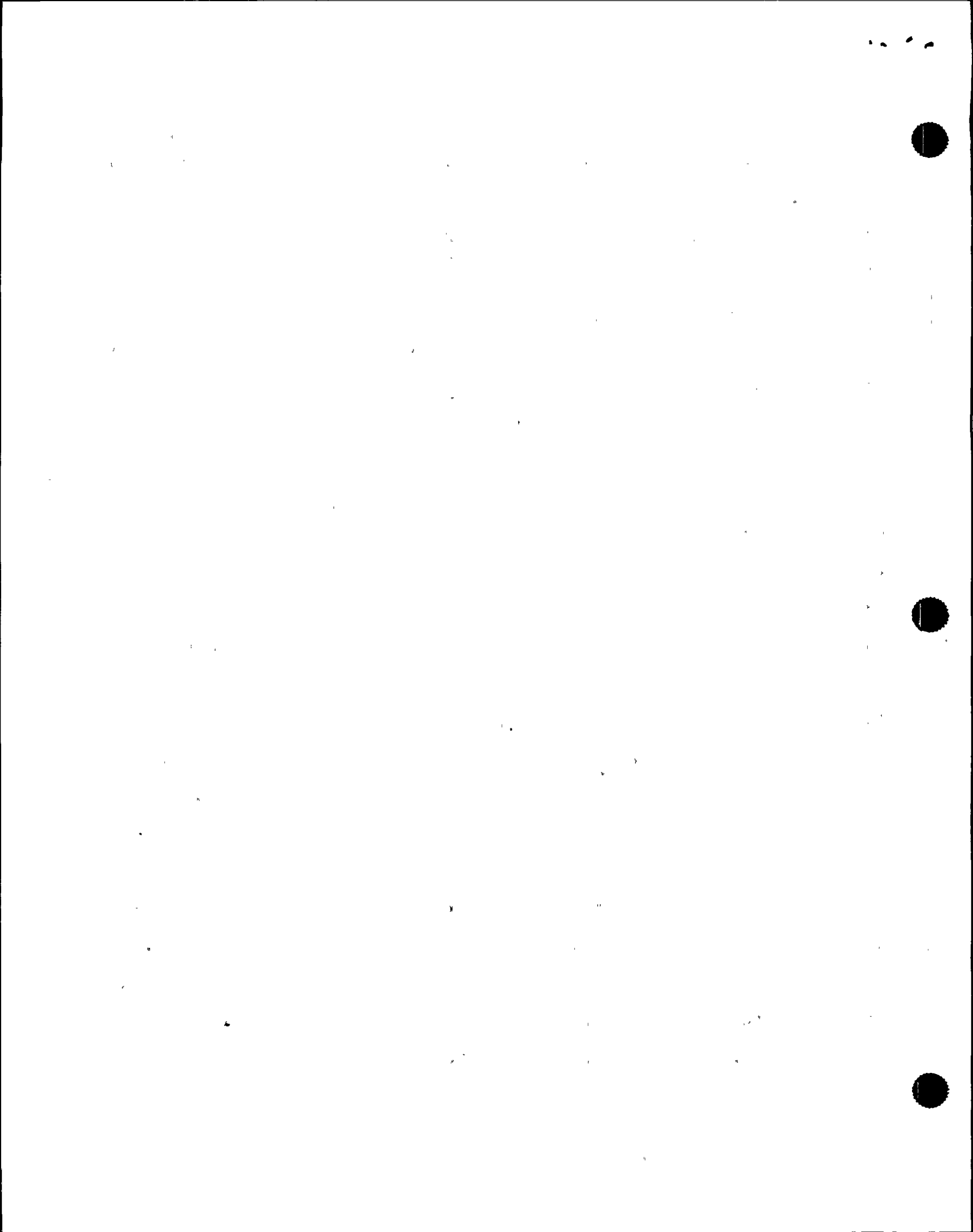
5 [Pause.]

6 MR. BODOH: I believe at that time there was a  
7 maintenance activity that was going on with the UPS, and,  
8 while performing the maintenance activity, that action was  
9 what caused the loss of the UPS. The operator involved and  
10 the maintenance person contacted the control room, and the  
11 control room directed them to return the UPS to normal.  
12 They returned it to normal. I can't give specifics how they  
13 did it or what they had done.

14 MR. VATTER: So it was the maintenance people that  
15 put it back in its normal configuration.

16 MR. BODOH: There was an operator there.

17 As a result of these things -- the training and  
18 the loss of the UPS in the plant -- I think the training was  
19 very valuable. I also think that the communications were  
20 very strong, and the leadership by the SSS was very, very  
21 strong. When I entered the control room and it was very,  
22 very quiet, Mike Conway came out, and he went to the EOP  
23 desk. He was very calm; he was very deliberated. He made  
24 sure that everyone was aware of where the plant stood at  
25 that time, and he gave direction as to where he wanted to



1 go, what he wanted the operators to do. He made those  
2 directions very specific and very deliberate.

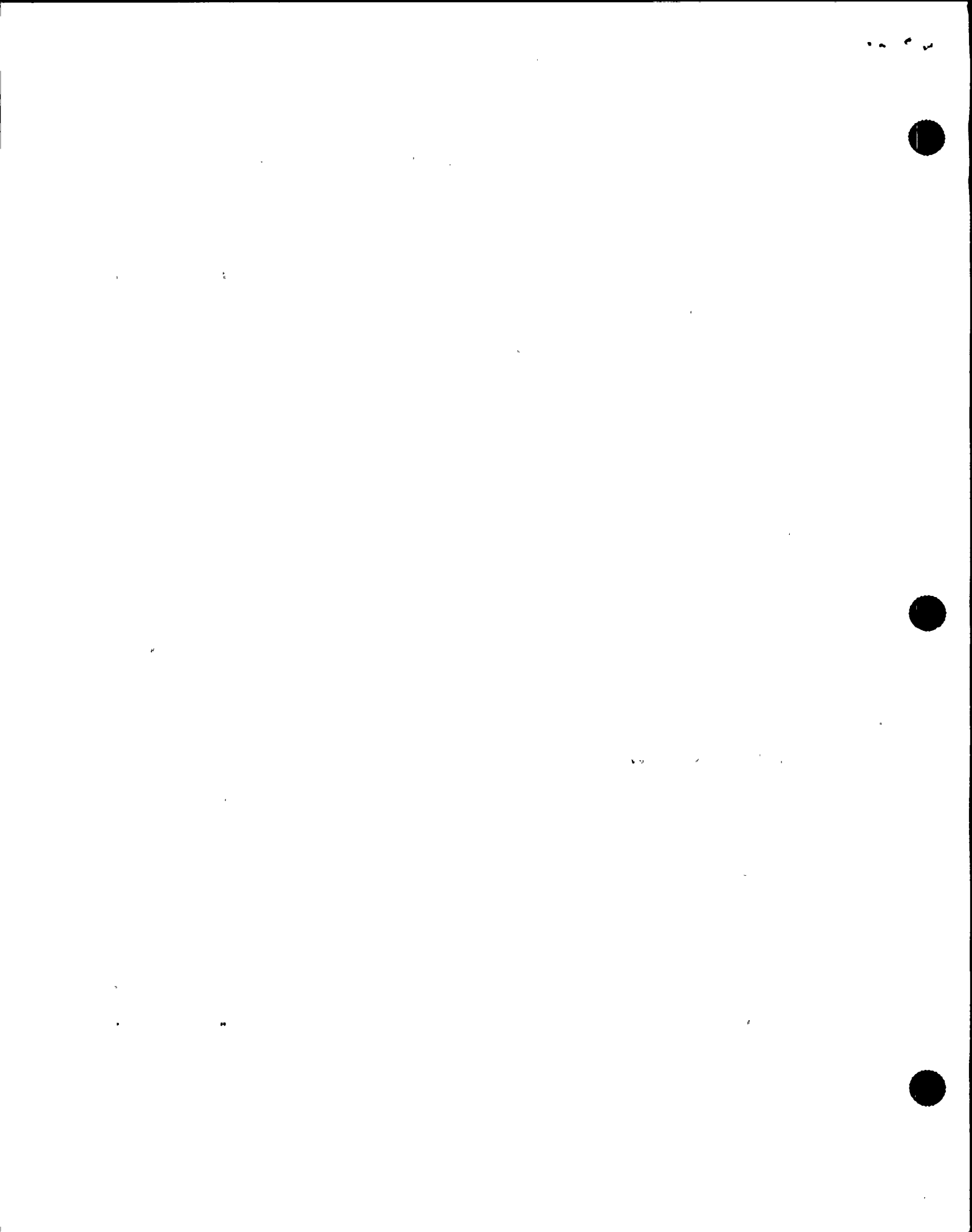
3 I have been on three different shifts in the past  
4 seven months -- or roughly seven months -- and I think that  
5 all our SSS's, with the training that we have in EOPs, are  
6 above the standard for SSSs, as far as operating and  
7 directing through the EOPs.

8 MR. KAUFFMAN: "Are above the standard" -- are you  
9 referring to the industry average?

10 MR. BODOH: As far as seeing an average. An  
11 average person, an average SSS in the EOPs, I think their  
12 understanding and training is such that they have a very  
13 strong confidence in executing the EOPs. I think the  
14 reactor operators are very knowledgeable as far as when we  
15 enter contingencies for the EOPs, what actions they need to  
16 carry out. If for some reason direction is not given by the  
17 SSS, they would question it.

18 I guess the training and the communications and  
19 our supervisory personnel were strong points through the  
20 whole incident.

21 MR. KAUFFMAN: If I turned that question around  
22 and said are there any areas that didn't go smoothly, like  
23 perhaps getting condensate booster pumps back, were there  
24 any areas that you felt procedures got in the way or you  
25 didn't know enough about an area or any areas that you think





1 that something could be done so that the response could be  
2 made even better in the future?

3 MR. BODOH: I think our training of  
4 uninterruptable power supplies should be an ongoing  
5 training. Bob Crandall, who normally handles the UPS's, is  
6 very good about having the operators go down when any type  
7 of maintenance is being done and talking through the UPS's,  
8 their operation, their functions.

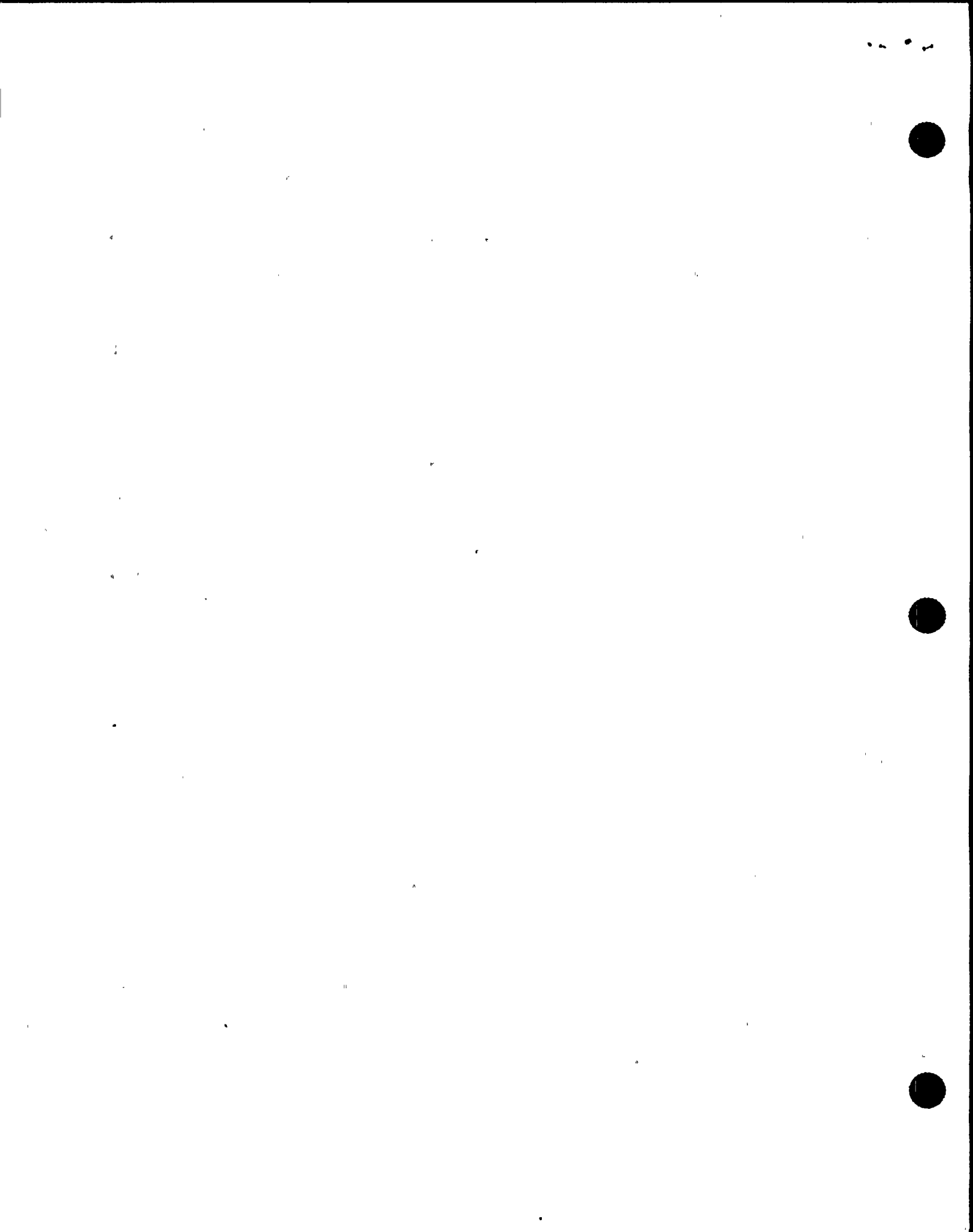
9 I know that the reactor operators have had  
10 training on the UPS's in the plant but it is not something  
11 that occurs on a day to day basis. I think that the  
12 majority of operators are probably a little uncomfortable,  
13 especially in this situation, where I guess no one really  
14 expected to lose all the UPS's and be in that type of a  
15 situation.

16 I think at that point that was not -- after going  
17 through everything, the procedures -- the procedures won't  
18 cover everything that these were very unique situations.

19 MR. KAUFFMAN: Sure, but the procedures were by  
20 and large pretty good and didn't give you any big  
21 insurmountable type of problems?

22 MR. BODOH: No.

23 I think something else that hampered handling the  
24 incident was the loss of communications. In our evaluation,  
25 our self-assessment the following day I found out, I'm sure



1 with a lot of other people, that the Gaitronics is supplied  
2 off of two separate UPS's and the floating wire or the  
3 portable radios is off a third and it was never considered  
4 that we would lose all three of those at one time so  
5 communications really hampered things because when person  
6 was sent out to perform an action there was delay in the  
7 time they took the action and got back to the control room  
8 to relay any information that might have been pertinent to  
9 where we were.

10 I don't know why some of the egress emergency  
11 lighting was not illuminated in stairwells.

12 There was no problem in the plant and the only  
13 stairwell that I know of was the stairwell on the south side  
14 of the control building going from Elevation 306 to 288.

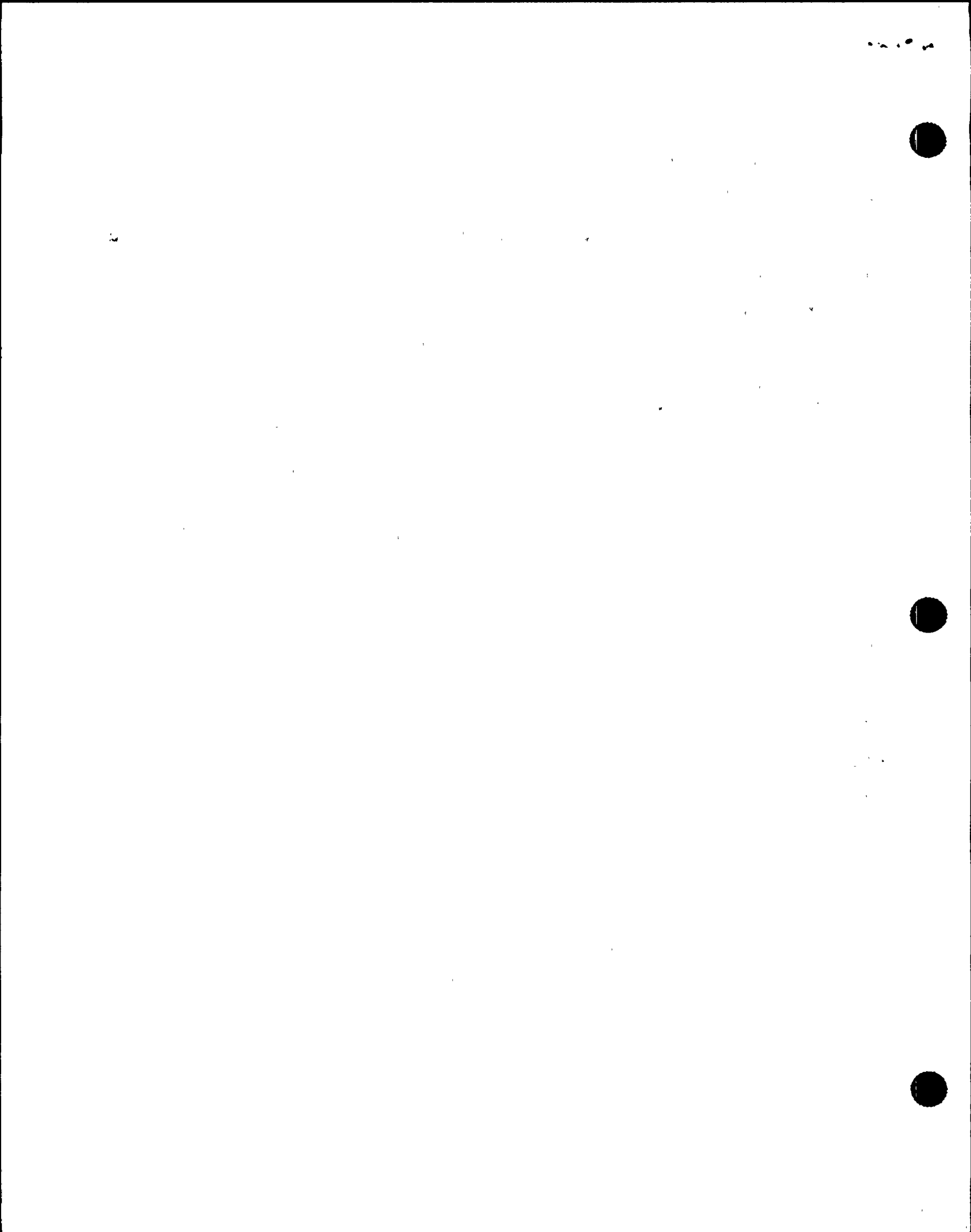
15 Even with those things, I still had every  
16 confidence that we would be able to put the plant in a safe  
17 condition.

18 MR. KAUFFMAN: Okay. The last comment we normally  
19 do is give you a chance to make -- we've asked the questions  
20 all along.

21 Now it is your opportunity to make any comment for  
22 the record or bring up anything you care to say.

23 MR. BODOH: I don't know. I guess this all makes  
24 me a little nervous.

25 MR. KAUFFMAN: I understand. First time for



1 everything

2 MR. BODOH: I guess I don't understand all the  
3 proceedings. I realize what they are for. It just hasn't  
4 all sunk in yet, I guess. I look forward to seeing the end  
5 result.

6 MR. KAUFFMAN: Okay. That concludes the  
7 interview.

8 [Whereupon, at 11:24 a.m., the taking of the  
9 interview was concluded.]

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REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission

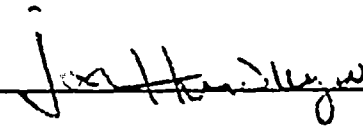
in the matter of:

NAME OF PROCEEDING: Int. of MARK BODOH

DOCKET NUMBER:

PLACE OF PROCEEDING: Scriba, N.Y.

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

  
\_\_\_\_\_  
JON HUNDLEY  
Official Reporter  
Ann Riley & Associates, Ltd.





ORIGINAL

07 - 86A-91

OFFICIAL TRANSCRIPT OF PROCEEDINGS

Agency: Nuclear Regulatory Commission  
Incident Investigation Team

Title: Nine Mile Point Nuclear Power Plant  
Interview of: MARK BODOH

Docket No.

LOCATION: Scriba, New York

DATE: Monday, August 19, 1991

PAGES: 1 - 32

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(202) 293-3950.

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Exhibit 3-1 (continued)

-3-

ADDENDUM TO INTERVIEW OF MARK A. BODOH / NADE (R.D.)  
(Name/Position)

Page	Line	Correction and Reason for Correction
3	17	Clarify "everything"; Control Rm indications, plant parameters and annunciators
3	18	Delete "I guess". Poor choice of words. Change "give" to relay
4	20	change As I came into the "AT THE CONTROLS" area of the Control Rm.
6	1	86 relays were all TRIPPED.
6	25	Delete "just". Change "at" to of
7	1	and he had directed an Auxiliary Operator to continuously monitor R <sub>1</sub> vessel level and pressure. Clarify what direction SSS had given.
7	3	Change <sup>we</sup> "hit" to Vessel level reached
7	5	Change "what" to which. Poor grammar
7	19	I informed the SSS
7	22	An Auxiliary Operator had been directed
8	10	take the actions to ensure that the feed Pmp
8	12	available for service, but it had
9	25	narrow range level instrumentation
10	5	vessel level

Page 1 of 2 Signature Mark A. Bodoh Date 8/23/91

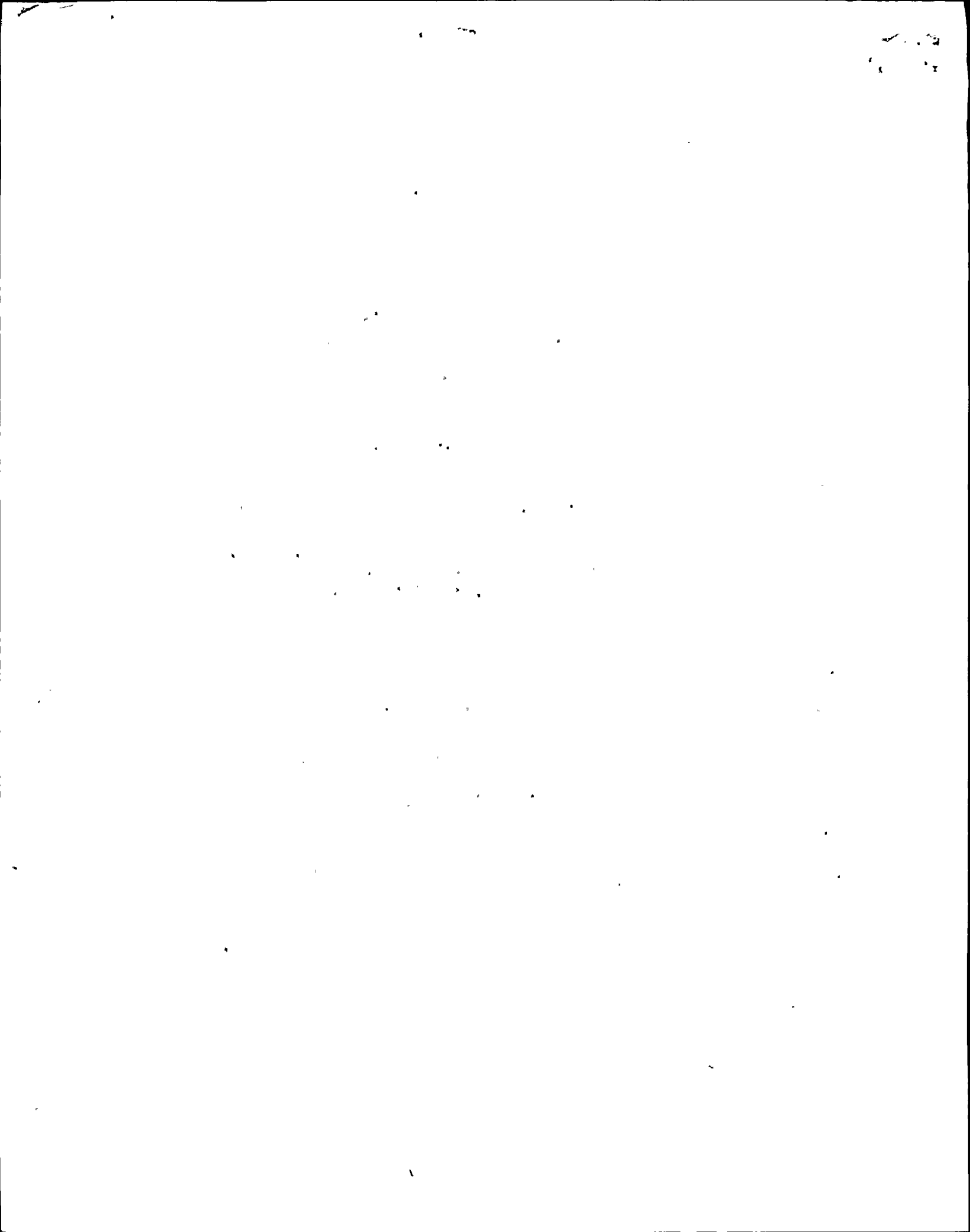
The following table shows the results of the experiment conducted on the 15th of June 1954. The data is presented in a tabular format with columns for 'Time', 'Temperature', and 'Humidity'. The values are recorded at intervals of 15 minutes from 10:00 AM to 12:00 PM.

Time	Temperature (°C)	Humidity (%)
10:00	22.5	65
10:15	23.0	66
10:30	23.5	67
10:45	24.0	68
11:00	24.5	69
11:15	25.0	70
11:30	25.5	71
11:45	26.0	72
12:00	26.5	73

ADDENDUM TO INTERVIEW OF MARK A. BODDIE / NADE (RO)  
(Name/Position)

<u>Page</u>	<u>Line</u>	<u>Correction and Reason for Correction</u>
10	11+12	last word on line 11 should be subsequent. subsequent swell doesn't cause further problems.
12	19+20	It's up to the SSS's discretion as to what level board he would like maintained
13	2+3	It took to tank, taking a suction from the CST and returning to the CST.
13	11	looking for any rod position indication and
14	19+20	This was the first Clarify - SRM's are invalid while being inserted or moving into the core. At this time SRM's were fully inserted & gave valid indication of power
17	11	we had secured injection to the vessel
19	24+25	<u>ROD</u> WORTH MINIMIZER
22	2	Change "2 or 2.3" to 202.3.
23	2	Delete when power was restored
23	8	Change "assert" to insert
24	2	Change "4" to for
24	5	Delete

Page 2 of 2 Signature Mark A. Boddie Date 8/23/91



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
INCIDENT INVESTIGATION TEAM

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Interview of :  
MARK BODOH :  
(Closed) :  
-----

Conference Room B  
Administration Building  
Nine Mile Point Nuclear  
Power Plant, Unit Two  
Lake Road  
Scriba, New York 13093  
Monday, August 19, 1991

The interview commenced, pursuant to notice,  
at 10:22 a.m.

PRESENT FOR THE IIT:  
John Kauffman, NRC  
William Vatter, INPO  
PRESENT WITH MR. BODOH:  
Mike Colomb, Niagara Mohawk

1972

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## P R O C E E D I N G S

[10:22 a.m.]

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2  
3 MR. KAUFFMAN: It's August 19 at 10:22 a.m. We're  
4 in the Nine Mile Point, Unit Two, P admin building. We're  
5 here conducting an interview of Mark Bodoh concerning the  
6 Nine Mile Point Two event of August 13, 1991.

7 I'm John Kauffman, NRC. I'll be leading the  
8 interview.

9 MR. VATTER: I'm Bill Vatter. I work for INPO.

10 MR. COLOMB: I'm Mike Colomb. I work for Niagara  
11 Mohawk. I'm the operations manager at Unit Two.

12 MR. BODOH: I'm Mark Bodoh. I'm a reactor  
13 operator, control room operator. I've had a license for  
14 approximately -- a little over a year and a half. Prior to  
15 that I was a non-licensed operator, and prior to that I was  
16 a nuclear machinist's mate in the Navy for six years.

17 MR. KAUFFMAN: Okay, Mark. My understanding is,  
18 you were on the midnight shift the night that the UPS  
19 transformers were lost. I'd like for you to tell us the  
20 plant conditions, a little bit about the equipment out of  
21 service prior to the event, and then, when the event  
22 occurred, the indications you saw and the actions you took  
23 and that others were taking, to the best of your  
24 recollection.

25 MR. BODOH: You want me to give you a dissertation



1 of everything I saw and did?

2 MR. KAUFFMAN: As best you can. At certain  
3 points we may interrupt and ask questions about specifics,  
4 but just kind of walk us through the event, if you can.

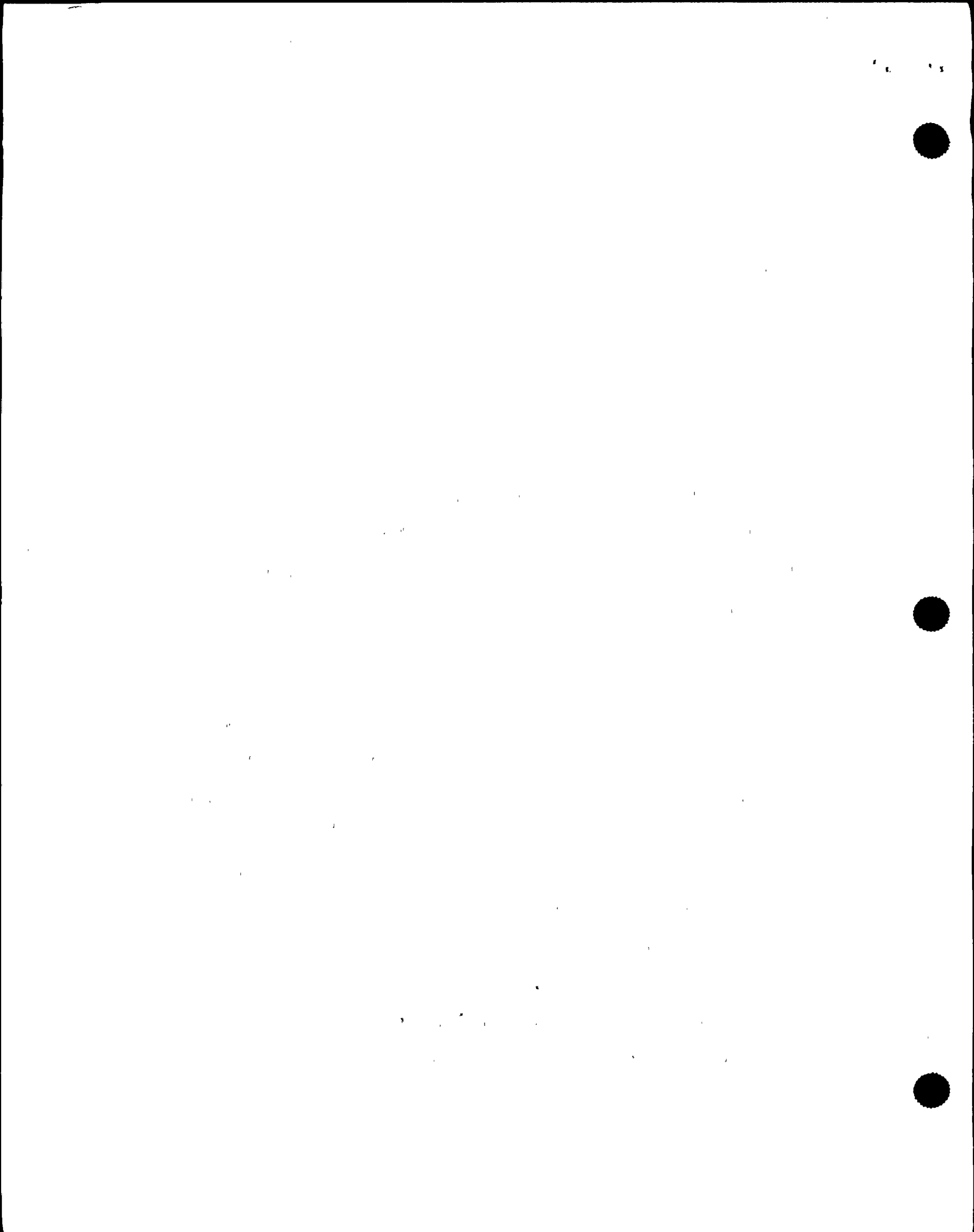
5 MR. BODOH: All right.

6 MR. VATTER: Maybe you could start by saying in  
7 general what your responsibility was during the shift and  
8 where you were before it happened and when it happened, that  
9 kind of thing.

10 MR. BODOH: I was the control room reactor  
11 operator. My specific duties are to take direction from the  
12 CSO and monitor the electric plant and balance of plant.  
13 That's not all that I do. The CSO and myself basically  
14 share the responsibilities of monitoring both the reactor  
15 plant, the electric plant, and the balance of plant.

16 Normal shift duties, aside from monitoring  
17 everything, is to respond to annunciators in the control  
18 room and, I guess, give orders to the non-licensed personnel  
19 in the plant in accordance with what's put out at the night  
20 notes. As such, I'm not specifically assigned to be in the  
21 control room the whole time. At the time of the incident, I  
22 was in the locker room. I was changing my shoes. This was  
23 just prior to the event.

24 MR. VATTER: You had taken a break to go out of  
25 the locker room?



1 MR. BODOH: That's correct.

2 MR. VATTER: What was your reason for going there?

3 MR. BODOH: I was changing my shoes. Normally I  
4 wear tennis shoes. If I have to go out in the plant, I have  
5 safety shoes that I put on, so I put them on at the  
6 beginning of shift and I change them just prior to the end  
7 of shift.

8 MR. VATTER: Oh, okay. So you were getting ready  
9 for the end of shift.

10 MR. BODOH: For shift turnover, correct.

11 In the locker room, I heard a boom, and the lights  
12 dimmed. Immediately I called the control room on the  
13 telephone and talked with the CSO. I asked him what was  
14 going on. His response at that time was, I don't know. I  
15 told him that I was on my way up to the control room.

16 Upon entering the control room, the biggest thing  
17 I noticed -- I came in the back door -- was that it was  
18 very, very quiet. Normally you hear the alarm typers or  
19 printers; you hear the fans; there was no sound whatsoever.  
20 It was very, very quiet. As I came up at the controls area,  
21 I noticed that we had no annunciators, except for a few that  
22 were flashing, but there were no sounds, no audible alarms.

23 MR. VATTER: Excuse me. When you came into the  
24 control room, was Don Bosnic coming into the control room at  
25 about the same time? Do you remember seeing him?



1 MR. BODOH: Not when I first entered.

2 MR. VATTER: That was later.

3 MR. BODOH: Yes.

4 MR. VATTER: Okay. Excuse me. Go ahead.

5 MR. BODOH: Upon entering the control room, the  
6 SSS, Mike Conway, directed me to go to the relay room and  
7 look at our relay instrumentation for the normal station  
8 service transformer. I exited the control room and, on my  
9 way down, noted that we had no emergency lighting or egress  
10 lighting in the hallways going down to the relay room.

11 MR. KAUFFMAN: Can you give me -- I'm not  
12 familiar with your plant. If you could tell me the  
13 elevations.

14 MR. BODOH: I left from elevation 306, and I was  
15 headed to elevation 288 in the control building. In the  
16 stairwell, there were no lights. I didn't have a flashlight  
17 with me when I exited the control room. At that time I felt  
18 a sense of urgency to get to the relay room to see what  
19 indications we had for the normal station service  
20 transformer, so I used the handrail and went cautiously down  
21 the stairs. Roughly halfway down to the elevation, you  
22 could see light coming through the door from the next  
23 elevation, so I continued down.

24 I entered the relay room, and I went to the normal  
25 station service transformer relaying. I noted that the





1 primary and backup protection -- the 86 relays were all in,  
2 the lock-out relays. I also noticed that we had the  
3 generator phase differential over current flagged. At that  
4 point I headed back up to the control room and relayed that  
5 information to the SSS. Then I stationed myself at panel  
6 603 to see if I could determine what reactor power, reactor  
7 pressure, and reactor vessel level were.

8           The mode switch was already in shutdown, and a  
9 portion of the immediate scram actions had already been  
10 carried out.

11           MR. VATTER: Do you know who put the mode switch  
12 in shutdown?

13           MR. BODOH: The CSO.

14           MR. VATTER: And you were there when that  
15 happened?

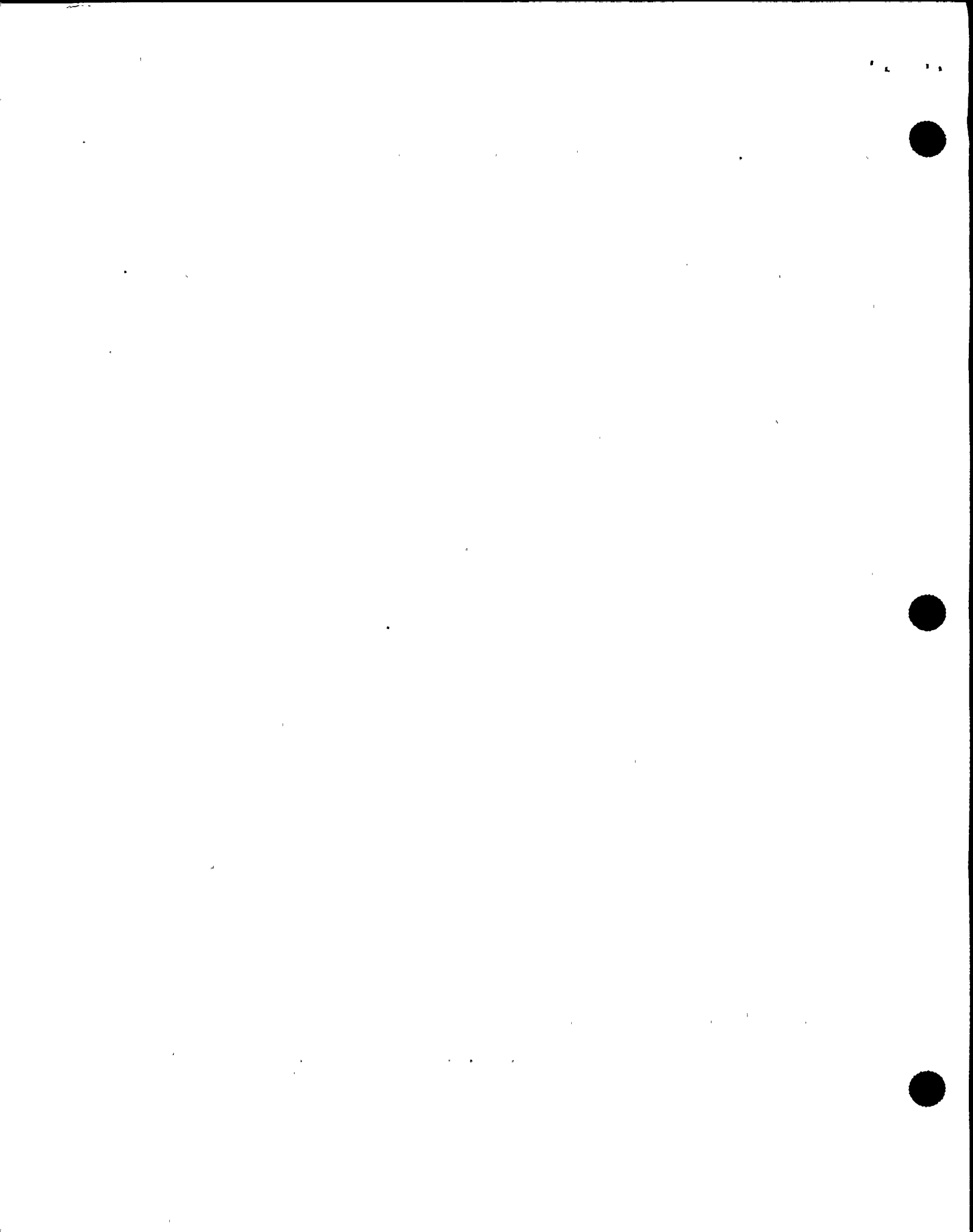
16           MR. BODOH: No, I was not.

17           MR. VATTER: Was that between the time that you  
18 left to go to the relay room and came back that that  
19 happened?

20           MR. BODOH: That was done prior to my first  
21 entering the control room.

22           MR. VATTER: Okay. Thank you.

23           MR. BODOH: When I got to panel 603, vessel level  
24 at that point was just -- I'm not sure of the exact level.  
25 We were just above the EOP setpoint at 159.3, and the SSS



1 had gone to the EOP desk, and he had directed -- At that  
2 point we weren't in the EOPs. The CSO had stepped back.  
3 While I was monitoring the 603 panel, we hit 159.3, which is  
4 our entry level for the emergency operating procedures. The  
5 SSS asked for what systems we had available for injection.

6 At that point, I noted that the feed pumps had  
7 both tripped. The Alpha condensate booster pump had  
8 tripped, and the Charlie condensate booster pump had  
9 started.

10 MR. VATTER: The Bravo pump was --

11 MR. BODOH: The Bravo pump was running and  
12 continued running.

13 MR. VATTER: Is that the first time that you  
14 noticed that the feed pumps had tripped?

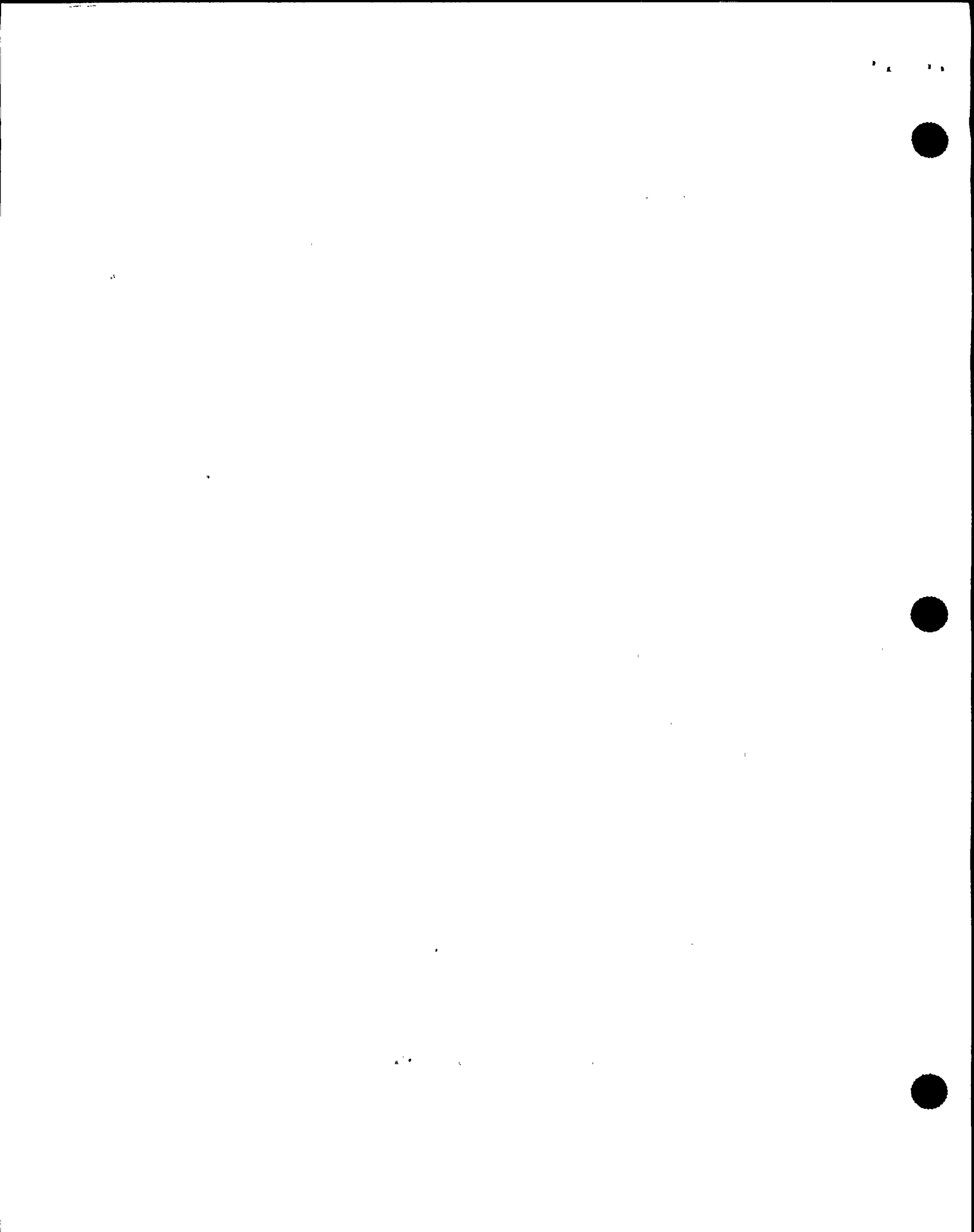
15 MR. BODOH: Yes.

16 MR. KAUFFMAN: And that's after you had gone to  
17 the relay room.

18 MR. BODOH: That's correct.

19 I informed that we had two condensate booster  
20 pumps and two condensate pumps available for injection. At  
21 that point our pressure was roughly around 960 pounds.  
22 Another operator was directed to monitor reactor vessel  
23 level and reactor pressure using the post-accident  
24 monitoring recorders.

25 MR. VATTER: Was there any attempt to restart a



1 feed pump?

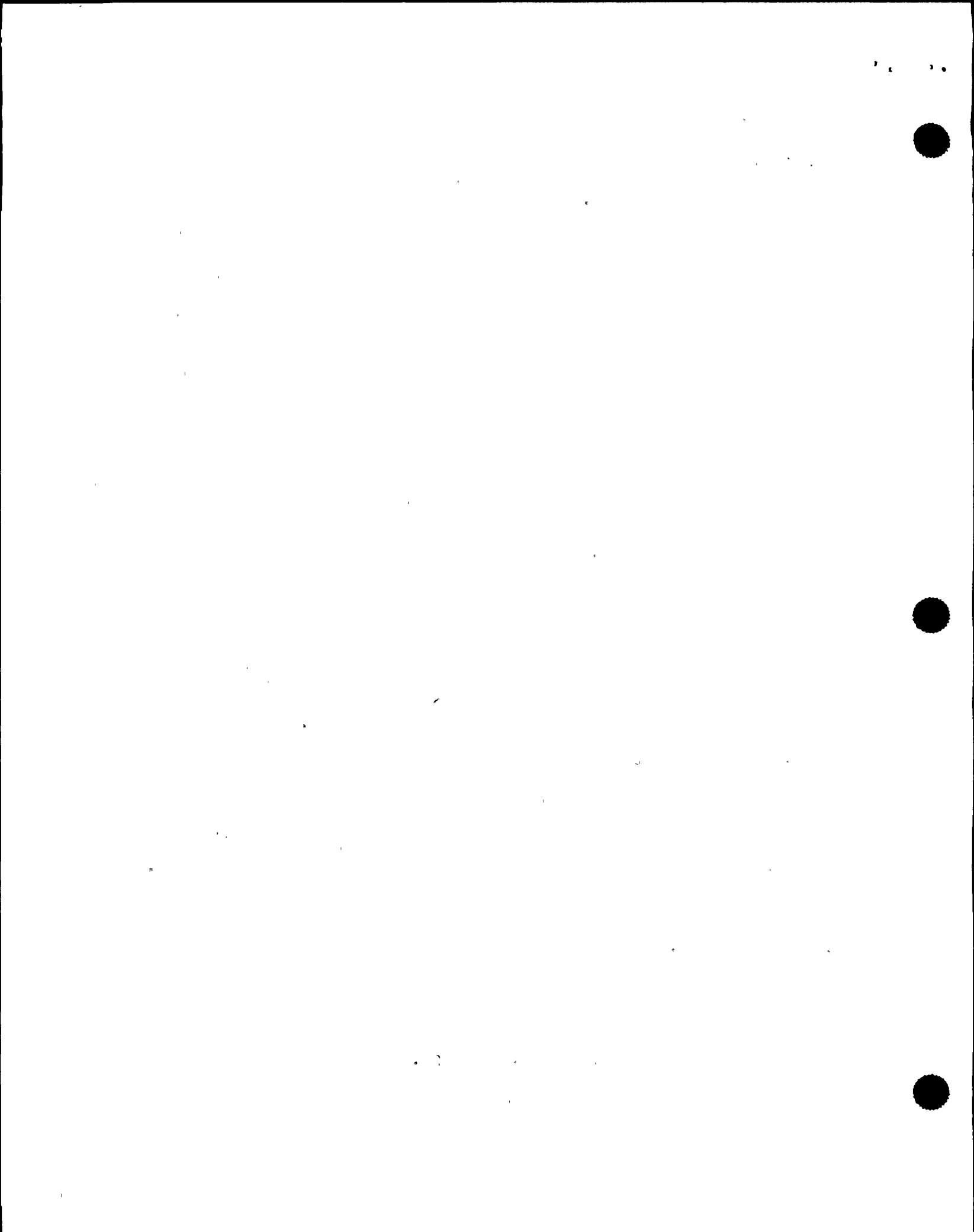
2 MR. BODOH: No.

3 MR. VATTER: What does the procedure say about a  
4 feed pump if it's tripped? To just leave it off and use  
5 other water sources?

6 MR. BODOH: I would look at our procedure for a  
7 tripped feed pump, and I would have to look at that to tell  
8 you exactly what it says. Normally, before we get to a  
9 condition where we're going to have to trip a feed pump, we  
10 take the action so that we make sure the feed pump is in  
11 standby and ready to operate. At this point, the feed pump  
12 had been warmed up and was available for service and had a  
13 hold out on it -- the one pump that we weren't operating,  
14 which was Alpha. It had a hold-out on it because we needed  
15 for Chemistry to obtain a sample due to a maintenance  
16 activity where we had to inject some fermanite into a  
17 leaking valve, and they wanted to sample that prior to  
18 placing it in service to see that we didn't have any  
19 contaminants possibly leaching out of the fermanite that we  
20 put in and possibly causing us problems with the reactor  
21 plant chemistry.

22 MR. VATTER: What would you have needed to do to  
23 start a feed pump -- just turn it on, or is there to it than  
24 that?

25 MR. BODOH: Once the feed pump is in standby, if



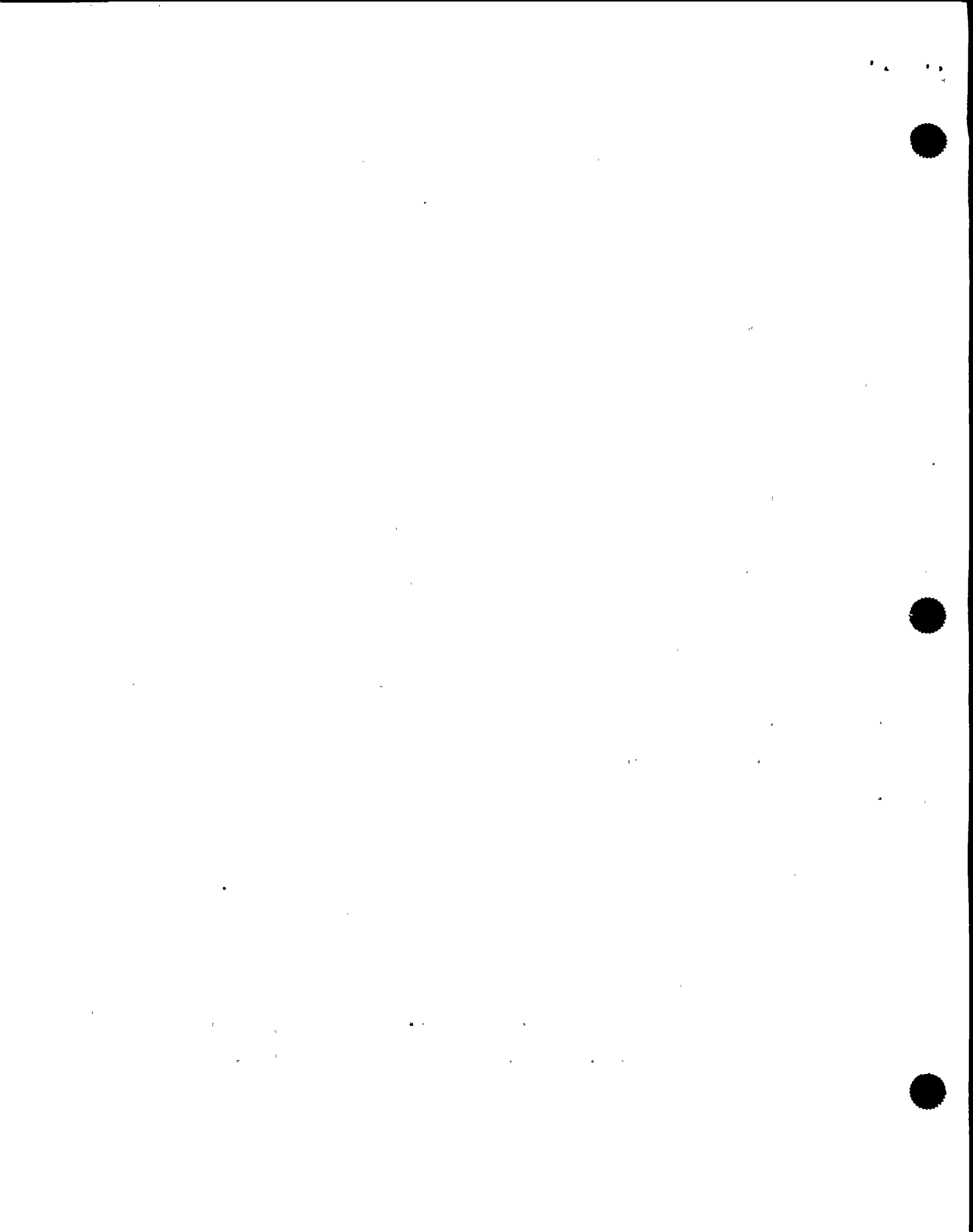
1 the SSS directed that the feed pump be started, we would  
2 still send an operator down and have him look everything  
3 over quickly before we actually started it.

4 MR. VATTER: To put it in standby required you to  
5 do what?

6 MR. BODOH: There is a whole series of valve line-  
7 ups, checking to see that there is seal water, checking to  
8 see that there is cooling in your normal valve line. Along  
9 with that, an operator would also have to be sent down to  
10 the con-demin system to make sure that we had the proper  
11 line-up for demineralizers in service or take them out of  
12 service, as necessary, to support the starting of the feed  
13 pump.

14 When we entered the EOPs on vessel level, the SSS  
15 directed the CSO to manually initiate reactor core isolation  
16 cooling, to restore vessel level. The CSO verified that the  
17 turbine had tripped, and he manually initiated reactor core  
18 isolation cooling using the manual initiation pushbutton.  
19 At first, the controller is in automatic, and there was some  
20 erratic operation of reactor core isolation cooling, so the  
21 CSO took manual control and operated it manually until he  
22 got all his parameters stabilized to inject to the vessel.

23 During this time, I was still trying to see if I  
24 could find any indication for where the rods were, what  
25 power was. I noted also that narrow range instrumentation





1 for the A channel was down-scale. Bravo and Charlie were  
2 indicating a normal condition for the scram.

3 MR. VATTER: Which was about what?

4 MR. BODOH: I would be speaking from simulator  
5 experience on what vessel would be following the scram.

6 MR. VATTER: So you don't remember what they were  
7 reading this time?

8 MR. BODOH: Initially upon the scram, it hadn't  
9 reached 159.3. At 159.3 we received our setpoint set-down,  
10 which reduces the setpoint to maintain vessel level lower,  
11 so that, after the water is added to the vessel and the subs  
12 can swell, the cooler water doesn't cause us further problem  
13 by possibly swelling to a point where we would reach our  
14 high setpoint and possibly secure our injection, trip our  
15 feed pumps.

16 Initially I don't know exactly what level was. I  
17 know it was about 159.3.

18 MR. KAUFFMAN: About long into the event are we  
19 talking here about, 6:00, 6:05, 6:10? We're trying to get a  
20 ball park on times, because normally we have alarm print-  
21 outs.

22 MR. BODOH: Right.

23 MR. KAUFFMAN: Just a ball park.

24 MR. BODOH: This was prior to 6:00. This was,  
25 I'll say, approximately seven, eight minutes into the



1 incident.

2 From here, a couple other relief operators and an  
3 operator off the other shift -- reactor operators -- had  
4 come into the control room. One operator was directed to  
5 place RHS loop Alpha in suppression pool cooling, and  
6 another operator was directed to take level control with  
7 reactor core isolation cooling.

8 MR. KAUFFMAN: Do you recall what level band he  
9 was asked to maintain?

10 [Pause.]

11 MR. KAUFFMAN: It's okay if you don't remember.

12 [Pause.]

13 MR. BODOH: I know what level band he would have  
14 been asked to maintain, but I don't remember specifically  
15 hearing it.

16 MR. KAUFFMAN: Okay. You didn't hear it, but  
17 what level band was appropriate?

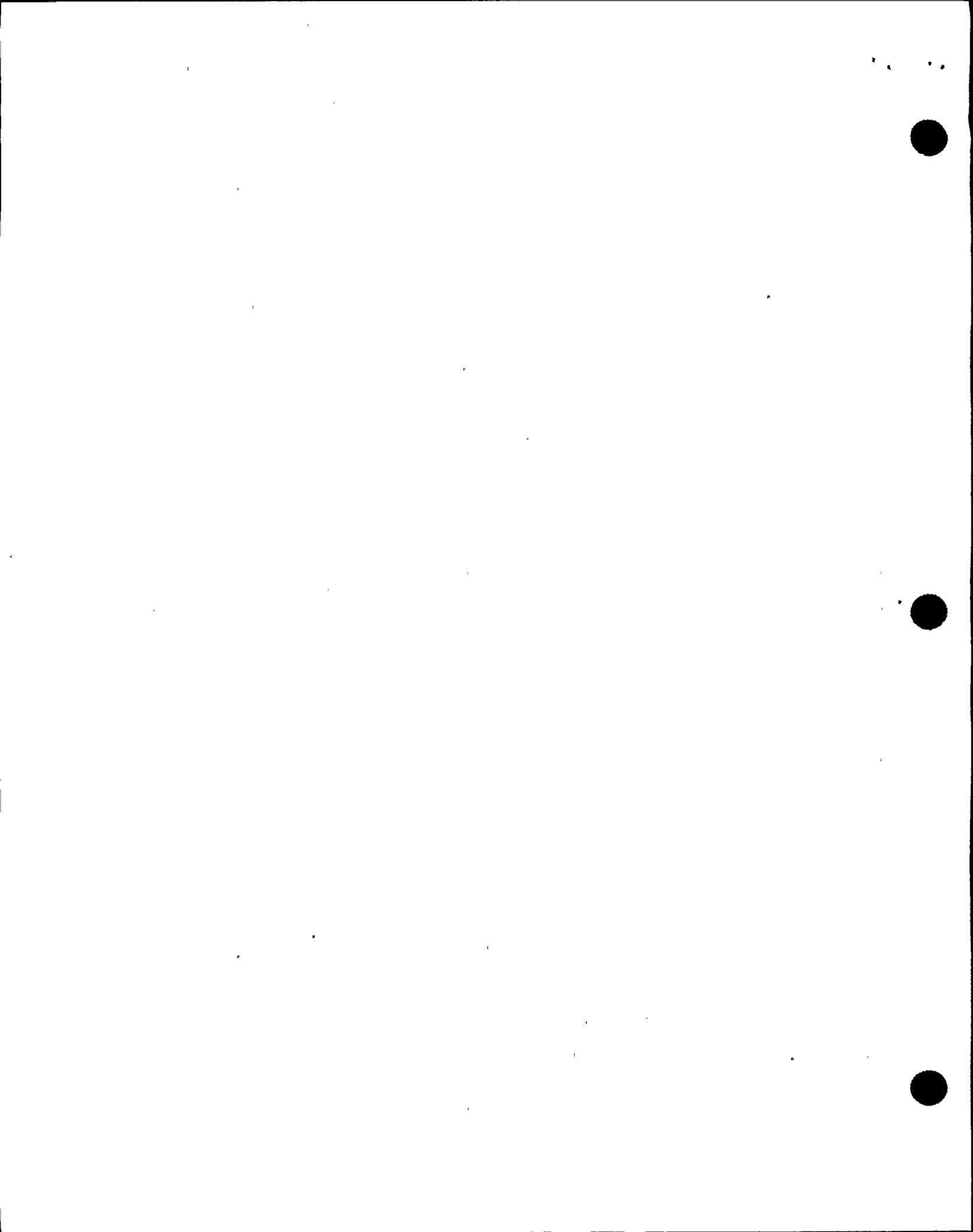
18 MR. BODOH: From 159.3 to 202.3.

19 MR. KAUFFMAN: That's what they would have  
20 typically asked?

21 MR. BODOH: Yes.

22 MR. KAUFFMAN: But you don't recall hearing them  
23 ask this time.

24 MR. BODOH: I know he asked for a band, but I  
25 can't recall what parameters he said.



1 MR. KAUFFMAN: That's fine.

2 MR. COLOMB: Can I ask a question?

3 MR. KAUFFMAN: Sure.

4 MR. COLOMB: You said, what level band would have  
5 been appropriate. I'm not sure what Mark's basing that  
6 "would have been appropriate" on, but --

7 MR. VATTER: Okay. Some clarification. What  
8 would he have expected to hear, based upon experience in the  
9 simulator, probably more than anything.

10 MR. BODOH: Our EOPs directed us to restore and  
11 maintain vessel level, 159.3 to 202.3.

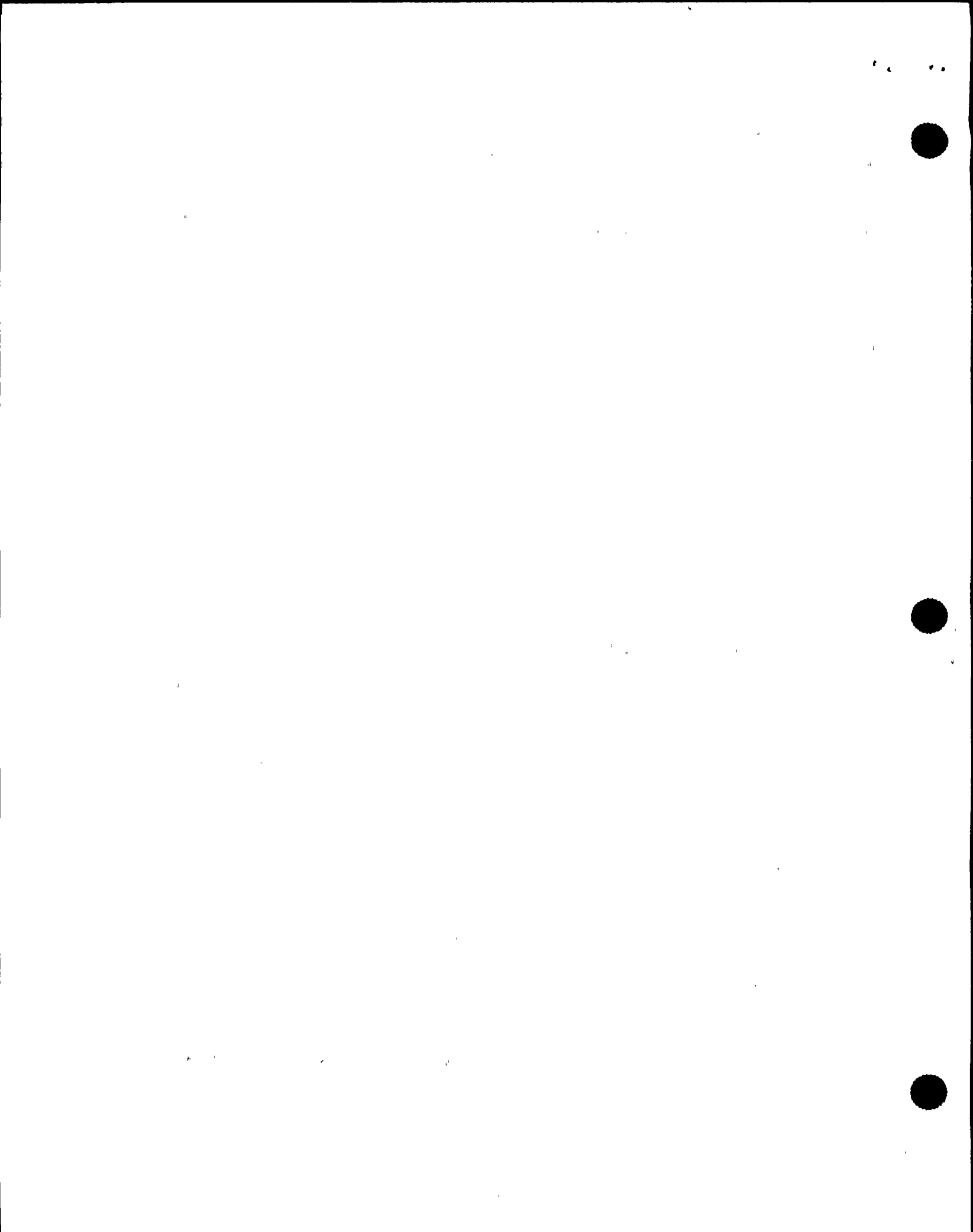
12 MR. VATTER: Right. What I'm really driving at  
13 is, would it have been common to have a more narrow band  
14 than that for a guy controlling RCIC? Is that what they  
15 typically do in the simulator, control at 159.3 to 202.3, or  
16 could they --

17 MR. BODOH: That is what is directed by our EOPs.

18 MR. VATTER: Okay. That's fine.

19 MR. BODOH: I mean, what's up to the SSS's  
20 discretion, what band he gives to the operator.

21 At this point, level was being restored, and we  
22 did have indication that level was rising by the PAM  
23 recorders -- post-accident monitoring recorders -- and also  
24 that our pressure was dropping. And at this point the  
25 operator, which was Brian Hilliker, on the controlling level



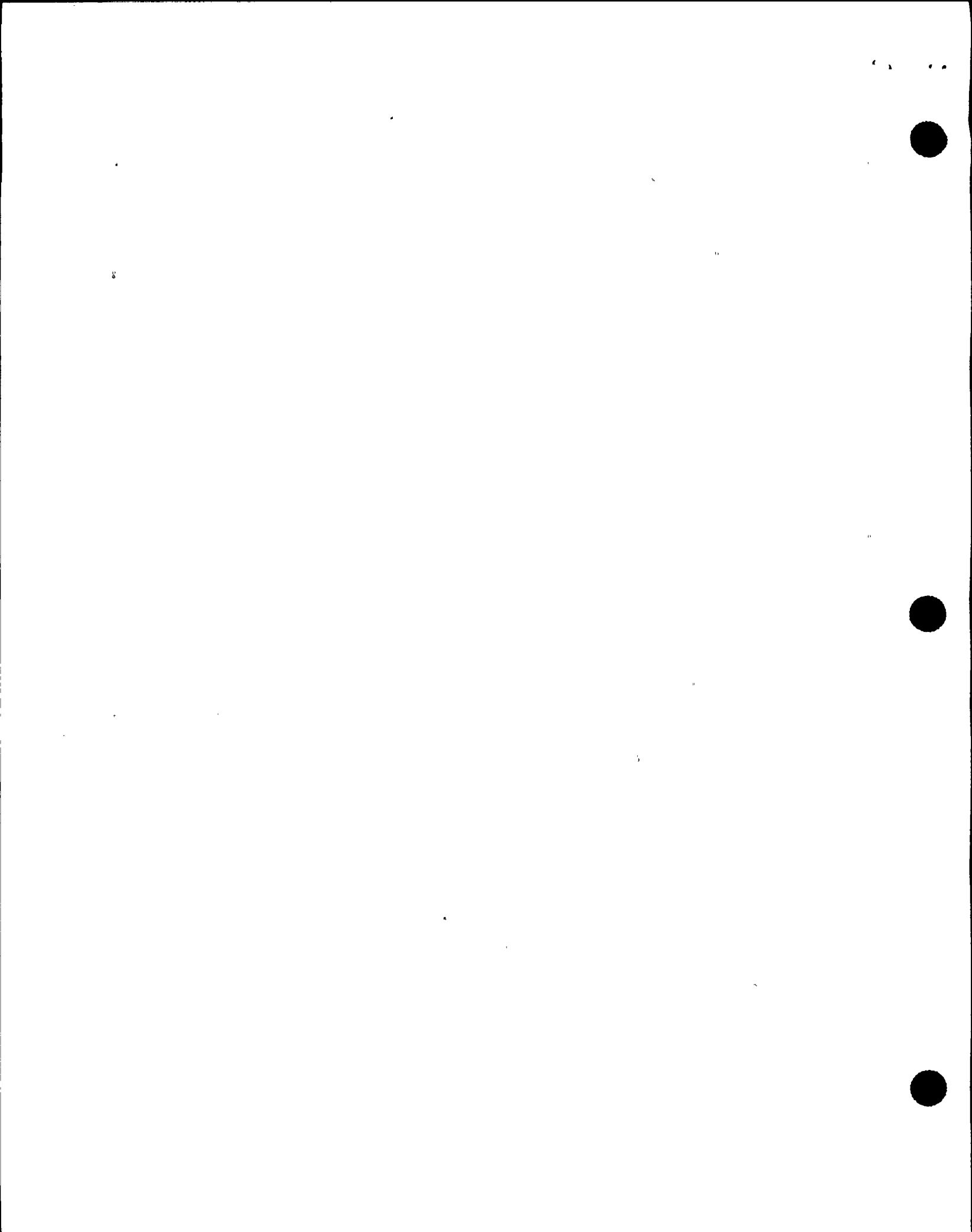
1 had started to take the steps to place RCIC on a test flow  
2 path from tank to tank, or the tank that takes the suction  
3 on the CST and returning to the CST.

4 In this time frame was when the SSS notified all  
5 the control room operators that he was declaring a site area  
6 emergency based on having no annunciation and the plant  
7 having gone through a transient, and possibly still in the  
8 middle of a transient.

9 At this point he also entered one of our  
10 contingencies, C-5, for vessel level control. In this  
11 interim, I was still looking for and carrying out the  
12 immediate actions of the scram. I don't know if you want to  
13 know all those, but verifying that the house loads had  
14 transferred to off site, the turbine was tripped, clean-up  
15 was secured; continuing to drive in all our IRM and SRM  
16 detectors so that we could possibly get some indication of  
17 what power we were at. The IRMs had already been driven in,  
18 and they were still on range 10 and indicating down-scale,  
19 although there was no indication on APRMs on panel 603.  
20 Also, there was no indication on rod sequence control, the  
21 full core display, or the rod worth minimizer at that time.

22 MR. VATTER: Did you select to arrange an IRM that  
23 you could see the power?

24 MR. BODOH: I started following power down, and I  
25 ended up with all range switches on range 1, and half of the





1 indication for the detectors indicated down-scale, and the  
2 other half had no lights.

3 MR. KAUFFMAN: Had which?

4 MR. BODOH: Had no lights, no light indication. I  
5 expected to see down-scale or nothing. Half of them were  
6 indicating down-scale, and the other half, there were no  
7 lights.

8 MR. KAUFFMAN: What do the signal lights signify?

9 MR. BODOH: That that range is down-scale.

10 MR. KAUFFMAN: Okay.

11 MR. BODOH: When the SRMs had reached full in, I  
12 noted that SRM Charlie was indicating 2 to 3 times 10 to the  
13 4th counts per second, and I informed the SSS of that fact.

14 MR. VATTER: About what time was that?

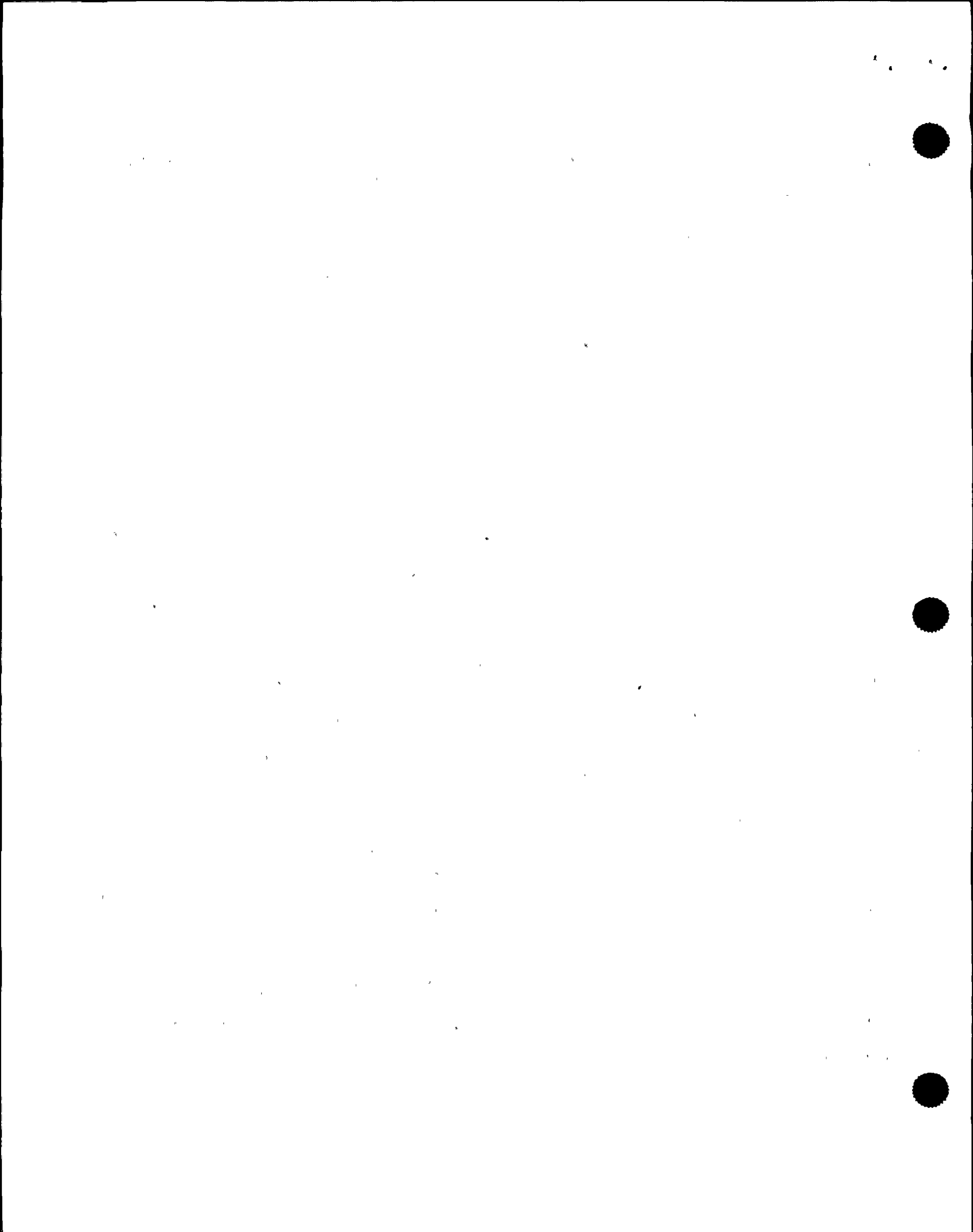
15 MR. BODOH: I couldn't give you a time.

16 MR. VATTER: But that's the first that you looked  
17 at the SRMs, or the first that they were giving you any  
18 indication?

19 MR. BODOH: This was the first that the SRMs --  
20 See, the SRMs had to be driven in, also.

21 MR. VATTER: I understand.

22 MR. BODOH: When I was first there, the SRMs  
23 hadn't been driven in, so I drove the SRMs in. As soon as  
24 the SRMs indicated full in, then I gave what indications I  
25 had to the SSS.



1 MR. VATTER: So when the SRMs were full in, the  
2 first indication after that was --

3 MR. BODOH: Charlie range reading 2 to 4 times 10  
4 to the 4th counts per second.

5 Bravo range and Delta range were in, somewhere in  
6 the range of five times ten to the third.

7 Alpha SRM at that point was inop.

8 MR. VATTER: The B -- the Bravo and Charlie were  
9 five times ten to the third?

10 MR. BODOH: Bravo and Delta.

11 MR. VATTER: Bravo and Delta --

12 MR. BODOH: Approximately.

13 MR. VATTER: That's right and Charlie was two to  
14 four times ten to the fourth?

15 MR. BODOH: Correct. It had been noted that  
16 Charlie normally read higher than the other ranges.

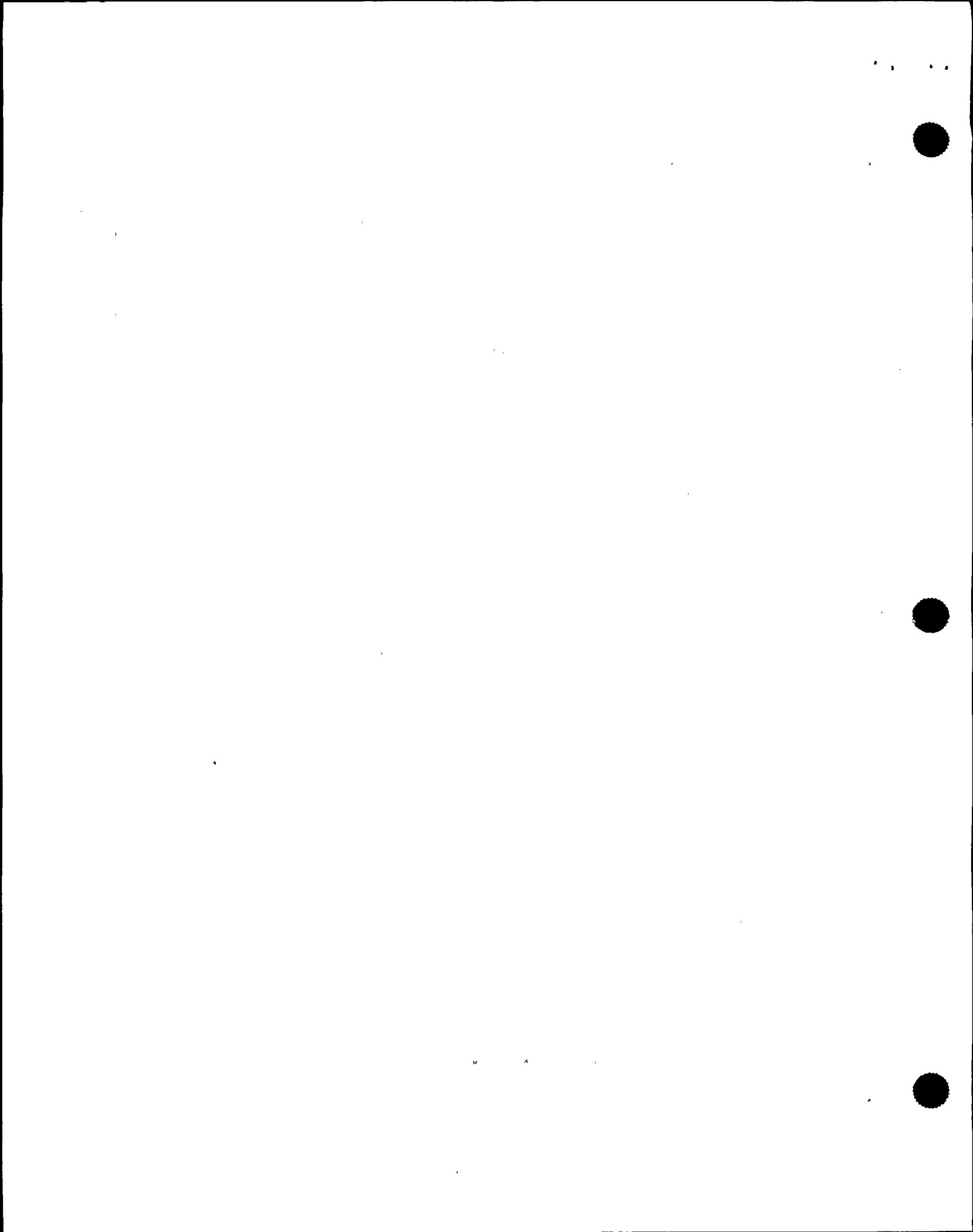
17 MR. VATTER: That was a known situation.

18 MR. BODOH: Excuse me?

19 MR. VATTER: That was a known situation that --

20 MR. BODOH: Yes, and we were also getting  
21 intermittent short period on range Charlie, which was also  
22 noted.

23 At this time we had added enough water to the  
24 vessel that level was starting to swell and the operator  
25 controlling level had already placed RCIC in its test flow



1 path from CST to CST.

2 We had reached greater than 202 inches, at which  
3 point we would have expected to get the high level trip  
4 indication for the feed pumps and that did not occur.

5 We have little amber lights that indicate when we  
6 have reached the high level trips at that point.

7 MR. VATTER: Do you know what time that was?

8 MR. BODOH: No.

9 MR. VATTER: But when you got to Level 8, the feed  
10 pump trip did not occur?

11 MR. BODOH: The feed pumps were already tripped.

12 MR. VATTER: But you didn't get the trip signal?  
13 That's what I thought you said.

14 MR. BODOH: I would have to verify that by  
15 computer points, whether or not we actually go the trip  
16 signal. What I was talking about was we had amber  
17 indication. Once we reached that level, that tells us we  
18 have reached the high level trip set point.

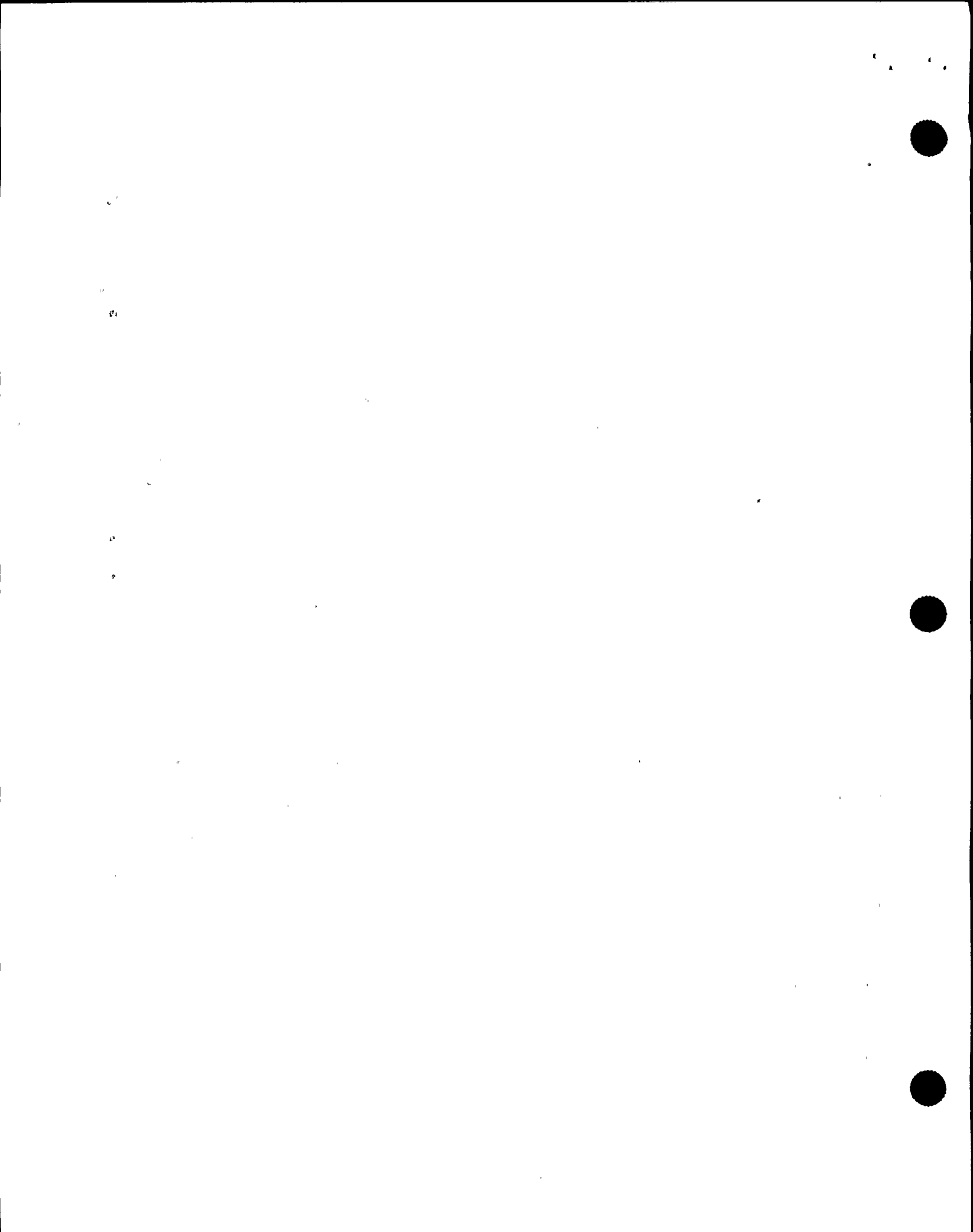
19 MR. VATTER: The amber indication didn't work.

20 MR. COLOMB: I think that's what Mark is saying.

21 MR. BODOH: Yes.

22 MR. COLOMB: He knows the amber lights didn't come  
23 on. He doesn't know that that means that the feed pumps  
24 didn't get a trip signal. He just --

25 MR. BODOH: Correct.



1 MR. COLOMB: -- electrically it might take some  
2 research, right? But he knows that the amber lights didn't  
3 come on at that point, which he was expecting to see. See  
4 what I'm saying?

5 MR. KAUFFMAN: Your event reconstruction says that  
6 was about 6:15, is that about the time this happened?

7 MR. BODOH: Yes.

8 MR. KAUFFMAN: You can refer to the this too, if  
9 you want.

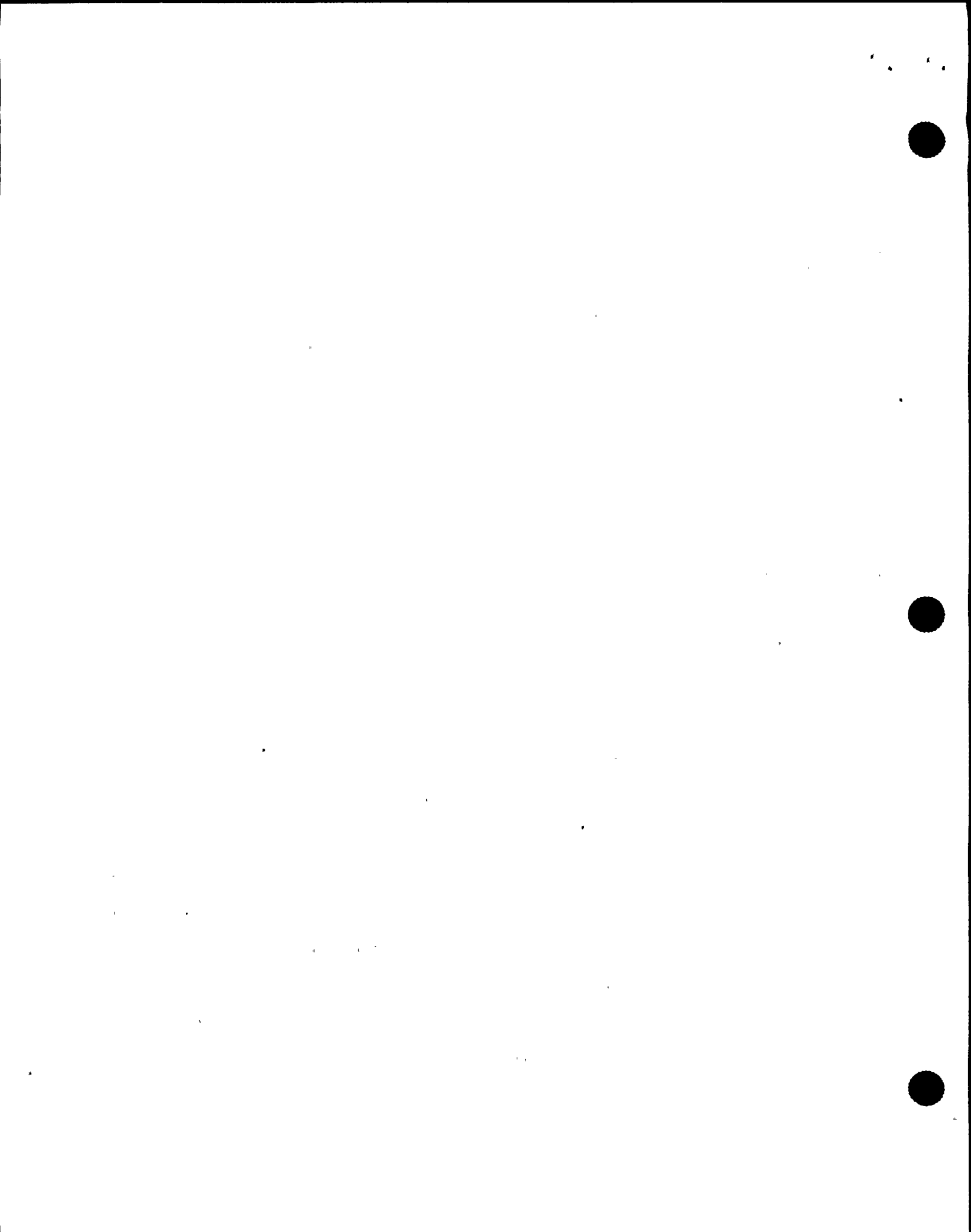
10 MR. BODOH: I couldn't give you times.

11 Also at this point we had secured, as I said we  
12 were on CST to CST with reactor core isolation cooling.

13 Our pressure had dropped. I think the lowest  
14 pressure I had heard at that point from the operator  
15 monitoring the PAM recorders was about 580 pounds. We also  
16 had one of the alpha feed injection check valve was  
17 indicating an intermediate position which was also relayed  
18 to the SSS, but we did not have any indication at that time  
19 that we were feeding.

20 That is lower than the shutoff head of the  
21 condensate booster pumps and at that time the SSS directed  
22 to secure the condensate booster pumps and shut the feed  
23 pump discharge valves.

24 To ensure that, we were not injecting through our  
25 feed and condensate system.





1           At this time or shortly before this, operators  
2 were dispatched to investigate the problem with the  
3 uninterruptable power supplies in an attempt to restore  
4 power to them to restore our indications in the control  
5 room.

6           MR. VATTER: Can you recall exactly how that  
7 conversation went or can you give us as much detail as you  
8 have on the instructions to the operator to go work with  
9 the UPS?

10          MR. BODOH: Not specifically.

11          MR. VATTER: But some operators were told --

12          MR. BODOH: They were, the operators were  
13 instructed to investigate the condition of the  
14 uninterruptable power supplies.

15          MR. VATTER: So it was investigate?

16          MR. BODOH: Yes.

17          MR. VATTER: Which operators were told that?

18          MR. BODOH: I couldn't give you names. I know  
19 Dave Hanczyk was one of the reactor operators that was  
20 working on investigating and restoring power to the UPS's.

21          MR. VATTER: Were there any other operators that  
22 were sent to the UPS's before Dave Hanczyk?

23          MR. BODOH: There were other operators sent. I  
24 can't say whether they were sent prior to this or with Dave.  
25 I know that there was several operators that were



1 down at the UPS's attempting to restore power to them.

2 This was all hindered by the fact that we didn't  
3 have any plant communications other than the telephone.

4 In this time frame Dave Hanczyk had returned to  
5 the control room to give the station shift supervisor or  
6 site emergency director at that time the status and  
7 condition of the uninterruptable power supplies.

8 I believe this is the time also, or shortly after  
9 this time that they started restoring power to the UPS's,  
10 placing them on their maintenance supply. I don't really  
11 know any of the specifics that they found when they were  
12 down there other than all the breakers were tripped.

13 From my standpoint of where I was the next actual  
14 thing that happened -- I guess that's relative -- was they  
15 restored power and the annunciators come back and I received  
16 my indications for the rod sequence control, full core  
17 display, and the rod worth minimizer.

18 At this time we were attempting to verify that all  
19 rods had been inserted to their full in position. We noted  
20 that the rod sequence control system showed multiple rods  
21 not full in. Rod sequence control disagreed with the  
22 indications we had on the full core display and rod sequence  
23 control and the full core display disagreed with what we saw  
24 on the rad worth minimizer.

25 The rad worth minimizer at that time showed that



1 its indications were shut down, no; all rods in, no; and it  
2 gave indication of one rod that it said was not full in.  
3 That rod, that specific rod, by the full core display was  
4 indicated as being full in.

5 MR. VATTER: So you had a green bottom light on  
6 the full core display for that rod?

7 MR. BODOH: That is correct.

8 MR. VATTER: But the rod worth minimizer said it  
9 was not all the way in.

10 MR. BODOH: That is correct. At this time we  
11 started, I and Dave Rathbun had come up to assist me at this  
12 point in trying to determine which rods and how many rods  
13 were not full in and we did that by proceeding rod by rod  
14 through the rod sequence control indication and verifying  
15 that position against the full core display.

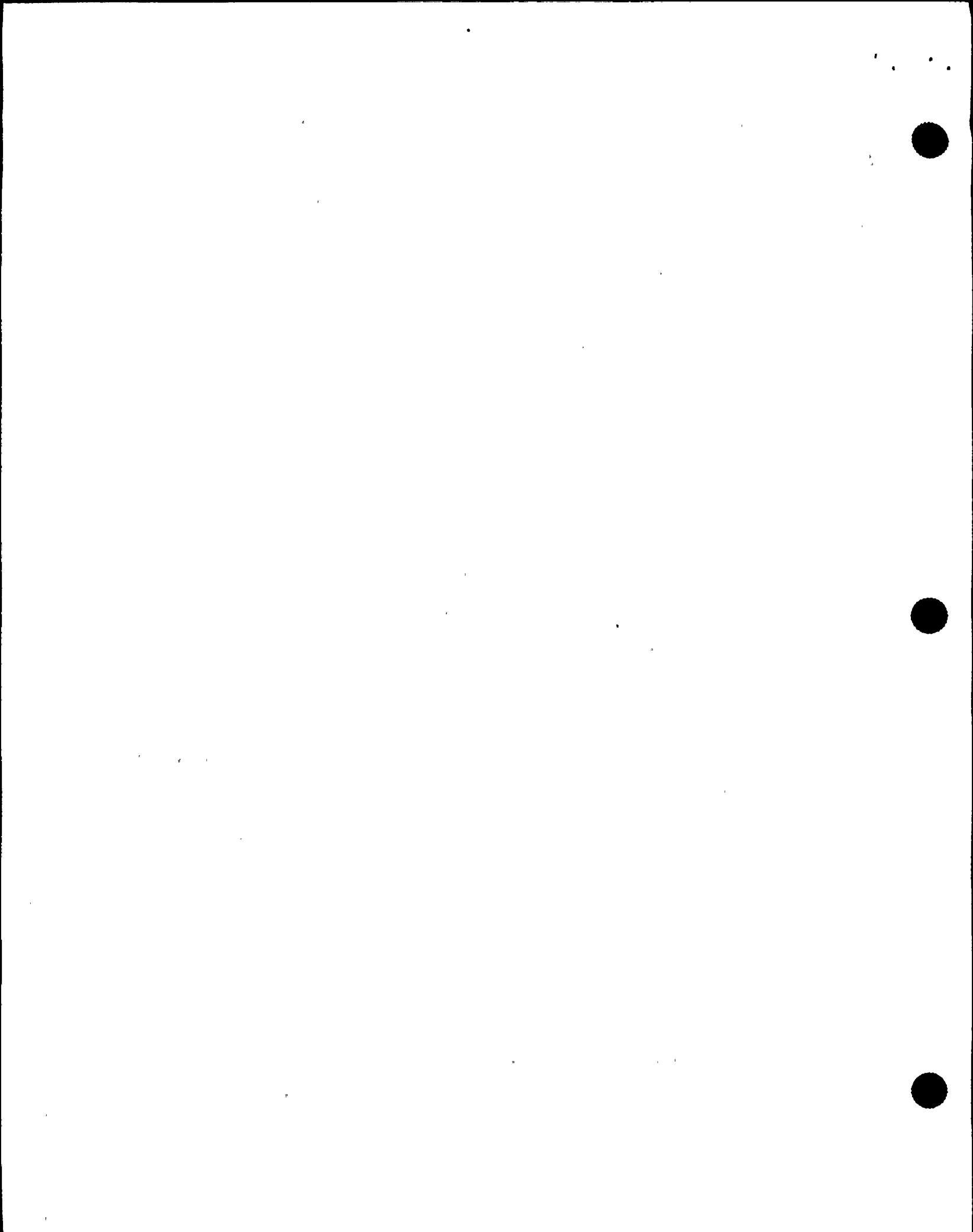
16 In doing that we found that there were multiple  
17 rods on the rod sequence control that did not agree with the  
18 indication on the full core display, being that many of the  
19 rods that were not indicated on the rod sequence control  
20 indicated full in on the full core display.

21 MR. VATTER: Do you have any idea why that might  
22 be?

23 MR. BODOH: At the time? No.

24 MR. VATTER: Now what do you think?

25 MR. BODOH: Now, after talking, I had a



1 conversation with Ray Dean and he informed me that the  
2 indication for the full core display and the rod sequence  
3 control, the position of the rod being full in, comes from  
4 the same source, which at the time I did not know that, so  
5 the two of them should have agreed.

6 At this time Dave Hanczyk went back and reset the  
7 rod drive control system and there was some discussion as to  
8 the scan mode having locked up and that may have been a  
9 possible reason for the rod sequence control and the full  
10 core display not agreeing.

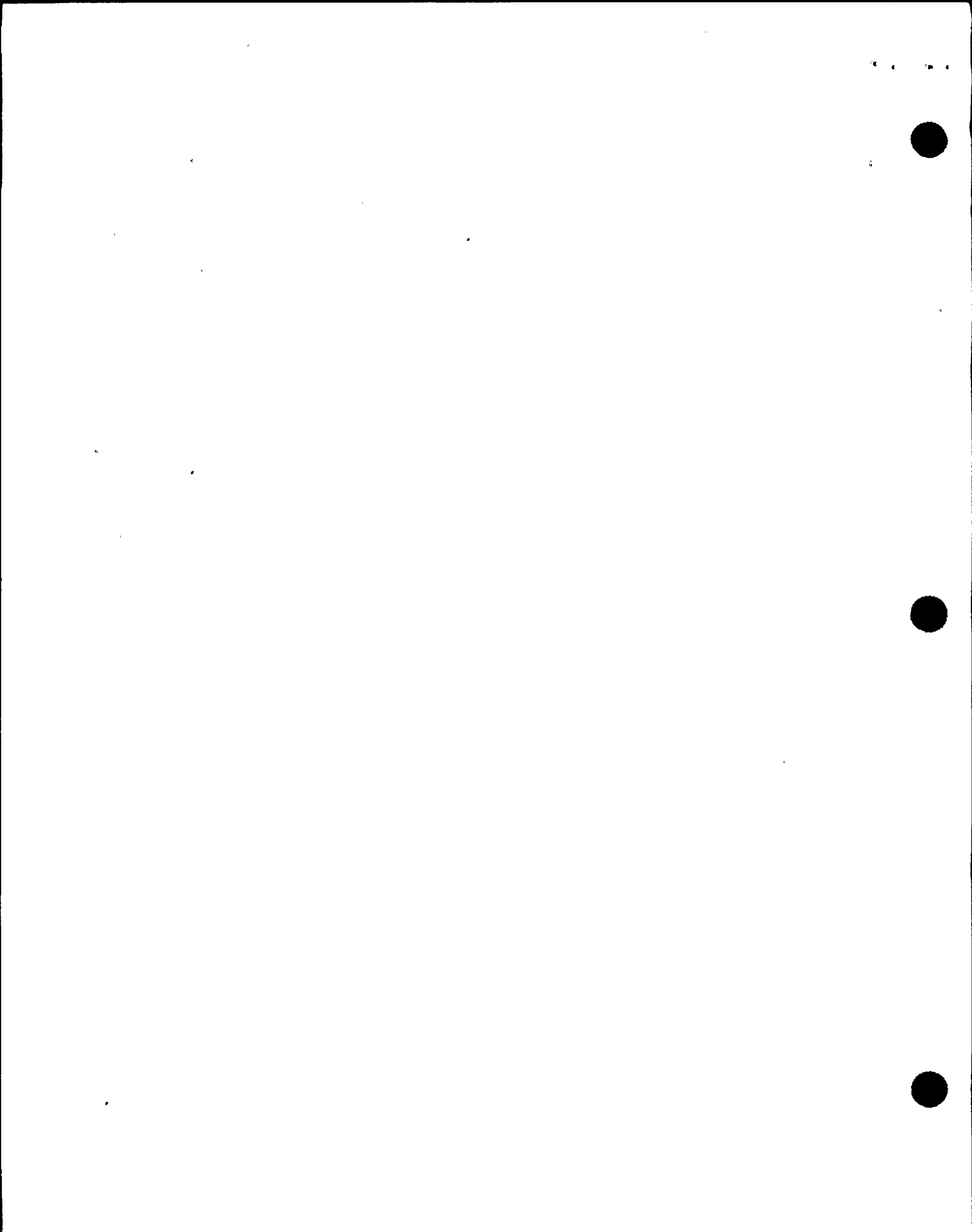
11 When he reset the rod drive control system we were  
12 able to verify that we had six rods that showed no  
13 indication on either the rod sequence control system or the  
14 full core display.

15 At that time the rod worth minimizer still showed  
16 reactor shutdown, no; all rods full in, no; and the same  
17 rod, I think it was 14-31, as being a mispositioned rod when  
18 in fact on the full core display it showed full in.

19 By this time, now, there were many operators  
20 coming in, operators from the day shift -- operators from  
21 the surveillance crew, and relief operators -- coming in and  
22 taking directions from the chief shift operator and starting  
23 to look at balance of plant.

24 MR. VATTER: The CSO was still Mark Davis?

25 MR. BODOH: That is correct.





1           By this time, level had come back on scale, less  
2 than 2 or 2.3, and was slowly dropping. The SSS had given  
3 one operator direction to restart the condensate booster  
4 pumps and have them available for injection, and he also  
5 gave another operator direction to control reactor pressure  
6 utilizing the bypass valves.

7           MR. VATTER: Was he given a band to control?

8           MR. BODOH: Yes, he was.

9           MR. VATTER: Do you remember what it was?

10          MR. BODOH: No. He was given several bands, based  
11 upon the condition of the plant. But our main concern at  
12 this point was not to exceed our cool-down rate, and they  
13 were to work together to maintain vessel level and pressure  
14 and not exceed the cool-down rate.

15          We re-entered the EOPs when level dropped to  
16 159.3. At this point there were some problems with re-  
17 establishing flow to the vessel with the condensate booster  
18 pumps. In starting the condensate booster pumps, it  
19 directs you to shut the suction valve to the feed pumps,  
20 which would isolate the normal high-pressure-low-flow, high-  
21 pressure-high-flow injection paths.

22          Eventually, we did restore feed to the vessel,  
23 utilizing low-pressure-low-flow flow control valve 137.  
24 Back when we restored power, we did get our lights for the  
25 feed pump high-level trip, along with our setpoint set-down



1 indication. We also received our down-scale on the APRMs at  
2 that point, when power was restored, but at that time we  
3 couldn't determine the position of all the rods.

4 MR. VATTER: What did you finally do to get all  
5 the rod position determinations?

6 MR. BODOH: By the emergency operating procedures,  
7 the operator is directed by the site emergency director to  
8 carry out EOP 6, attachment 14, for attempting to assert all  
9 rods. A part of that procedure is bypassing the RPS  
10 interlocks and resetting the scram. When we reset the  
11 scram, that was when we got all rods full in on the rod  
12 sequence control and indication on the rod worth minimizer,  
13 shutdown, yes; all rods in, yes. At that point we informed  
14 the SSS -- I informed the SSS that I had indication that all  
15 rods were full in.

16 At that point, other operators were still  
17 attempting to raise level with injection from condensate and  
18 condensate booster pumps and control pressure and control  
19 our cool-down rate. They also had people securing any  
20 unnecessary steam loads, to minimize any cool-down. Earlier  
21 in the morning, we had hung mark-ups for various electrical  
22 PMs and maintenance on the Division 2 RHR Bravo and RHR  
23 Charlie loops. We were in the process of clearing those, so  
24 that we could set RHR Bravo up for shutdown cooling when we  
25 satisfied the interlocks to place that loop in shutdown



1 cooling.

2 All the scram actions for panel 603 had been  
3 completed, and at that point I started monitoring level 4,  
4 The operators that were controlling vessel level. I was  
5 using the -- I forget what range it is; I believe it's the  
6 shutdown range indication on panel 603 -- to inform them of  
7 what level was and what its trend was, at which point we had  
8 a rising level, but it was rising very, very slowly. They  
9 did have indication that they were injecting, but the level  
10 rise was very slow. We had some discussion at this point  
11 between the operators that a rising level was what we  
12 wanted; we didn't want to inject at to rapid a rate, because  
13 we didn't want to exceed the cool-down. Everybody was  
14 pretty much satisfied that we had a rising level, and we  
15 weren't concerned with how fast it was rising. That was  
16 conveyed to the SSS at that time -- that it was very, very  
17 slow.

18 During that time, also, the operator controlling  
19 reactor pressure utilizing the bypass valves, R. J.  
20 Reynolds, was given bands to control pressure, to help  
21 facilitate restoring level. It may be Rich Reynolds. Once  
22 level was restored, I was secured from panel 603

23 MR. KAUFFMAN: Okay. Were you then relieved off  
24 the shift, of did you continue to have further duties?

25 MR. BODOH: I checked with the CSO, and he asked



1 me to check an annunciator from the back panel, hydrogen-  
2 oxygen concentration, Division 2; a high annunciator had  
3 come in. I got the annunciator response and verified my  
4 indication on the recorder on panel 880, and I looked to see  
5 if we had received a computer point. Carrying out the  
6 annunciator response, there were not any actions for me to  
7 take, so I informed the CSO of what the indications were on  
8 the panel recorder, on 880, and then I also informed the  
9 SSS, at which point the SSS stated that he would have  
10 Chemistry contacted to draw a sample to verify our  
11 indication.

12           Once I completed that annunciator response, I  
13 checked with the CSO, and at that time he didn't need my  
14 service for anything else, so I basically just stepped back.  
15 After a short time, when I saw that he wasn't going to use  
16 me for anything further, I went and told him that I was  
17 going to go across the hall. We have a break area across  
18 the hall.

19           MR. KAUFFMAN: Okay.

20           MR. BODOH: Once there, I sat over there, and I  
21 basically just monitored the telephone.

22           MR. KAUFFMAN: So that was basically the end of  
23 your involvement.

24           MR. BODOH: Yes.

25           MR. VATTER: I think you probably said, but I





1 don't recall. Maybe you could just help me here for a  
2 minute. When the non-licensed operators and David Hanczyk  
3 were sent down to work on the UPS's, who was it that gave  
4 him that instruction?

5 [Pause.]

6 MR. BODOH: I don't now if they specifically got  
7 it from the SSS or if they got it from Mike Eron. Mike Eron  
8 was the assistant SSS.

9 MR. VATTER: But you think it was one of the two.

10 MR. BODOH: Yes.

11 MR. VATTER: Okay.

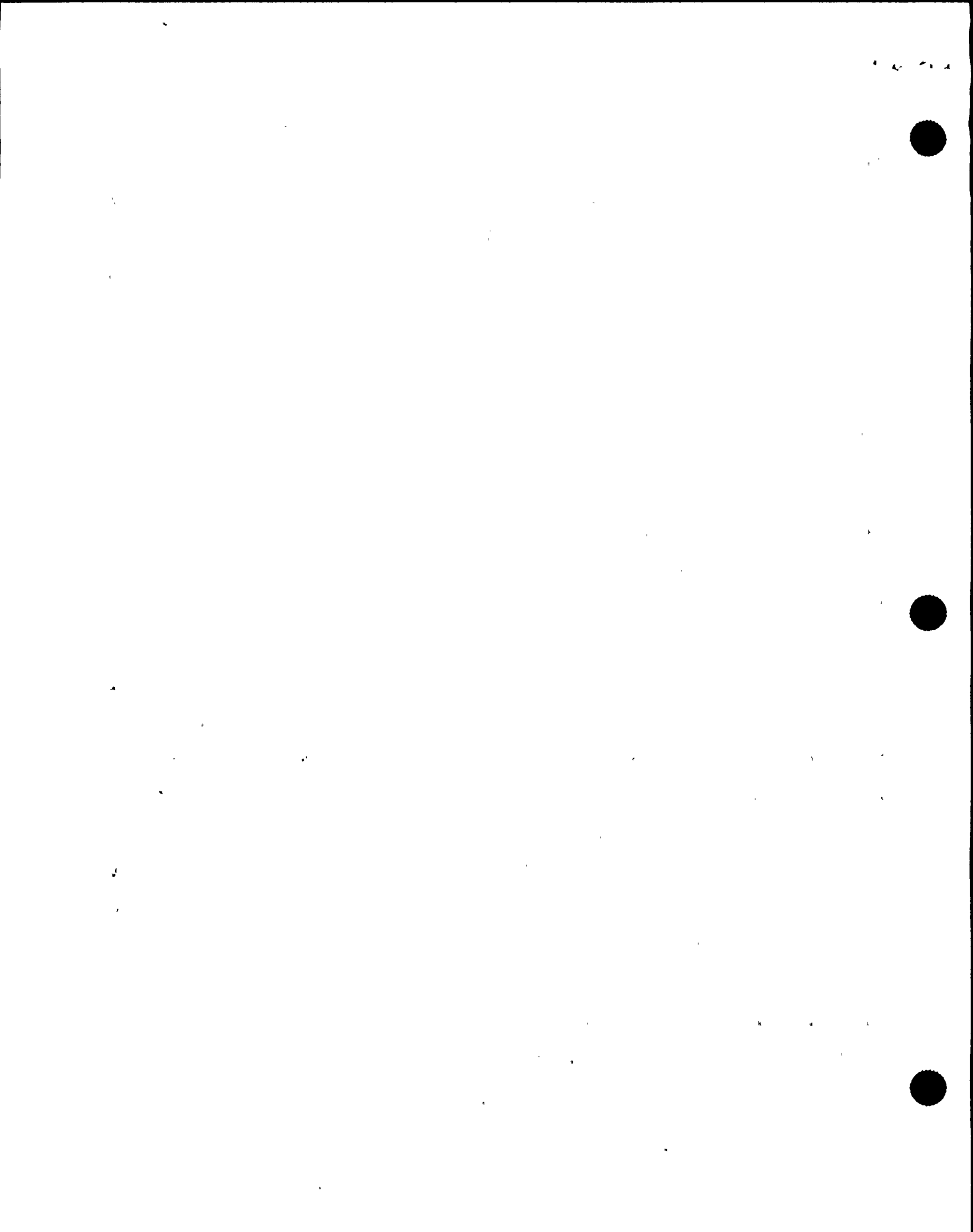
12 MR. KAUFFMAN: Do you have more specific  
13 questions?

14 MR. VATTER: No.

15 MR. KAUFFMAN: Of all the things that occurred in  
16 the response and allowed the response to go well, what do  
17 you think contributed to the things that went well -- be it  
18 procedures, training, knowledge of the people? Why do you  
19 think things went as smoothly as they appear to have gone?

20 MR. BODOH: I think training is a big part of it.  
21 We have been in training in the simulator where we'll have a  
22 loss of a UPS in a dynamic scenario and taken the actions to  
23 recover from that. I was also on shift with another crew  
24 when we lost UPS-1-Bravo.

25 MR. VATTER: When was that?



1 [No response.]

2 MR. VATTER: A long time ago? A year ago?

3 MR. BODOH: No, it wasn't that long. Back in the  
4 beginning of the year, I would say -- January, February is  
5 when I think it was.

6 MR. VATTER: What happened then?

7 MR. BODOH: We received all the lights on the  
8 full-core display.

9 MR. KAUFFMAN: "You received" them. You mean you  
10 lost --

11 MR. BODOH: We received all the lights. Every  
12 light on the full-core display lit up, including the blue  
13 scram pilot lights. The recirc hydraulics isolated, and we  
14 had a drifting of the Bravo recirc flow control valve.  
15 Power, level, and pressure, megawatts electric -- none of  
16 those parameters changed, even though we had the indication  
17 on the full-core display. That also happened right around  
18 the time frame of a shift turnover, and there was some  
19 discussions between the SSS's as to what indications they  
20 were looking at, whether or not the plant should be  
21 scrammed, or did we have enough indication to believe that  
22 the plant was in a stable condition? The result of that  
23 was that we did not scram; we investigated the problem with  
24 the UPS, and we recovered the recirc loop using procedures.  
25 We continually monitored power, level, pressure, to see that



1 those parameters were good indications of what the plant was  
2 doing.

3 MR. VATTER: Do you know the UPS was recovered at  
4 that time?

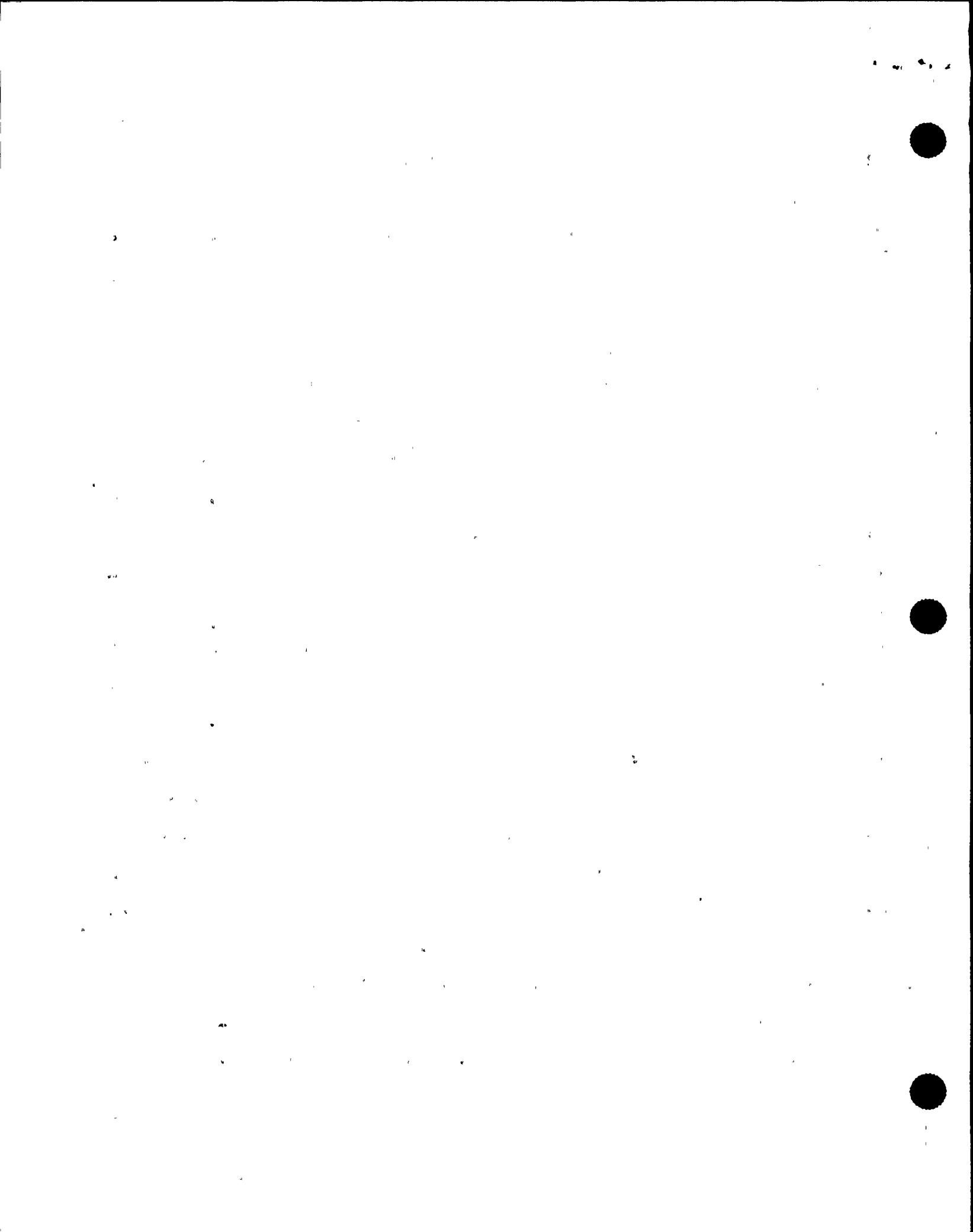
5 [Pause.]

6 MR. BODOH: I believe at that time there was a  
7 maintenance activity that was going on with the UPS, and,  
8 while performing the maintenance activity, that action was  
9 what caused the loss of the UPS. The operator involved and  
10 the maintenance person contacted the control room, and the  
11 control room directed them to return the UPS to normal.  
12 They returned it to normal. I can't give specifics how they  
13 did it or what they had done.

14 MR. VATTER: So it was the maintenance people that  
15 put it back in its normal configuration.

16 MR. BODOH: There was an operator there.

17 As a result of these things -- the training and  
18 the loss of the UPS in the plant -- I think the training was  
19 very valuable. I also think that the communications were  
20 very strong, and the leadership by the SSS was very, very  
21 strong. When I entered the control room and it was very,  
22 very quiet, Mike Conway came out, and he went to the EOP  
23 desk. He was very calm; he was very deliberated. He made  
24 sure that everyone was aware of where the plant stood at  
25 that time, and he gave direction as to where he wanted to



1 go, what he wanted the operators to do. He made those  
2 directions very specific and very deliberate.

3 I have been on three different shifts in the past  
4 seven months -- or roughly seven months -- and I think that  
5 all our SSS's, with the training that we have in EOPs, are  
6 above the standard for SSSs, as far as operating and  
7 directing through the EOPs.

8 MR. KAUFFMAN: "Are above the standard" -- are you  
9 referring to the industry average?

10 MR. BODOH: As far as seeing an average. An  
11 average person, an average SSS in the EOPs, I think their  
12 understanding and training is such that they have a very  
13 strong confidence in executing the EOPs. I think the  
14 reactor operators are very knowledgeable as far as when we  
15 enter contingencies for the EOPs, what actions they need to  
16 carry out. If for some reason direction is not given by the  
17 SSS, they would question it.

18 I guess the training and the communications and  
19 our supervisory personnel were strong points through the  
20 whole incident.

21 MR. KAUFFMAN: If I turned that question around  
22 and said are there any areas that didn't go smoothly, like  
23 perhaps getting condensate booster pumps back, were there  
24 any areas that you felt procedures got in the way or you  
25 didn't know enough about an area or any areas that you think





1 that something could be done so that the response could be  
2 made even better in the future?

3 MR. BODOH: I think our training of  
4 uninterruptable power supplies should be an ongoing  
5 training. Bob Crandall, who normally handles the UPS's, is  
6 very good about having the operators go down when any type  
7 of maintenance is being done and talking through the UPS's,  
8 their operation, their functions.

9 I know that the reactor operators have had  
10 training on the UPS's in the plant but it is not something  
11 that occurs on a day to day basis. I think that the  
12 majority of operators are probably a little uncomfortable,  
13 especially in this situation, where I guess no one really  
14 expected to lose all the UPS's and be in that type of a  
15 situation.

16 I think at that point that was not -- after going  
17 through everything, the procedures -- the procedures won't  
18 cover everything that these were very unique situations.

19 MR. KAUFFMAN: Sure, but the procedures were by  
20 and large pretty good and didn't give you any big  
21 insurmountable type of problems?

22 MR. BODOH: No.

23 I think something else that hampered handling the  
24 incident was the loss of communications. In our evaluation,  
25 our self-assessment the following day I found out, I'm sure



1 with a lot of other people, that the Gaitronics is supplied  
2 off of two separate UPS's and the floating wire or the  
3 portable radios is off a third and it was never considered  
4 that we would lose all three of those at one time so  
5 communications really hampered things because when person  
6 was sent out to perform an action there was delay in the  
7 time they took the action and got back to the control room  
8 to relay any information that might have been pertinent to  
9 where we were.

10 I don't know why some of the egress emergency  
11 lighting was not illuminated in stairwells.

12 There was no problem in the plant and the only  
13 stairwell that I know of was the stairwell on the south side  
14 of the control building going from Elevation 306 to 288.

15 Even with those things, I still had every  
16 confidence that we would be able to put the plant in a safe  
17 condition.

18 MR. KAUFFMAN: Okay. The last comment we normally  
19 do is give you a chance to make -- we've asked the questions  
20 all along.

21 Now it is your opportunity to make any comment for  
22 the record or bring up anything you care to say.

23 MR. BODOH: I don't know. I guess this all makes  
24 me a little nervous.

25 MR. KAUFFMAN: I understand. First time for



1 everything

2 MR. BODOH: I guess I don't understand all the  
3 proceedings. I realize what they are for. It just hasn't  
4 all sunk in yet, I guess. I look forward to seeing the end  
5 result.

6 MR. KAUFFMAN: Okay. That concludes the  
7 interview.

8 [Whereupon, at 11:24 a.m., the taking of the  
9 interview was concluded.]

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REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission

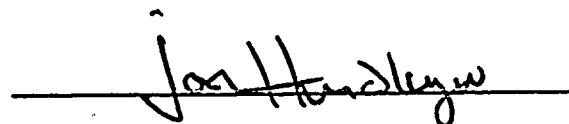
in the matter of:

NAME OF PROCEEDING: Int. of MARK BODOH

DOCKET NUMBER:

PLACE OF PROCEEDING: Scriba, N.Y.

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.



JON HUNDLEY  
Official Reporter  
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