

# OFFICIAL TRANSCRIPT OF PROCEEDINGS

Agency: Nuclear Regulatory Commission  
 Incident Investigation Team

Title: Nine Mile Point Nuclear Power Plant  
 Interview of: JAMES EMERY

Docket No.

LOCATION: Scriba, New York

DATE: Tuesday, August 20, 1991

PAGES: 1 - 28

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ADDENDUM TO INTERVIEW OF James Emery NAOE  
(Name/Position)

| <u>Page</u> | <u>Line</u> | <u>Correction and Reason for Correction</u> |
|-------------|-------------|---|
| 6           | 10          | "our" should read "hour"                    |
| 18          | 7           | "loosing" should be "losing"                |
| 12          | 7           | "connector" should be "connected"           |
| 16          | 10          | "Type" should be "types"                    |
| 16          | 11          | "group" should be "root"                    |
| 18          | 7           | My response was "No significant damage"     |
| 19          | 7           | "you're" should be "your"                   |
| 26          | 9           | "USS" should be "US"                        |
| 26          | 10          | "VSM" should be ACC                         |
| 26          | 11          | "USS" should be US                          |

Page \_\_\_ of \_\_\_ Signature James F. Emery Date 8/23/91

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
INCIDENT INVESTIGATION TEAM

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Interview of :  
JAMES EMERY :  
(Closed) :  
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Conference Room B  
Administration Building  
Nine Mile Point Nuclear  
Power Plant, Unit Two  
Lake Road  
Scriba, New York 13093  
Tuesday, August 20, 1991

The interview commenced, pursuant to notice,  
at 3:55 p.m.

PRESENT FOR THE IIT:  
Mike Jordan, NRC  
Rich Conte, NRC

2.7

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

[3:55 p.m.]

1  
2  
3 MR. JORDAN: It's August the 20th, 1991, at 3:55  
4 p.m. We're at Nine Mile Point, Unit Two, the P Building.  
5 We're here to cover an event of a transient that occurred on  
6 August the 13th, 1991. My name is Michael Jordan. I'm with  
7 the NRC out of Region III.

8 MR. CONTE: I'm Rich Conte, Region I.

9 MR. EMERY: James Emery, reactor operator, Unit  
10 Two.

11 MR. JORDAN: Okay. You go by Jim or James?

12 MR. EMERY: Jim.

13 MR. JORDAN: Okay. Jim. Why don't you just tell  
14 us what your background is and experience that you have.

15 MR. EMERY: My background is that I obtained my  
16 reactor operator's license approximately three, three and a  
17 half years ago; February of 1988. And prior to that I was  
18 an auxiliary operator from approximately 1980 -- April of  
19 1984 until that date in 1988. Prior to that I was a  
20 security guard at Unit One from 1981 to about 1984.

21 I'm not sure how far back you want me to go.

22 MR. CONTE: Any prior nuclear experience before  
23 joining Niagara Mohawk?

24 MR. EMERY: No. No. I obtained -- I went to -- I  
25 obtained a bachelor of arts degree from Hobart College in





1 1975 and worked in a -- it's called the title insurance  
2 abstract business.

3 MR. JORDAN: Okay, Jim, why don't you, in your  
4 words give us an idea of what you saw as far as the event  
5 that happened on August 13th?

6 MR. CONTE: Were you coming in, in the morning?

7 MR. EMERY: I was coming in. In fact I --

8 MR. CONTE: Take us from there.

9 MR. EMERY: I arrived, I would guess, probably  
10 within five minutes of the initial event.

11 MR. CONTE: The initial even was 05:48.

12 MR. EMERY: Right.

13 MR. CONTE: So you're saying about --

14 MR. EMERY: Approximately five to six or so.

15 MR. CONTE: Five to six?.

16 MR. EMERY: Right. I made -- as I was coming into  
17 the plant a security guard had told me that the reactor had  
18 just scrambled and I kind of looked up at the cooling tower  
19 and noticed that there was still evaporation. I thought he  
20 was just kidding me. He said, "No, I'm not kidding you."  
21 And I went into the entrance to the control building and  
22 took the northeast stairs up and as soon as I got into that  
23 northeast stair tower I realized that, no, he wasn't  
24 kidding me because it was pitch black in the stair tower.  
25 And I climbed my way up to the control room and entered the



1 --

2 MR. CONTE: What elevation is the control room?

3 MR. EMERY: 306.

4 MR. JORDAN: And the ground floor is?

5 MR. EMERY: 261.

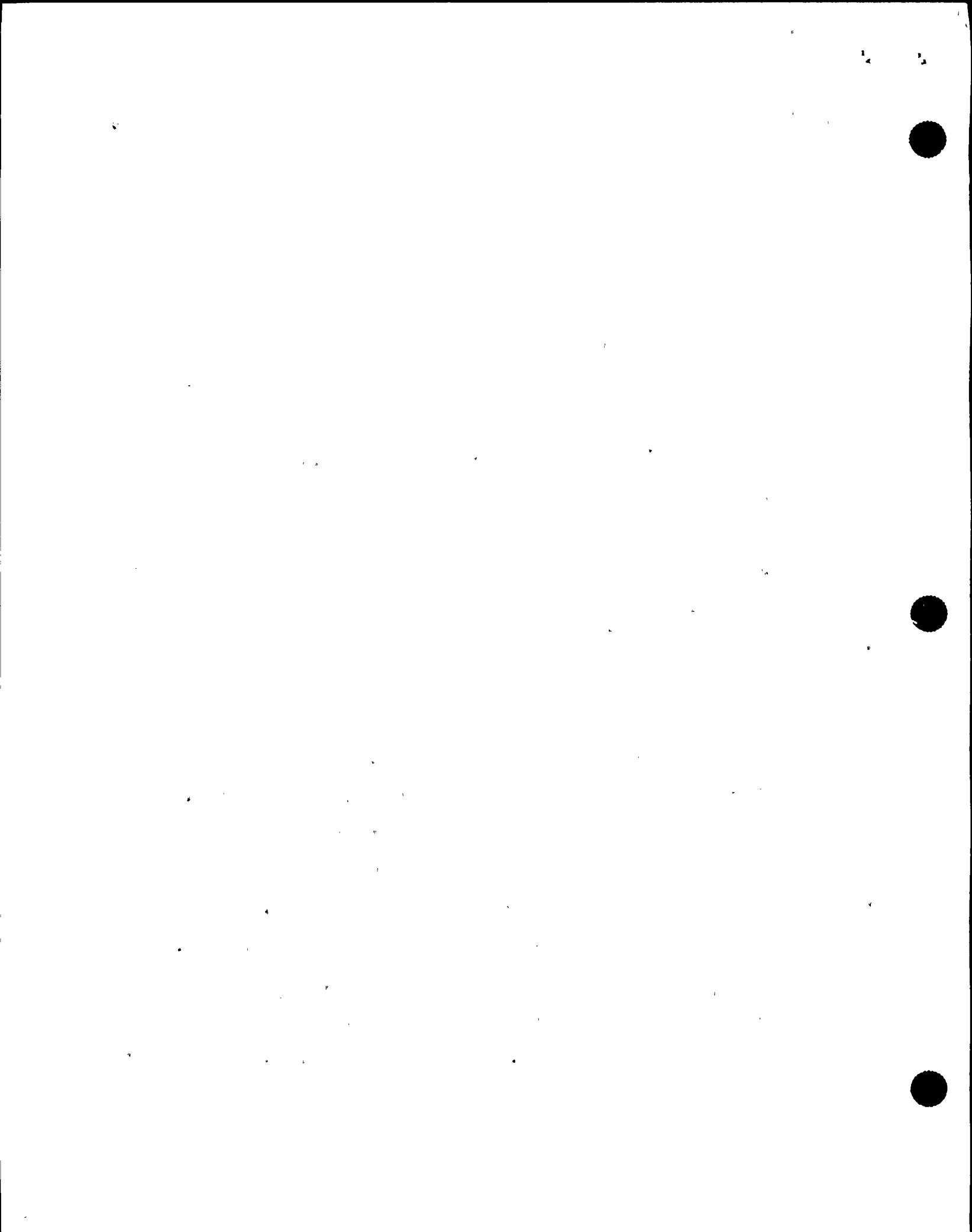
6 MR. JORDAN: Thanks.

7 MR. EMERY: And then I entered the control room of  
8 which there were -- that was lit and then I went up to the -  
9 - at the controls area and at that time the SSS was at the  
10 EOP area and the CSO was operating what we call RCIC system.

11 I remember not seeing any type of -- that I can  
12 remember -- any type of annunciators flashing at that point.  
13 And I did glance over at the full core display and I don't  
14 remember seeing much information on there. But I was kind  
15 of at the RCIC area, so that's probably 20-25 feet away.

16 MR. CONTE: CSO from the midshift was on RCIC?

17 MR. EMERY: That's correct. Mark Davis. And as I  
18 recall I offered to relieve him because our policy is that  
19 the CSO would step back and try and maintain a -- what we  
20 call a big picture and act as the foremen, so to speak, to  
21 delegate work as necessary. So I then took the controls of  
22 RCIC which were at that time in manual. He had warned me  
23 that it didn't seem to respond correctly; in automatic it  
24 was fluctuating, so he took it to manual and parameters  
25 stabilized and when I took over it was in manual. And at



1 that time I believe he pointed out to me that he thought we  
2 had a misindication light for one of the testable check  
3 valves associated with RCIC, in that it was not showing  
4 open, yet we were showing a full 600 gallons per minute flow  
5 which is full flow for that system.

6 MR. CONTE: Do you have the number designator on  
7 that testable check valve? Is there only one in the system?

8 MR. EMERY: No. There are two and I can't  
9 remember -- I believe it was the in-board one which is AOV-  
10 157.

11 MR. CONTE: AOV?

12 MR. EMERY: Yes.

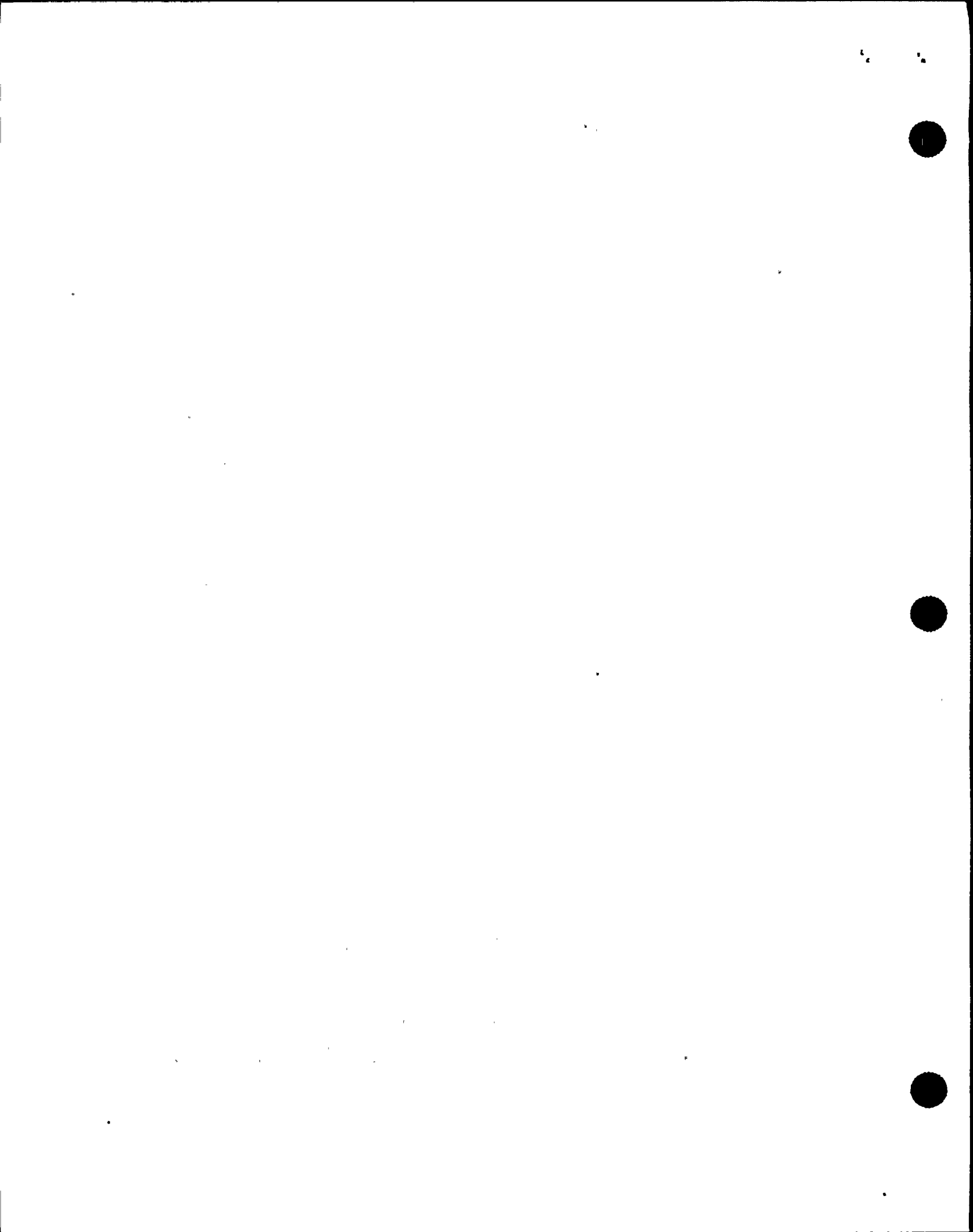
13 MR. CONTE: 157?

14 MR. EMERY: Correct. ICS, AOV-157.

15 MR. CONTE: Okay

16 MR. EMERY: I wasn't at that station very long and  
17 then I was relieved and given the -- I kind of stepped back  
18 for a few moments and the SSS was still trying to apprise  
19 the situation; getting parameters such as level and  
20 pressure.

21 My next assignment was to -- we were starting to  
22 depressurize and the SSS did not want that to continue so he  
23 asked me to take actions as part of our shutdown procedure  
24 for controlling our depressurization and the only actions  
25 that I got to was that I did end up shutting some main steam



1 line drain valves which were MSS, AOV's, 87 Alpha through  
2 Delta.

3 MR. CONTE: Did he say why he didn't want to  
4 depressurize?

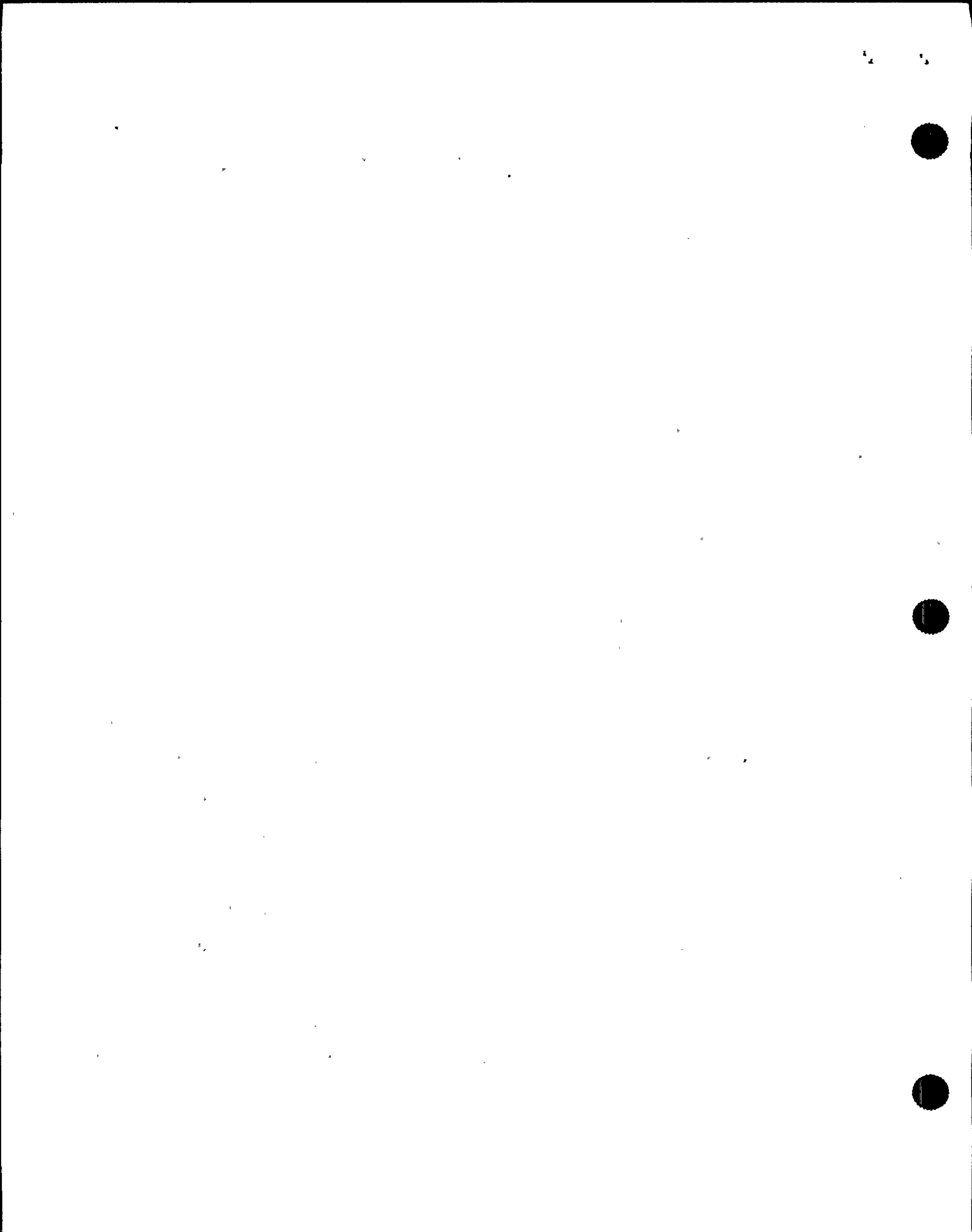
5 MR. EMERY: Well, I don't remember if he -- if he  
6 did say because of our full core display problem and our  
7 verification whether all rods were in and so on and so  
8 forth. If it was for that reason or the reason that we  
9 are, as a guideline, given not to cooldown greater than 100  
10 degrees an our and I believe pressure had gone down to 600  
11 pounds or so.

12 So, to answer that question, I can't remember if  
13 he did give us a specific reason.

14 MR. CONTE: Continue.

15 MR. EMERY: After I shut those AOV's for the  
16 pressure control I happened to go over to our 851 panel and  
17 noticed that our cooling tower basin level was higher than  
18 normal and I -- I ended up reestablishing what we call  
19 blowdown flow to try and lower that. Then I was told to  
20 place one of the RHS loops into suppression pool cooling.  
21 It was the Alpha loop, and I did that. Then I started  
22 working with another operator as far as they wanted to  
23 secure off gas in the steamjet air rejecters and start our  
24 air removal pumps. I worked on that.

25 MR. JORDAN: Is power still out at this time?





1 MR. EMERY: No. We had -- the UPS's had been  
2 restored.

3 MR. JORDAN: How about the suppression pool  
4 cooling? Did you do that before or after the power?

5 MR. EMERY: That I'm not sure about. I can't  
6 remember.

7 MR. CONTE: By the way, that 851 panel, is that by  
8 any chance called the KERK panel -- CIRC panel?

9 MR. EMERY: CIRC panel.

10 MR. CONTE: It would be C-I-R-C?

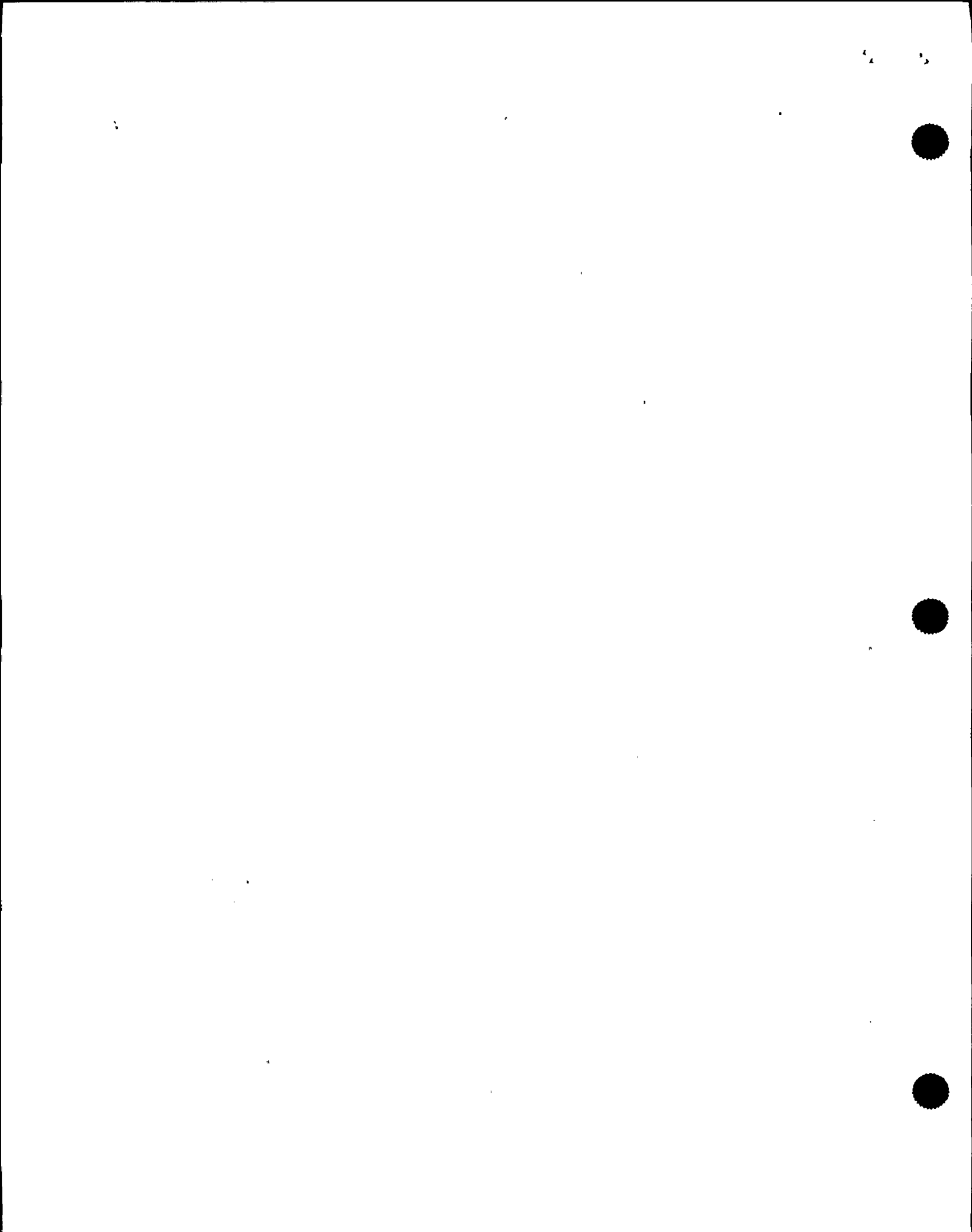
11 MR. EMERY: Right. It could be called that.  
12 That's one of the -- the circ water system is one of the  
13 systems on that panel as well as EHC.

14 MR. CONTE: Okay.

15 MR. JORDAN: You put the A in suppression point  
16 cooling. What else did we do?

17 MR. EMERY: Let's see. From there I went to --  
18 they were concerned about loosing our sealing steam. The  
19 equipment that provides it -- the sealing steam, at the time  
20 was getting main steam and they wanted that to be swapped  
21 over to an auxiliary system which is our auxiliary boiler  
22 system so that steam seals could be continued to be  
23 provided. And that was another task that I was assigned,  
24 was swapping over to the aux boiler steam.

25 MR. CONTE: I heard there was a problem with one



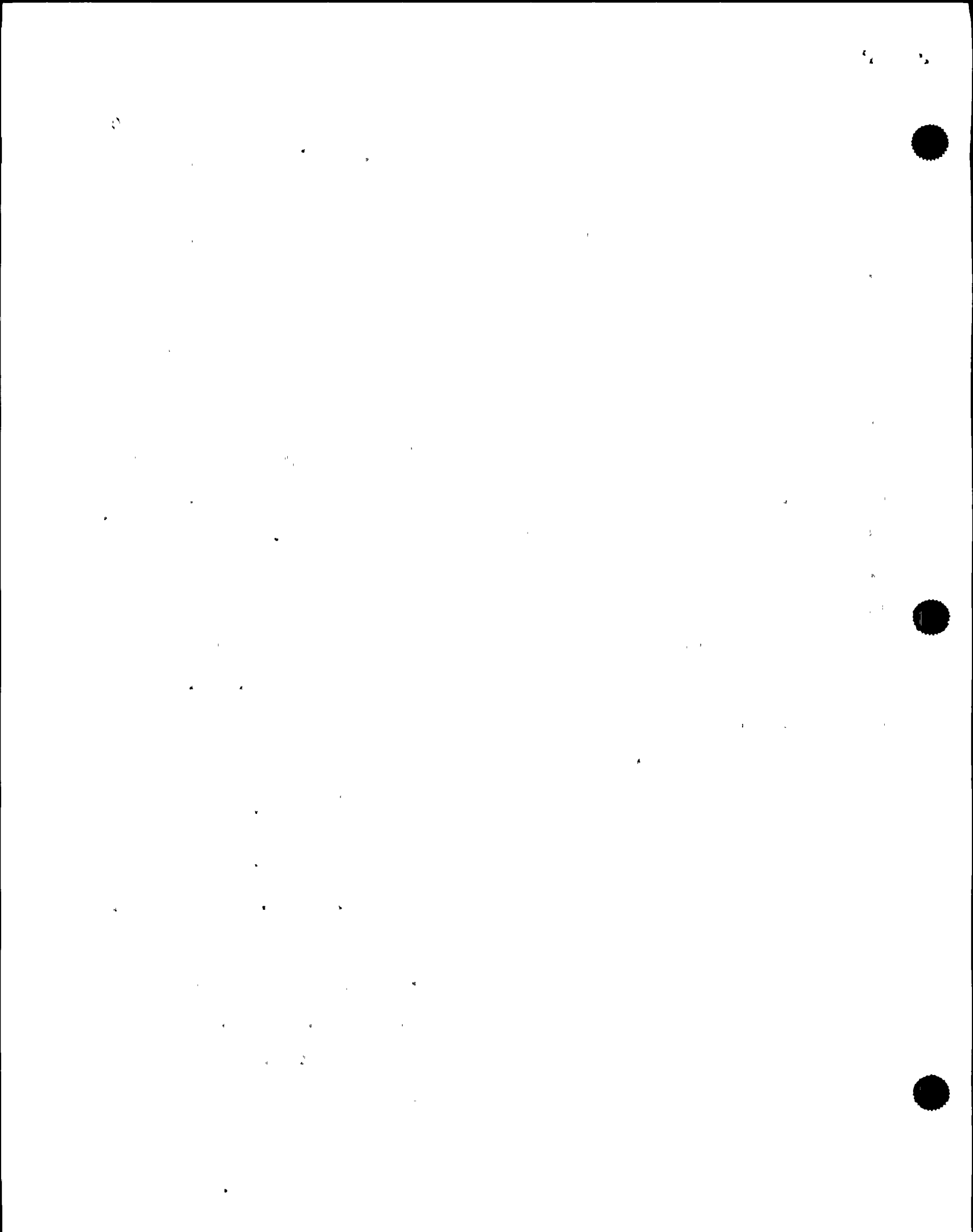
1 of the auxiliary steam valves; are you aware of that? Did  
2 you experience that problem?

3 MR. EMERY: Yes. Well, the one particular valve  
4 we were working with was ASS-AOV-145. It's been a problem  
5 that has occurred in the past. These valves require higher  
6 pressure than what our normal instrument air system can  
7 provide, so what the fix has been is to provide these little  
8 air booster skids for these valves. Unfortunately, the  
9 little air booster skids haven't operated as effectively as  
10 they should, so we did have a problem with that in that  
11 the operator got out to the valve, that's AOV-145, we  
12 attempted to open it, the valve did not open. He then went  
13 over to its air booster skid and noticed that the pressure  
14 was lower than required for opening it and that the pump  
15 associated with this air booster skid was not operating and  
16 he then took steps to try and realign air to it to get it  
17 pumping. He succeeded and we got the --

18 MR. CONTE: Would you know why the pump was not  
19 running? Do you suspect it was because of the power outage,  
20 or you just don't know?

21 MR. EMERY: No. No, I don't think it had anything  
22 to do with the power outage.

23 MR. CONTE: In other words in the past -- you said  
24 that this was a problem in the past, so in the past these  
25 pumps have not operated or tripped or something?



1 MR. EMERY: Correct. And it's -- I believe  
2 correct paperwork has been forwarded to engineering advising  
3 them that we do have a problem, that they need to come up  
4 with something.

5 MR. CONTE: Before this event or after?

6 MR. EMERY: Before. Because almost every outage  
7 we entail the same problems with these booster skids as far  
8 as their operations.

9 MR. CONTE: So how did the -- oh, so the -- he  
10 started the pump in order to get the booster skid running  
11 again, and then he was able to successfully open?

12 MR. EMERY: Right.

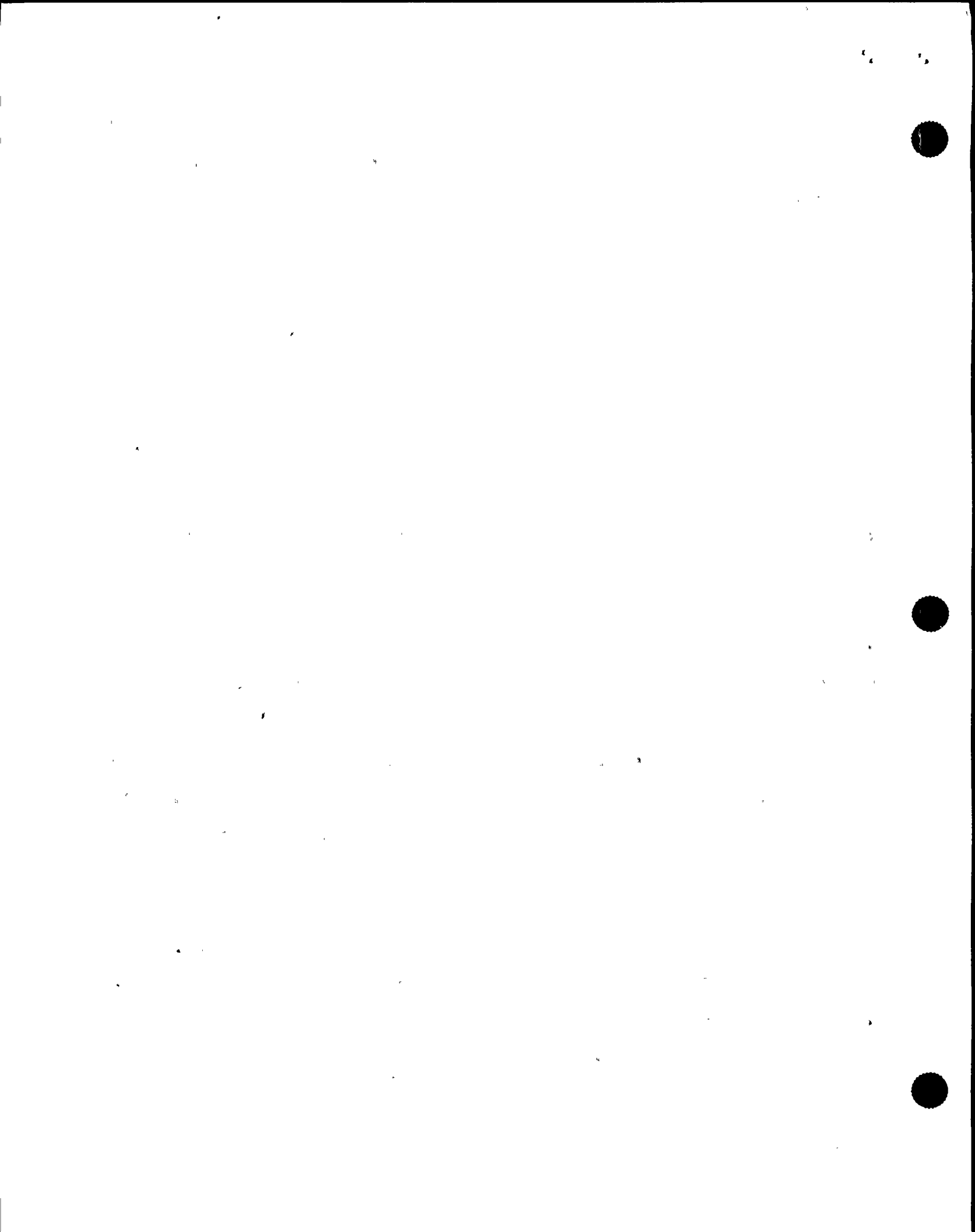
13 MR. CONTE: Is that correct?

14 MR. EMERY: Right. He was able to start up a pump  
15 on the air booster skid which then provided enough pressure  
16 to open up the AOV-145.

17 MR. CONTE: How much -- what effect does that --  
18 the fact that you go to open up a switch, AOV-145, didn't  
19 open, is it a matter of delay of minutes? Was it crucial to  
20 get this valve opened fast or --

21 MR. EMERY: Not in this. We had time.

22 MR. CONTE: Can you think of anything during the  
23 day's events that there was something urgent, there was some  
24 valve that needed to be opened urgently and if air booster  
25 skids malfunction interfered with that? Do you have



1 personal knowledge of that or did you hear about it from  
2 other people?

3 [Pause.]

4 MR. EMERY: At this point I can't -- I can't  
5 remember any other air booster skid valve causing us any  
6 problem. This was the one that I was working directly with,  
7 so I --

8 MR. CONTE: Okay. All right, so it sounds like  
9 you were successful in getting sealing steam --

10 MR. JORDAN: If you weren't -- to seal steam --  
11 you're transferring aux boiler to get the aux boiler steam  
12 in the primary steam?

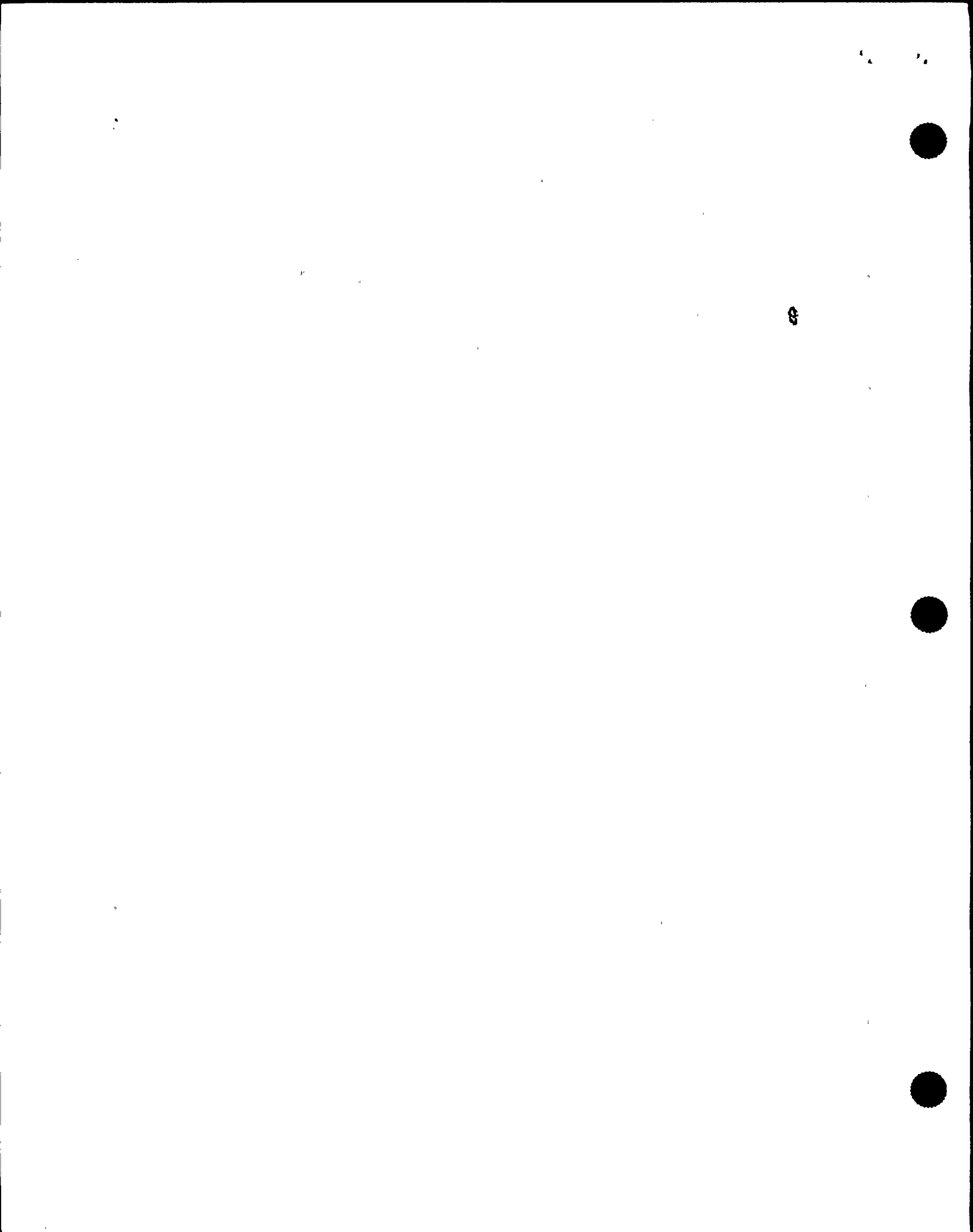
13 MR. EMERY: Right.

14 MR. JORDAN: If you weren't successful in doing  
15 that, what would have been the consequences of it?

16 MR. EMERY: To be truthful, I don't know what they  
17 would have -- what the next course of action -- we've never  
18 had -- had the problem occur. Whether they would have had  
19 to -- we had the generator filled with hydrogen. I'm  
20 suspecting the next move would have been, well, we can't  
21 keep that sealed in there with it because we have no sealing  
22 steam, they might have had to open the -- what we call the  
23 dump valve -- or sort of the generator and --

24 MR. JORDAN: Okay.

25 MR. EMERY: -- evacuate the generator of hydrogen.





1 And then --

2 MR. CONTE: Did you get into all those nukes?

3 MR. JORDAN: Yes. Go ahead.

4 MR. CONTE: How did you get involved --

5 MR. EMERY: The next thing that I was involved  
6 with was an attempt to place our clean up system into full  
7 reject mode.

8 MR. CONTE: Reactor water cleanup in what mode?

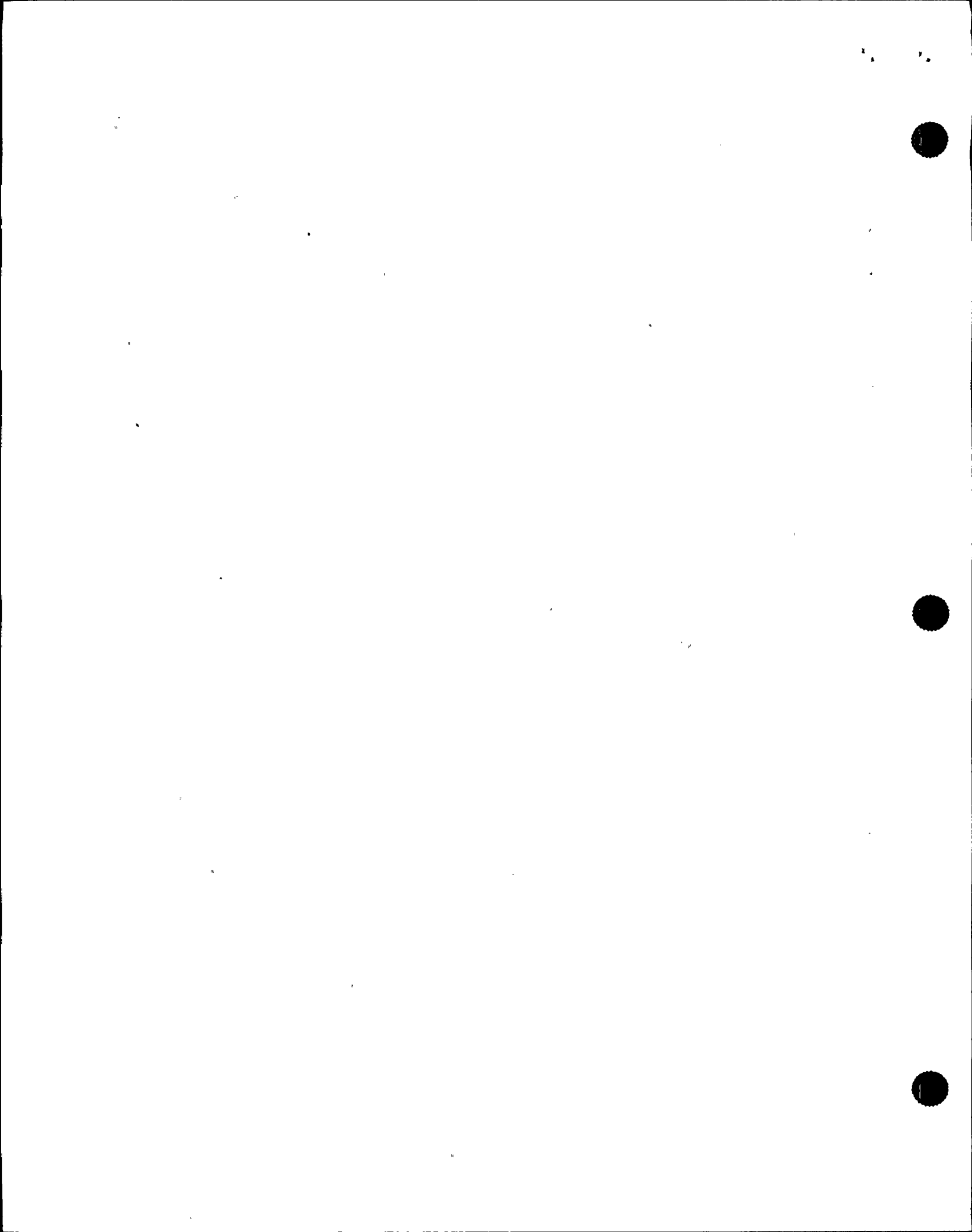
9 MR. EMERY: Full reject.

10 MR. CONTE: Full reject in distinction to what  
11 other modes?

12 MR. EMERY: It returns to -- normally it returns  
13 back to the vessel -- full reject is where you direct it to  
14 either the condenser or to RAD waste. Their concern is  
15 stratification of feedwater piping. In the conditions we  
16 were in.

17 MR. CONTE: What was your order in this full  
18 reject to where, to the condensate or the RAD waste system?  
19 Where did the SS direct you to?

20 MR. EMERY: To be honest, I can't remember if he  
21 directed me either way. I think I just assumed he wanted to  
22 go back to the condenser because RAD waste has a temperature  
23 limit on their tanks and at that time the reactor water was  
24 still 300 - 400 degrees and their temperature limit, I  
25 believe, is around 180 degrees.



1 MR. CONTE: Can you do a light up from the  
2 control room or reactor water clean up?

3 MR. EMERY: In the situation we were in, while  
4 either situation; no, we -- at the minimum we have to send  
5 operators up to the remote -- I shouldn't say remote -- the  
6 panel up on -- out in the reactor building to monitor the  
7 filters demins connector with this system.

8 MR. CONTE: How were you involved in this? You  
9 were the licensed operator in charge of the --

10 MR. EMERY: Right. I suggested -- or I asked the  
11 SSS if this is -- if he wanted to align the system for the  
12 full reject mode because there is -- in our operating  
13 procedure for clean up, it says that any time we're less  
14 than 20 percent power, and over 200 degrees temperature, I  
15 think that's the parameters, that we should be in this type  
16 of line up and he said -- saw no reason why not to be in it,  
17 proceed.

18 MR. CONTE: Operators who went out to the reactor,  
19 were they using procedures?

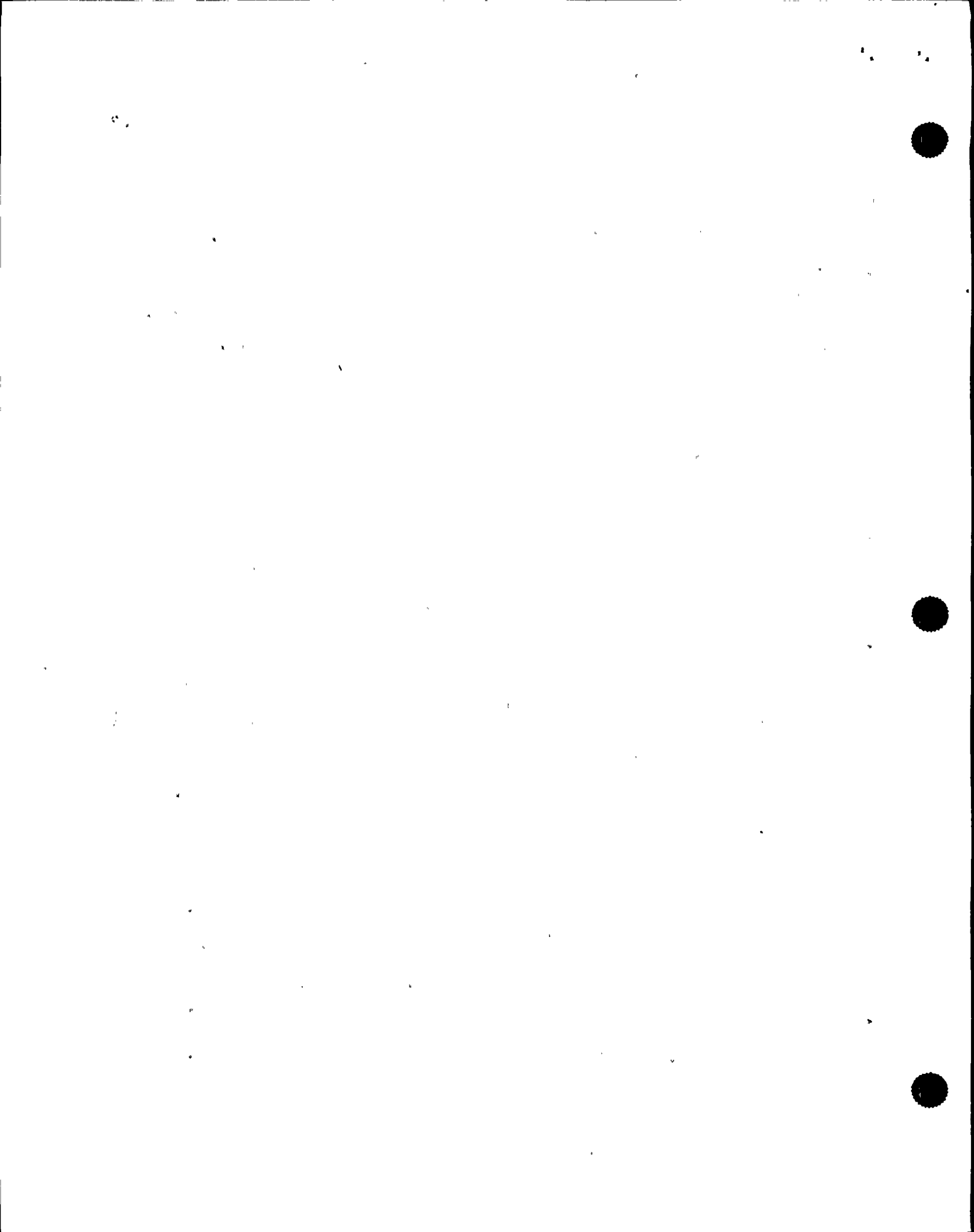
20 MR. EMERY: Yes.

21 MR. CONTE: Were you using the procedures?

22 MR. EMERY: Yes.

23 MR. JORDAN: What was the procedure you were  
24 using?

25 MR. EMERY: N2-OP-37.



1 MR. CONTE: Okay.

2 MR. EMERY: That event did not go as anticipated  
3 and ended up taking a system isolation due to what we call  
4 our Delta flow timers. And after that occurred, the SSS --  
5 and when I say SSS, the original SSS was Mike Conway. The  
6 SSS at the time of the isolation was George Moyer. George  
7 Moyer came over and said just leave the system as is, and  
8 we'll -- we'll deal with it later on after it's cooled down  
9 more. At the time we were using -- it was about 360 degree  
10 water or so.

11 MR. CONTE: It was 360 degree water?

12 MR. EMERY: Right.

13 MR. CONTE: Do you understand why that isolation  
14 occurred?

15 MR. EMERY: Yes. The way the procedure was  
16 written and we are, at this time taking steps to amend the  
17 procedure, the procedure that --the part of it that I was  
18 using was actually for --well, I shouldn't say was actually  
19 for -- it was -- the way I interpreted it, it was for the  
20 conditions we were in, but from other inputs I've heard that  
21 no, we use this when we're starting up and directing it to -  
22 - before -- in other words, before we get to say, 200 degree  
23 temperature, we align ourselves into full reject.

24 Whereas, where I was, or where the conditions we  
25 had at the time, we had 360 degree water or so and --



1 [Pause.]

2 MR. CONTE: When we go OP-37, will it be obvious  
3 that we know what section you were in, the start up portion  
4 of it? Do you remember the section of OP-37 that you were  
5 using?

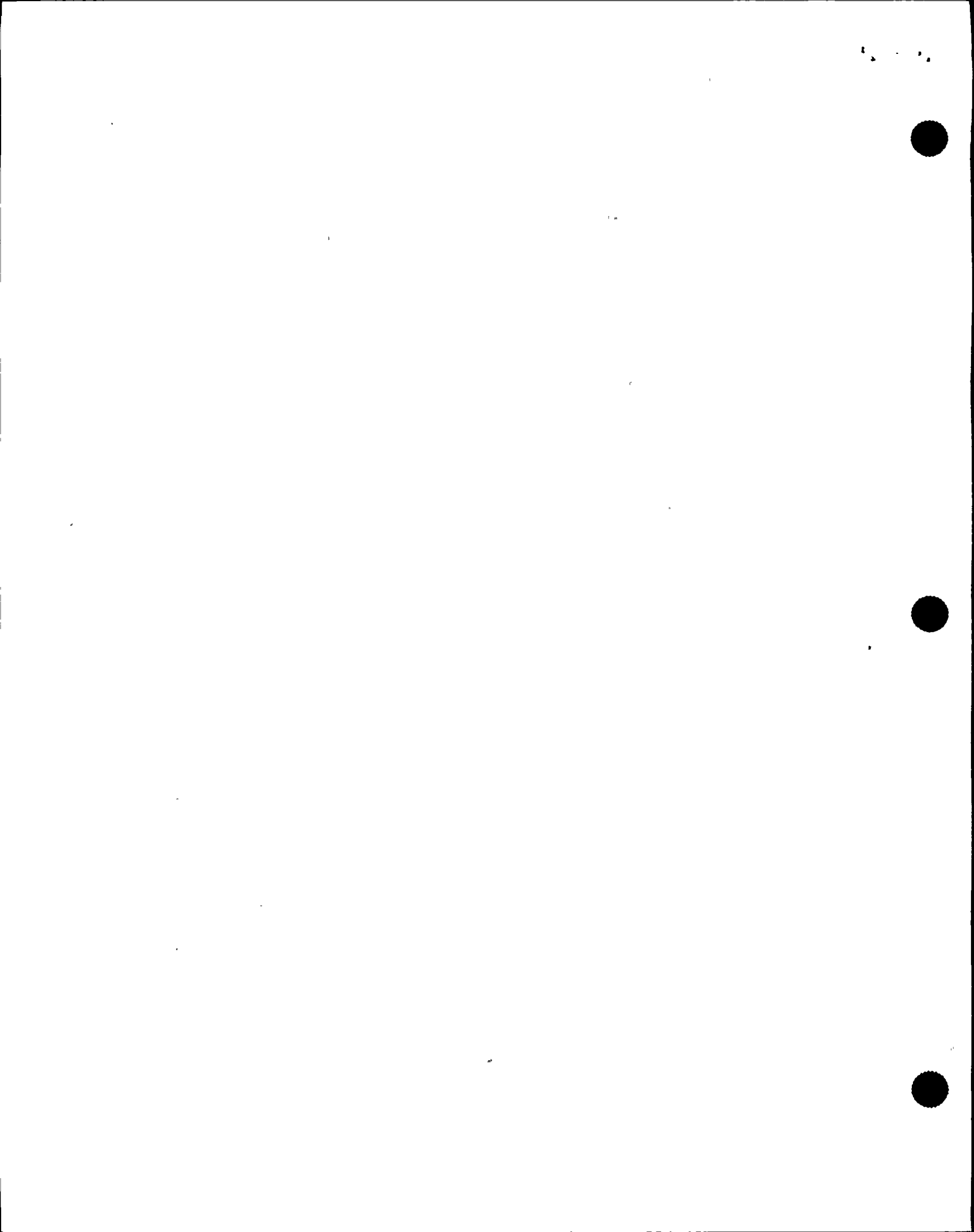
6 MR. EMERY: Well, I think I started off in section  
7 -- there is a section -- I believe it's under H -- the off-  
8 normal section which is where I started off and that was  
9 written -- that was written for having a pump operating and  
10 your filters on-line. In the condition we were in the  
11 operating pump had been tripped by an operator as part of an  
12 immediate scram action. And the filters were -- the status  
13 of those were -- they have little holding pumps connected  
14 with them and they were running, but they had isolated so  
15 there was no actual flow going through them.

16 MR. CONTE: So the procedure did not reflect  
17 actual plant conditions to be used?

18 MR. EMERY: Correct. Well, when I say correct,  
19 the -- one of our immediate scram actions is to either trip  
20 the pump or go into full reject and --

21 MR. CONTE: Do you know why that is?

22 MR. EMERY: We've had problems with our cleanup  
23 system; pump seals have been continuously ruined just  
24 because of the perturbations on the system and part of them  
25 again because of this feedwater stratification worry, so





1 they give you the option whether to shut the pump down or go  
2 on to this full reject.

3 MR. JORDAN: Did it actually trip the pump? Do  
4 they have to close an isolating valve?

5 MR. EMERY: No. They turn the pump off.

6 MR. JORDAN: Okay. And there's no procedure,  
7 scram recovery type procedure that says when the pump is  
8 turned off how to start the system back up?

9 MR. EMERY: No. Well, there is, and that's what I  
10 thought I was under because I knew we could go into this  
11 full reject mode in the condition -- as a post-scram  
12 recovery action.

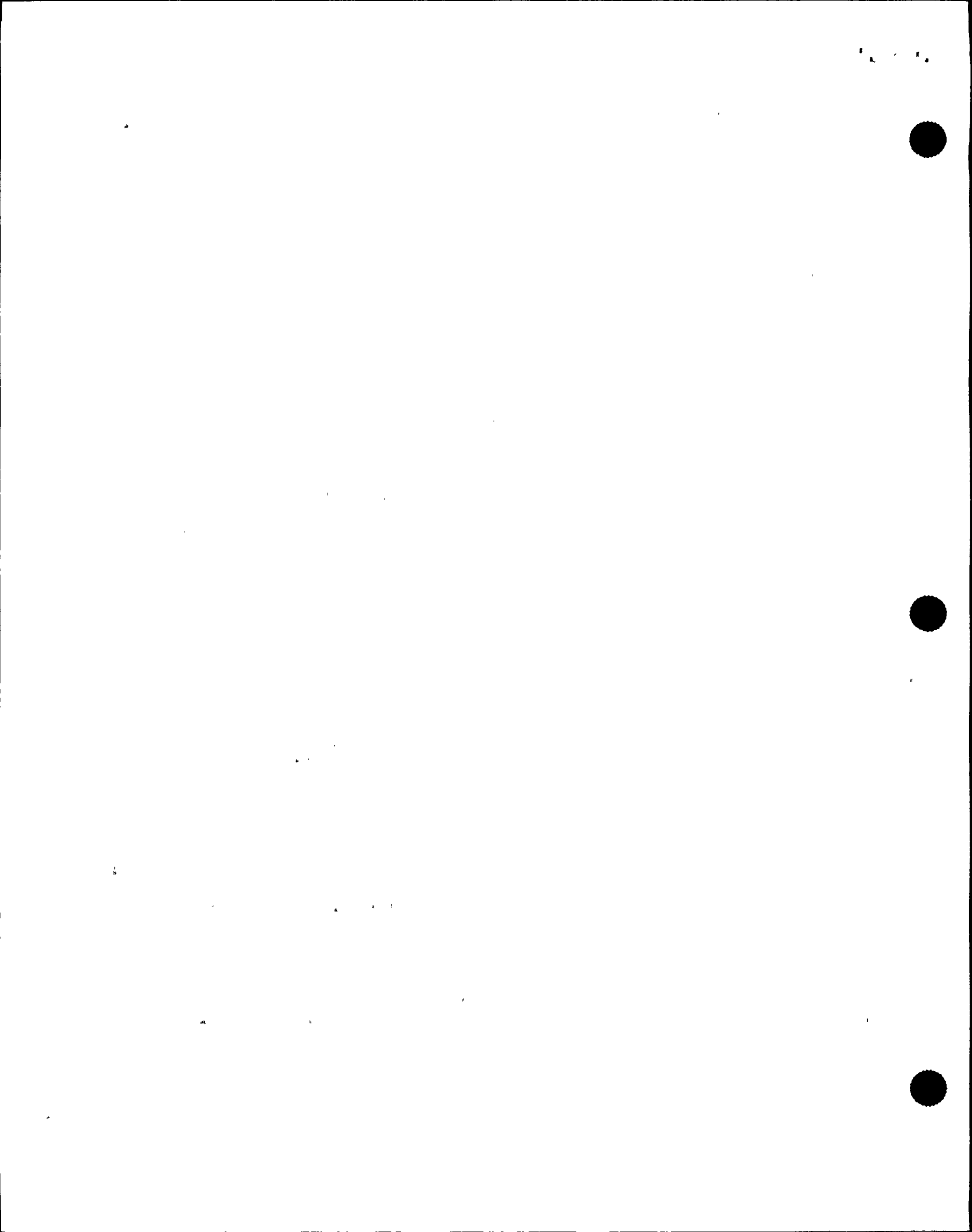
13 MR. JORDAN: Okay.

14 MR. EMERY: And that was Section E.4 of the  
15 procedure.

16 MR. JORDAN: E.4 was where you were?

17 MR. EMERY: Right. It talks about starting up the  
18 system -- up with a full reject and if the pump is hot,  
19 meaning within 100 degrees of coolant temperature.

20 MR. CONTE: What in the procedure misguides you?  
21 I mean, what in the procedure causes that Delta flow?  
22 You're saying that the procedure needs to be revised.  
23 There's a way of getting around it such that it will work on  
24 a post-scram recovery, right? Do you know how to do that at  
25 this point, or is engineering looking at that?



1 MR. EMERY: No. At this point I believe people  
2 are looking at it.

3 The inputs that I've had from people -- now, let  
4 me say this too, I had never done it under the conditions we  
5 were under. So I didn't have experience to go on. People  
6 that had had experience said that they -- we've had problems  
7 in the past doing it in this mode. But I didn't know that  
8 at the time.

9 And we're still -- we have an -- I don't want to  
10 say investigation, but whenever we have one of these type of  
11 incidents we do a group cause analysis and so on and so  
12 forth and that's still going on.

13 MR. CONTE: What were you involved in next after  
14 reactor water cleanup? You were told to abandon that  
15 evolution?

16 MR. EMERY: Right. As far as I remember the last  
17 thing that I did was -- they were trying to get shutdown  
18 cooling on and that was on the B, Bravo loop and they had a,  
19 what we call post-maintenance test that they wanted to  
20 perform on one of the shutdown cooling valves on the Alpha  
21 loop. It involved opening two RHS-MOV-40 Alpha -- timing it  
22 open and I believe timing it shut.

23 MR. CONTE: MOV-40 Alpha?

24 MR. EMERY: That's correct. And I performed that.

25 MR. CONTE: Were you successful?



1 MR. EMERY: Yes.

2 MR. CONTE: Then what?

3 MR. EMERY: That's all I have. That was the last  
4 noteworthy item I was involved with as far as I can  
5 remember.

6 MR. CONTE: There were two reports of water hammer  
7 in the reactor water cleanup and RHR to the RAD waste  
8 system. Do you know anything about that? Did you ever hear  
9 that report?

10 MR. EMERY: I was intimately involved with the  
11 reactor water cleanup on that.

12 MR. CONTE: Where? Okay, could you explain?

13 MR. EMERY: That occurred while I was trying to  
14 align it into this full reject mode.

15 MR. CONTE: Are you convinced -- did you hear it?  
16 Were you at the local station?

17 MR. EMERY: I was at the time -- I was at the 602  
18 panel in the main control room. I had a team of operators  
19 at the cleanup pump room in the RHR heat -- or, excuse me,  
20 reactor water cleanup heat exchanger room and the reactor  
21 water cleanup panel. So I had three sets of teams out in  
22 the reactor building. And the report of water hammer came  
23 from the team that was at the reactor water cleanup heat  
24 exchanger room and the reactor water cleanup panel.

25 MR. CONTE: Were they convinced it was water



1 hammer?

2 MR. EMERY: Yes. And subsequent to that a system  
3 walkdown was performed.

4 MR. CONTE: Do you know what the results of?

5 MR. EMERY: No --

6 MR. CONTE: No damage?

7 MR. EMERY: -- significant damage.

8 MR. CONTE: Do you understand why the water hammer  
9 occurred?

10 MR. EMERY: Yes. The fact that on that side it  
11 was flashing to steam, it was going back to the condenser  
12 and flashing to steam and --

13 [Pause.]

14 MR. CONTE: To the condenser --

15 MR. EMERY: -- but it isolated.

16 MR. CONTE: It automatically isolated -- are you  
17 saying that the two-phased flow caused the Delta flow  
18 isolation and the water hammer?

19 MR. EMERY: Well, at this time I'm not sure where  
20 the isolation occurred and the report of the water hammer  
21 occurred. In other words, whether the isolation had  
22 occurred and then minutes later the report came, or whether  
23 it was happening at the same time.

24 I can't -- what I have written down in my notes is  
25 that the -- we have these timers that start, they're 45





1 second timers; and I believe at some point during that time  
2 I received a report that water hammer was occurring. My  
3 attention was to try and stop these Delta flow timers, so I  
4 was taking actions to that and then the system isolated and  
5 then I continued to receive reports that water hammer was  
6 being heard.

7 MR. CONTE: As far as you know you're team and  
8 you were properly following procedures?

9 MR. EMERY: Yes.

10 MR. CONTE: In sequence?

11 MR. EMERY: Yes. Yes. The only -- the one step  
12 that I found out later and I don't know -- I'm not really  
13 sure if that was the crucial step, was that it talks about -  
14 - when you start to pump, it talks about just throttling  
15 open the discharge valve and the team that reported back  
16 said that they just about had the discharge valve open which  
17 they weren't supposed to do that at that point. And I  
18 don't know if --

19 MR. CONTE: Discharge valve from where?

20 MR. EMERY: At the pump.

21 MR. CONTE: That was just before water hammer.

22 MR. EMERY: Not before. That was -- as best as I  
23 can piece, get together the sequence of events, I started  
24 the pump. They started opening up on the discharge valve.  
25 The delta flow timers started. At some point thereafter a



1 report came in for water hammer.

2 The team down in the pump room was still opening  
3 up on the discharge valve. Meanwhile, I was up in the  
4 control room trying to take actions to reduce flows so that  
5 we wouldn't get this severe delta flow that was causing  
6 these timers --

7 MR. JORDAN: What's the delta flow? Flow from?  
8 What's the two flows that you are comparing?

9 MR. EMERY: Flow coming in and flow going out,  
10 back to the condenser.

11 MR. JORDAN: The flow coming out of the vessel

12 MR. EMERY: Right.

13 MR. JORDAN: Into the reactor system?

14 MR. EMERY: Right.

15 MR. JORDAN: And the flow going back into

16 MR. EMERY: The -- wherever. In this case it was  
17 going back to the condenser.

18 MR. JORDAN: The condenser.

19 MR. EMERY: Right.

20 MR. JORDAN: And they compared those two flows,  
21 and what's the trip point on that?

22 MR. EMERY: I think it's 150 some gallons  
23 difference.

24 MR. JORDAN: 150 gallons and some difference  
25 between outflow -



1 MR. EMERY: In and out, right.

2 MR. JORDAN: Do you have an indication in the  
3 control room of the in and the out.

4 MR. EMERY: We have indications system flow --

5 MR. JORDAN: Let me ask it a different way. You  
6 say you were trying to control the delta flow?

7 MR. EMERY: Right. What my expectation was, I was  
8 only expecting to see 50 to 100 gallons of flow because my  
9 thought was they were only going to throttle open the  
10 discharge valve, so I wasn't expecting to see the delta flow  
11 timers come in at all.

12 MR. JORDAN: Okay.

13 MR. EMERY: So when they did come in I attempted  
14 to reduce the system flow with the controls that I had --

15 MR. JORDAN: To reduce which flow? How were you  
16 doing that?

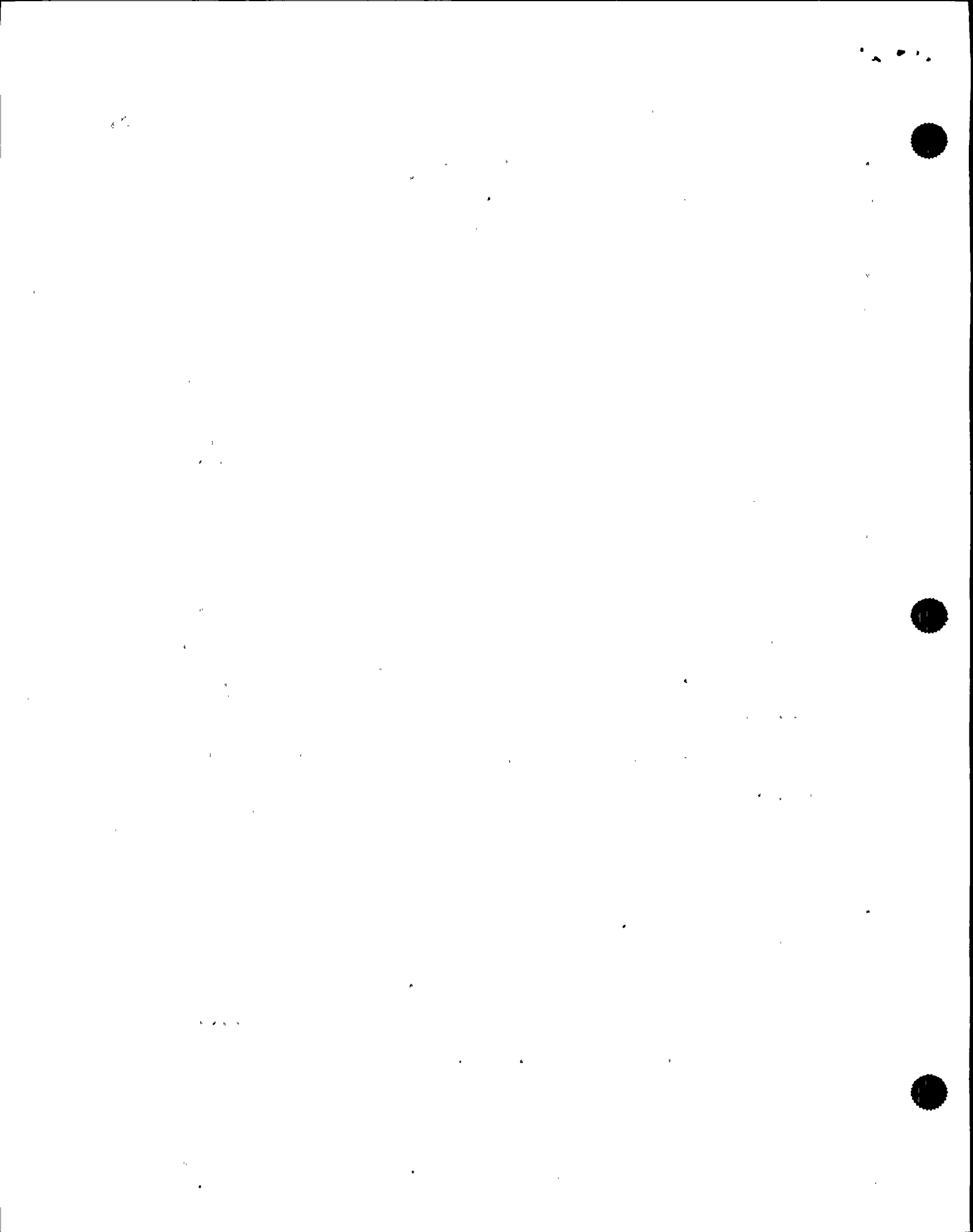
17 MR. EMERY: There is a valve, WCS-MOV-110 that we  
18 were throttling with and it was throttled open and I was at,  
19 that's a bypass around your filter demins. I was trying to  
20 throttle close on that.

21 MR. JORDAN: What's the number of the valve  
22 again?

23 MR. EMERY: WCS-MOV-110.

24 MR. JORDAN: And that is the bypass around the--

25 MR. EMERY: Filter demins.



1 MR. JORDAN: Okay, so you were trying to close  
2 down on that?

3 MR. EMERY: Correct.

4 MR. JORDAN: To reduce the total flow?

5 MR. EMERY: Correct.

6 MR. CONTE: What's your familiarity with the RHR  
7 water hammer, other than hearsay?

8 MR. EMERY: I was on one end of the control room  
9 and this evolution that was going on was on the 601 panel on  
10 the other end and to be honest I don't even know who  
11 reported it, whether it was mechanics or operators or who  
12 did report it.

13 MR. CONTE: Back on reactor water cleanup, are you  
14 willing to say at this point that there is something wrong  
15 with the procedure that gave the water hammer, or you just  
16 don't know?

17 MR. EMERY: I don't want to say because I am --  
18 because I had never tried putting it in, putting it on line  
19 at that particular point and because part of the procedure  
20 that I was using turned out to be part of the startup  
21 procedure.

22 I don't want to say it was truly a procedural  
23 question but other than the fact that we either need to  
24 decide whether, yes, that was the right section, no it  
25 wasn't the right section, if it wasn't the right section





1 what should have been the right section, and I passed all  
2 that on to the people doing this.

3 MR. CONTE: Did you give them the specific section  
4 that you were in?

5 MR. EMERY: Yes.

6 MR. CONTE: But you can't remember it right now?

7 MR. EMERY: Other than it was H and I can't  
8 remember the number of it, no.

9 MR. CONTE: It was in the off-normal?

10 MR. EMERY: It was in the off-normal section, yes.

11 MR. JORDAN: You were in H, not E.4?

12 MR. EMERY: That's where I started off was in the  
13 off-normal. The system that they prior to the procedure I  
14 ended up following was this E.4.

15 MR. JORDAN: E.4?

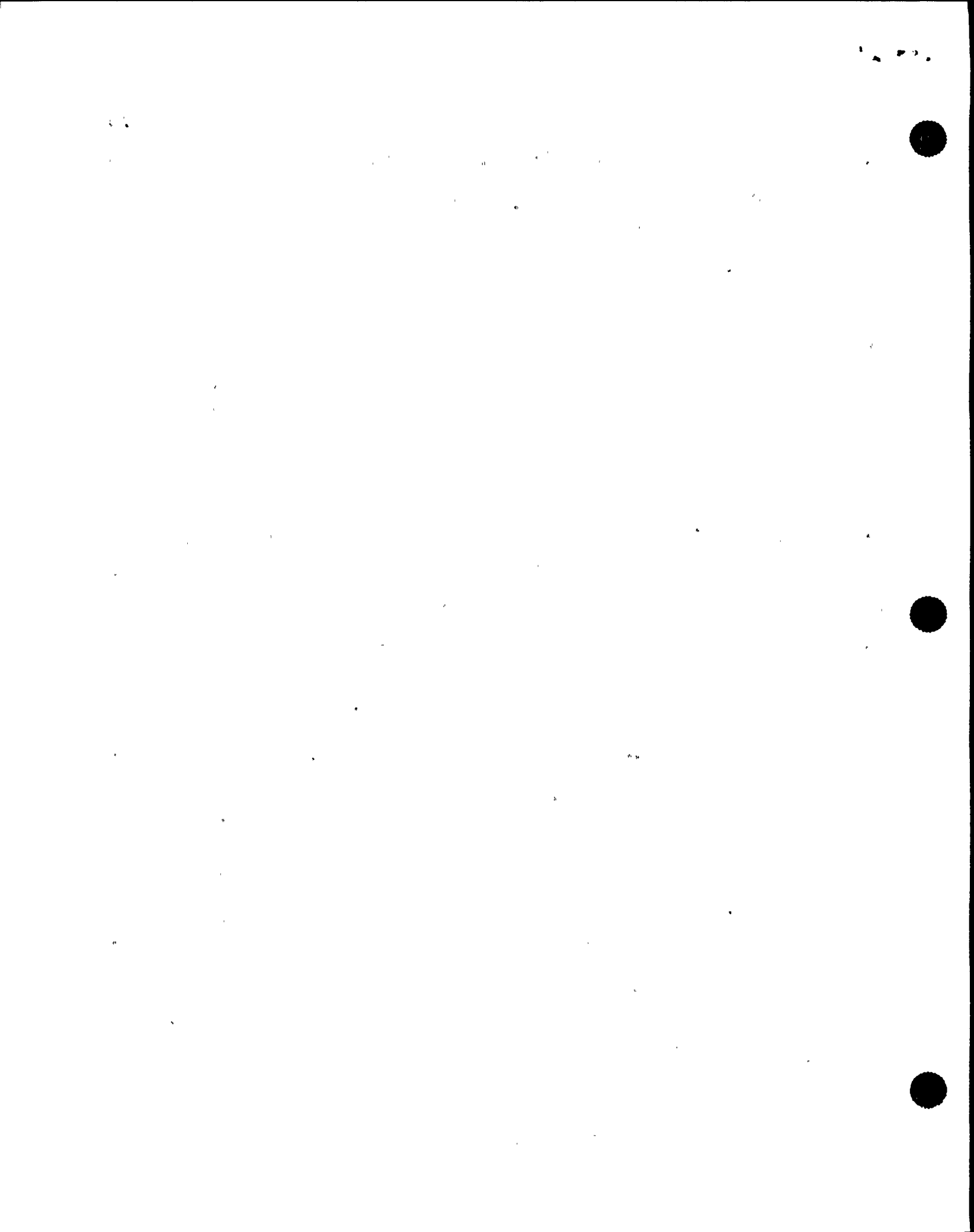
16 MR. EMERY: Yes.

17 MR. JORDAN: But you started out in the H, in the  
18 abnormal and it eventually led you into the E.4?

19 MR. EMERY: Right.

20 MR. JORDAN: The direction to the people in the  
21 plant on the discharge valve, is that something you gave  
22 them direction or they just had a procedure themselves out  
23 at the plant?

24 MR. EMERY: They took a copy of the procedure and  
25 had it with them.



1 MR. JORDAN: Okay. So they knew that they were  
2 supposed to be out there operating the valves and you were  
3 in the control room operating the valves?

4 MR. EMERY: Right.

5 MR. JORDAN: And the first report that you had  
6 that this discharge valve --

7 MR. CONTE: Have any discharge valve number? You  
8 don't remember that number?

9 MR. EMERY: 37 Bravo, I believe, V-37 Bravo. It's  
10 a manual valve.

11 MR. JORDAN: Okay. The first indication that you  
12 had to that that valve was any position at all was it was  
13 almost full open.

14 MR. EMERY: Well, this was subsequent to the  
15 event. At the time I either -- they may have been trying to  
16 contact me via the radio, which at the time I was dealing  
17 with the delta flow timers and whether they were trying to  
18 tell me that we were opening up the valve I don't remember.

19 MR. JORDAN: Who reported the water hammer?

20 How did you hear about the water hammer?

21 MR. EMERY: My team operators. It was -- what  
22 else had to be done was because the pump had been shut down  
23 for greater than 30 minutes we were supposed to vent the  
24 system and the team of operators up in the heat exchanger  
25 room was going to be performing the venting and that is



1 where they reported the water hammer.

2 MR. CONTE: Our notes here on the listing of  
3 functions of people says DW Cooling against your name. Were  
4 you involved in the drywell cooling?

5 MR. EMERY: Yes. That is right.

6 MR. CONTE: At what time?

7 MR. EMERY: This was fairly early. It was even  
8 before I took over RCIC control. I went back to the panel  
9 where drywell unit coolers are located with the Assistant  
10 SSS wanted to see if we could restore drywell unit coolers.  
11 The fan motors had tripped.

12 I attempted to -- we placed the overrides switches  
13 for the fan motors in the override and attempted to start  
14 the fans and they would not start.

15 MR. CONTE: Do you know why they tripped as a  
16 result of hindsight on this event? Is there something that  
17 drywell cooling has to do with the UPS power supplies that  
18 were lost?

19 [Pause.]

20 MR. CONTE: This isn't an exam. If you can  
21 recall, fine.

22 MR. EMERY: I don't, other than the ASSS mentioned  
23 that he was testing -- he wanted to see if they would start  
24 to see if we had DC control power.

25 MR. CONTE: That's what starts those fans, DC



1 control power on the breakers?

2 MR. EMERY: Yes.

3 MR. CONTE: And do you know what panels? I assume  
4 they are non-safety systems even though they are in the  
5 drywell.

6 MR. EMERY: Right, they are.

7 MR. CONTE: Where do they get their power --  
8 besides the DC control power?

9 MR. EMERY: Their main power is from the USS 5  
10 and 6 VSM 600 volt motor control centers 11 and 12.

11 MR. CONTE: USS 5 and 6, motor control centers 11  
12 and 12?

13 MR. EMERY: Right.

14 MR. JORDAN: In light of what you know of the UPS  
15 power supply's being out, is it normal -- is this an  
16 unexpected thing, that drywell cooling tripped?

17 MR. EMERY: Well, based on, without doing a  
18 examination of the prints I thought it was abnormal that  
19 they were tripped. Let's put it this way, when I walked in  
20 the control room and he said let's go back here and start  
21 the fans up, it kind of surprised me that they were tripped  
22 but that was so fast into the event I didn't even know what  
23 had transpired where the initiating event or anything at  
24 this point. This was more or less we walked in and he kind  
25 of grabbed me and said let's go back here and try and start





1 those.

2 MR. CONTE: Okay. I don't have any other question.

3 MR. JORDAN: I just have got one more question and  
4 it may be on the transcript, I just missed it.

5 What is your position normally on the shift?

6 MR. EMERY: Well, I am a reactor operator.

7 MR. JORDAN: Do you normally operate in the  
8 control room? Do you operate in the plant? Are you a CSO?

9 MR. EMERY: No. I am what they call an E  
10 operator. I don't know if you have heard that term.

11 MR. JORDAN: An E operator?

12 MR. EMERY: An E operator, right.

13 MR. JORDAN: So what --

14 MR. EMERY: We operate both in the control room  
15 and out in the plant.

16 MR. JORDAN: Okay.

17 MR. EMERY: We are the licensed people.

18 MR. JORDAN: Okay. Are you assigned one or the  
19 other position or do you operate in both or --

20 MR. EMERY: On a shift basis we are assigned  
21 either the control room or the plant. That particular day I  
22 was assigned to the control room.

23 MR. JORDAN: You were assigned to the control  
24 room?

25 MR. EMERY: Correct.



1 MR. JORDAN: Okay, so you went on relief. You  
2 were on the normal shift?

3 MR. EMERY: I was on the oncoming shift.

4 MR. JORDAN: Oncoming shift and your normal  
5 position in an oncoming shift was going to be the control  
6 room E operator?

7 MR. EMERY: Correct.

8 MR. JORDAN: That's all I want to know. Thank  
9 you.

10 MR. CONTE: We can go off the record.

11 [Whereupon, at 4:42 p.m., the taking of the  
12 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

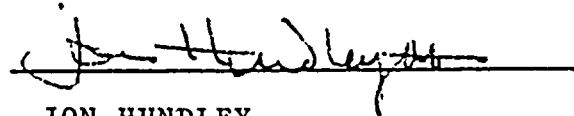
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NAME OF PROCEEDING: Int. of JAMES EMERY

DOCKET NUMBER:

PLACE OF PROCEEDING: Scriba, N.Y.

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JON HUNDLEY  
Official Reporter  
Ann Riley & Associates, Ltd.



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OFFICIAL TRANSCRIPT OF PROCEEDINGS

Agency: Nuclear Regulatory Commission  
Incident Investigation Team

Title: Nine Mile Point Nuclear Power Plant  
Interview of: JAMES EMERY

Docket No.

LOCATION: Scriba, New York

DATE: Tuesday, August 20, 1991

PAGES: 1 - 28

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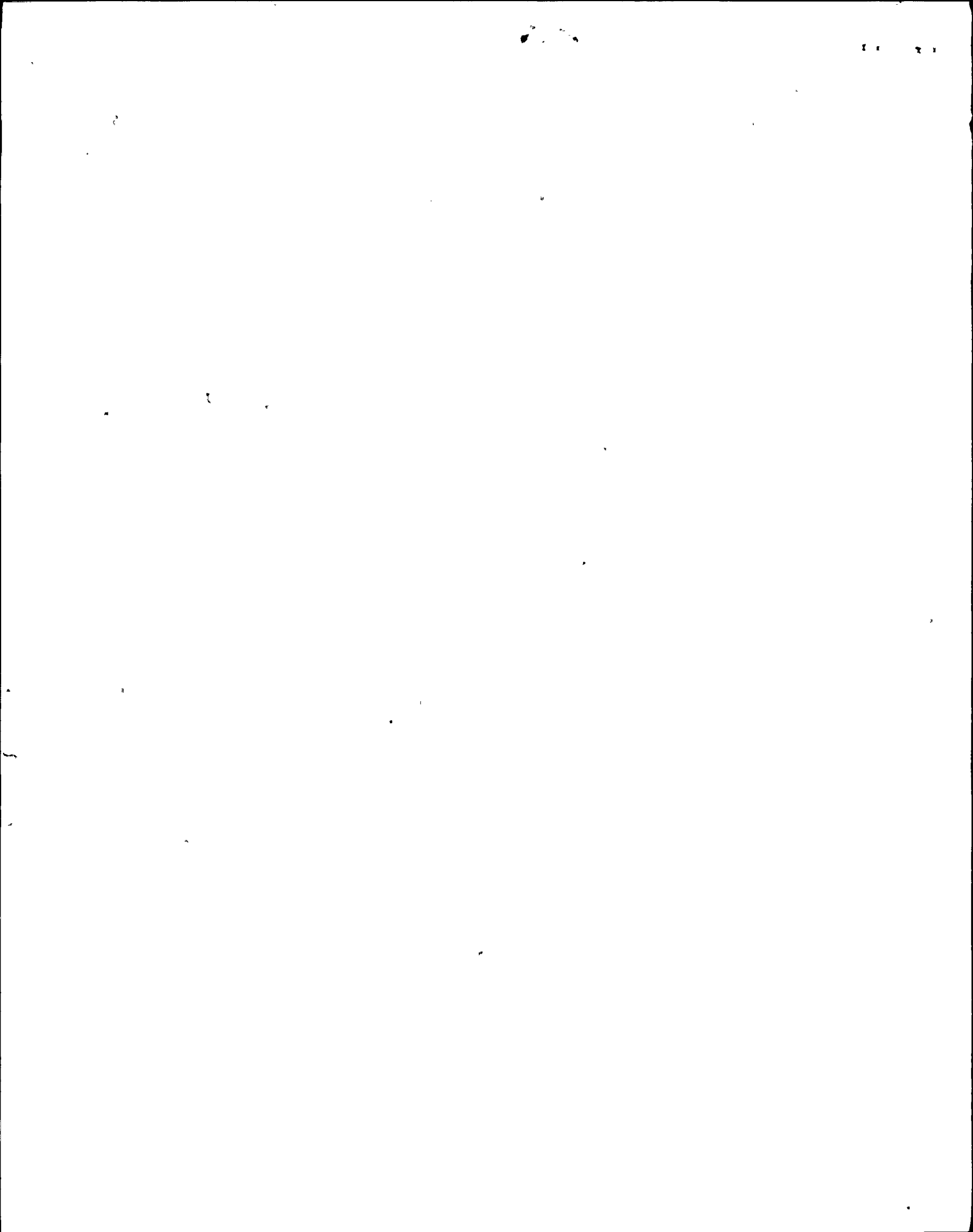
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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
INCIDENT INVESTIGATION TEAM

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Interview of :  
JAMES EMERY :  
(Closed) :  
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Conference Room B  
Administration Building  
Nine Mile Point Nuclear  
Power Plant, Unit Two  
Lake Road  
Scriba, New York 13093  
Tuesday, August 20, 1991

The interview commenced, pursuant to notice,  
at 3:55 p.m.

PRESENT FOR THE IIT:  
Mike Jordan, NRC  
Rich Conte, NRC



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

[3:55 p.m.]

1  
2  
3 MR. JORDAN: It's August the 20th, 1991, at 3:55  
4 p.m. We're at Nine Mile Point, Unit Two, the P Building.  
5 We're here to cover an event of a transient that occurred on  
6 August the 13th, 1991. My name is Michael Jordan. I'm with  
7 the NRC out of Region III.

8 MR. CONTE: I'm Rich Conte, Region I.

9 MR. EMERY: James Emery, reactor operator, Unit  
10 Two.

11 MR. JORDAN: Okay. You go by Jim or James?

12 MR. EMERY: Jim.

13 MR. JORDAN: Okay. Jim. Why don't you just tell  
14 us what your background is and experience that you have.

15 MR. EMERY: My background is that I obtained my  
16 reactor operator's license approximately three, three and a  
17 half years ago; February of 1988. And prior to that I was  
18 an auxiliary operator from approximately 1980 -- April of  
19 1984 until that date in 1988. Prior to that I was a  
20 security guard at Unit One from 1981 to about 1984.

21 I'm not sure how far back you want me to go.

22 MR. CONTE: Any prior nuclear experience before  
23 joining Niagara Mohawk?

24 MR. EMERY: No. No. I obtained -- I went to -- I  
25 obtained a bachelor of arts degree from Hobart College in



1 1975 and worked in a -- it's called the title insurance  
2 abstract business.

3 MR. JORDAN: Okay, Jim, why don't you, in your  
4 words give us an idea of what you saw as far as the event  
5 that happened on August 13th?

6 MR. CONTE: Were you coming in, in the morning?

7 MR. EMERY: I was coming in. In fact I --

8 MR. CONTE: Take us from there.

9 MR. EMERY: I arrived, I would guess, probably  
10 within five minutes of the initial event.

11 MR. CONTE: The initial even was 05:48.

12 MR. EMERY: Right.

13 MR. CONTE: So you're saying about --

14 MR. EMERY: Approximately five to six or so.

15 MR. CONTE: Five to six?

16 MR. EMERY: Right. I made -- as I was coming into  
17 the plant a security guard had told me that the reactor had  
18 just scrambled and I kind of looked up at the cooling tower  
19 and noticed that there was still evaporation. I thought he  
20 was just kidding me. He said, "No, I'm not kidding you."  
21 And I went into the entrance to the control building and  
22 took the northeast stairs up and as soon as I got into that  
23 northeast stair tower I realized that, no, he wasn't  
24 kidding me because it was pitch black in the stair tower.  
25 And I climbed my way up to the control room and entered the





1 --

2 MR. CONTE: What elevation is the control room?

3 MR. EMERY: 306.

4 MR. JORDAN: And the ground floor is?

5 MR. EMERY: 261.

6 MR. JORDAN: Thanks.

7 MR. EMERY: And then I entered the control room of  
8 which there were -- that was lit and then I went up to the -  
9 - at the controls area and at that time the SSS was at the  
10 EOP area and the CSO was operating what we call RCIC system.

11 I remember not seeing any type of -- that I can  
12 remember -- any type of annunciators flashing at that point.  
13 And I did glance over at the full core display and I don't  
14 remember seeing much information on there. But I was kind  
15 of at the RCIC area, so that's probably 20-25 feet away.

16 MR. CONTE: CSO from the midshift was on RCIC?

17 MR. EMERY: That's correct. Mark Davis. And as I  
18 recall I offered to relieve him because our policy is that  
19 the CSO would step back and try and maintain a -- what we  
20 call a big picture and act as the foremen, so to speak, to  
21 delegate work as necessary. So I then took the controls of  
22 RCIC which were at that time in manual. He had warned me  
23 that it didn't seem to respond correctly; in automatic it  
24 was fluctuating, so he took it to manual and parameters  
25 stabilized and when I took over it was in manual. And at



1 that time I believe he pointed out to me that he thought we  
2 had a misindication light for one of the testable check  
3 valves associated with RCIC, in that it was not showing  
4 open, yet we were showing a full 600 gallons per minute flow  
5 which is full flow for that system.

6 MR. CONTE: Do you have the number designator on  
7 that testable check valve? Is there only one in the system?

8 MR. EMERY: No. There are two and I can't  
9 remember -- I believe it was the in-board one which is AOV-  
10 157.

11 MR. CONTE: AOV?

12 MR. EMERY: Yes.

13 MR. CONTE: 157?

14 MR. EMERY: Correct. ICS, AOV-157.

15 MR. CONTE: Okay

16 MR. EMERY: I wasn't at that station very long and  
17 then I was relieved and given the -- I kind of stepped back  
18 for a few moments and the SSS was still trying to apprise  
19 the situation; getting parameters such as level and  
20 pressure.

21 My next assignment was to -- we were starting to  
22 depressurize and the SSS did not want that to continue so he  
23 asked me to take actions as part of our shutdown procedure  
24 for controlling our depressurization and the only actions  
25 that I got to was that I did end up shutting some main steam



1 line drain valves which were MSS, AOV's, 87 Alpha through  
2 Delta.

3 MR. CONTE: Did he say why he didn't want to  
4 depressurize?

5 MR. EMERY: Well, I don't remember if he -- if he  
6 did say because of our full core display problem and our  
7 verification whether all rods were in and so on and so  
8 forth. If it was for that reason or the reason that we  
9 are, as a guideline, given not to cooldown greater than 100  
10 degrees an our and I believe pressure had gone down to 600  
11 pounds or so.

12 So, to answer that question, I can't remember if  
13 he did give us a specific reason.

14 MR. CONTE: Continue.

15 MR. EMERY: After I shut those AOV's for the  
16 pressure control I happened to go over to our 851 panel and  
17 noticed that our cooling tower basin level was higher than  
18 normal and I -- I ended up reestablishing what we call  
19 blowdown flow to try and lower that. Then I was told to  
20 place one of the RHS loops into suppression pool cooling.  
21 It was the Alpha loop, and I did that. Then I started  
22 working with another operator as far as they wanted to  
23 secure off gas in the steamjet air rejecters and start our  
24 air removal pumps. I worked on that.

25 MR. JORDAN: Is power still out at this time?



1 MR. EMERY: No. We had -- the UPS's had been  
2 restored.

3 MR. JORDAN: How about the suppression pool  
4 cooling? Did you do that before or after the power?

5 MR. EMERY: That I'm not sure about. I can't  
6 remember.

7 MR. CONTE: By the way, that 851 panel, is that by  
8 any chance called the KERK panel -- CIRC panel?

9 MR. EMERY: CIRC panel.

10 MR. CONTE: It would be C-I-R-C?

11 MR. EMERY: Right. It could be called that.  
12 That's one of the -- the circ water system is one of the  
13 systems on that panel as well as EHC.

14 MR. CONTE: Okay.

15 MR. JORDAN: You put the A in suppression point  
16 cooling. What else did we do?

17 MR. EMERY: Let's see. From there I went to --  
18 they were concerned about loosing our sealing steam. The  
19 equipment that provides it -- the sealing steam, at the time  
20 was getting main steam and they wanted that to be swapped  
21 over to an auxiliary system which is our auxiliary boiler  
22 system so that steam seals could be continued to be  
23 provided. And that was another task that I was assigned,  
24 was swapping over to the aux boiler steam.

25 MR. CONTE: I heard there was a problem with one





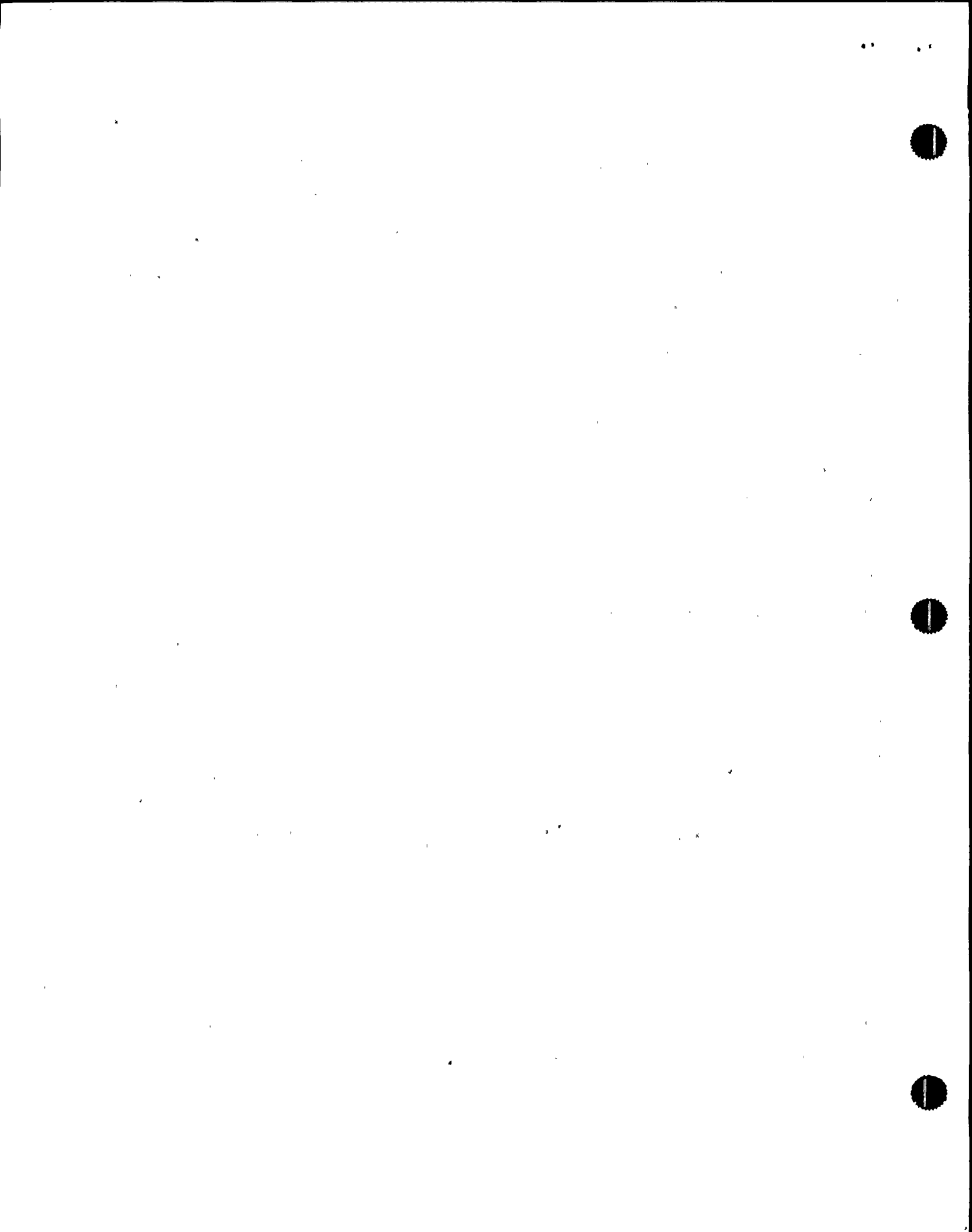
1 of the auxiliary steam valves; are you aware of that? Did  
2 you experience that problem?

3 MR. EMERY: Yes. Well, the one particular valve  
4 we were working with was ASS-AOV-145. It's been a problem  
5 that has occurred in the past. These valves require higher  
6 pressure than what our normal instrument air system can  
7 provide, so what the fix has been is to provide these little  
8 air booster skids for these valves. Unfortunately, the  
9 little air booster skids haven't operated as effectively as  
10 they should, so we did have a problem with that in that  
11 the operator got out to the valve, that's AOV-145, we  
12 attempted to open it, the valve did not open. He then went  
13 over to its air booster skid and noticed that the pressure  
14 was lower than required for opening it and that the pump  
15 associated with this air booster skid was not operating and  
16 he then took steps to try and realign air to it to get it  
17 pumping. He succeeded and we got the --

18 MR. CONTE: Would you know why the pump was not  
19 running? Do you suspect it was because of the power outage,  
20 or you just don't know?

21 MR. EMERY: No. No, I don't think it had anything  
22 to do with the power outage.

23 MR. CONTE: In other words in the past -- you said  
24 that this was a problem in the past, so in the past these  
25 pumps have not operated or tripped or something?



1 MR. EMERY: Correct. And it's -- I believe  
2 correct paperwork has been forwarded to engineering advising  
3 them that we do have a problem, that they need to come up  
4 with something.

5 MR. CONTE: Before this event or after?

6 MR. EMERY: Before. Because almost every outage  
7 we entail the same problems with these booster skids as far  
8 as their operations.

9 MR. CONTE: So how did the -- oh, so the -- he  
10 started the pump in order to get the booster skid running  
11 again, and then he was able to successfully open?

12 MR. EMERY: Right.

13 MR. CONTE: Is that correct?

14 MR. EMERY: Right. He was able to start up a pump  
15 on the air booster skid which then provided enough pressure  
16 to open up the AOV-145.

17 MR. CONTE: How much -- what effect does that --  
18 the fact that you go to open up a switch, AOV-145, didn't  
19 open, is it a matter of delay of minutes? Was it crucial to  
20 get this valve opened fast or --

21 MR. EMERY: Not in this. We had time.

22 MR. CONTE: Can you think of anything during the  
23 day's events that there was something urgent, there was some  
24 valve that needed to be opened urgently and if air booster  
25 skids malfunction interfered with that? Do you have



1 personal knowledge of that or did you hear about it from  
2 other people?

3 [Pause.]

4 MR. EMERY: At this point I can't -- I can't  
5 remember any other air booster skid valve causing us any  
6 problem. This was the one that I was working directly with,  
7 so I --

8 MR. CONTE: Okay. All right, so it sounds like  
9 you were successful in getting sealing steam --

10 MR. JORDAN: If you weren't -- to seal steam --  
11 you're transferring aux boiler to get the aux boiler steam  
12 in the primary steam?

13 MR. EMERY: Right.

14 MR. JORDAN: If you weren't successful in doing  
15 that, what would have been the consequences of it?

16 MR. EMERY: To be truthful, I don't know what they  
17 would have -- what the next course of action -- we've never  
18 had -- had the problem occur. Whether they would have had  
19 to -- we had the generator filled with hydrogen. I'm  
20 suspecting the next move would have been, well, we can't  
21 keep that sealed in there with it because we have no sealing  
22 steam, they might have had to open the -- what we call the  
23 dump valve -- or sort of the generator and --

24 MR. JORDAN: Okay.

25 MR. EMERY: -- evacuate the generator of hydrogen.



1 And then --

2 MR. CONTE: Did you get into all those nukes?

3 MR. JORDAN: Yes. Go ahead.

4 MR. CONTE: How did you get involved --

5 MR. EMERY: The next thing that I was involved  
6 with was an attempt to place our clean up system into full  
7 reject mode.

8 MR. CONTE: Reactor water cleanup in what mode?

9 MR. EMERY: Full reject.

10 MR. CONTE: Full reject in distinction to what  
11 other modes?

12 MR. EMERY: It returns to -- normally it returns  
13 back to the vessel -- full reject is where you direct it to  
14 either the condenser or to RAD waste. Their concern is  
15 stratification of feedwater piping. In the conditions we  
16 were in.

17 MR. CONTE: What was your order in this full  
18 reject to where, to the condensate or the RAD waste system?  
19 Where did the SS direct you to?

20 MR. EMERY: To be honest, I can't remember if he  
21 directed me either way. I think I just assumed he wanted to  
22 go back to the condenser because RAD waste has a temperature  
23 limit on their tanks and at that time the reactor water was  
24 still 300 - 400 degrees and their temperature limit, I  
25 believe, is around 180 degrees.





1 MR. CONTE: Can you do a light up from the  
2 control room or reactor water clean up?

3 MR. EMERY: In the situation we were in, while  
4 either situation; no, we -- at the minimum we have to send  
5 operators up to the remote -- I shouldn't say remote -- the  
6 panel up on -- out in the reactor building to monitor the  
7 filters demins connector with this system.

8 MR. CONTE: How were you involved in this? You  
9 were the licensed operator in charge of the --

10 MR. EMERY: Right. I suggested -- or I asked the  
11 SSS if this is -- if he wanted to align the system for the  
12 full reject mode because there is -- in our operating  
13 procedure for clean up, it says that any time we're less  
14 than 20 percent power, and over 200 degrees temperature, I  
15 think that's the parameters, that we should be in this type  
16 of line up and he said -- saw no reason why not to be in it,  
17 proceed.

18 MR. CONTE: Operators who went out to the reactor,  
19 were they using procedures?

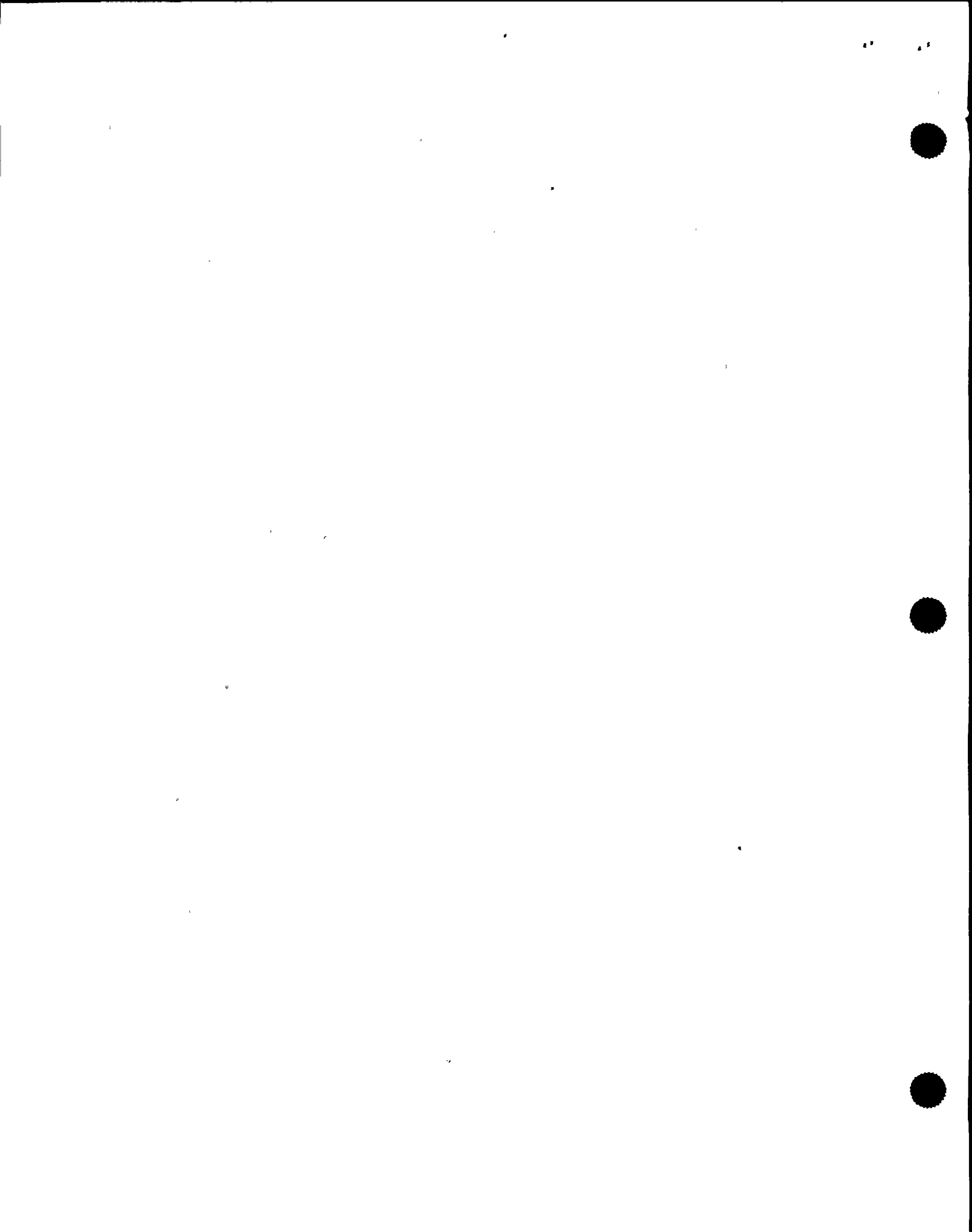
20 MR. EMERY: Yes.

21 MR. CONTE: Were you using the procedures?

22 MR. EMERY: Yes.

23 MR. JORDAN: What was the procedure you were  
24 using?

25 MR. EMERY: N2-OP-37.



1 MR. CONTE: Okay.

2 MR. EMERY: That event did not go as anticipated  
3 and ended up taking a system isolation due to what we call  
4 our Delta flow timers. And after that occurred, the SSS --  
5 and when I say SSS, the original SSS was Mike Conway. The  
6 SSS at the time of the isolation was George Moyer. George  
7 Moyer came over and said just leave the system as is, and  
8 we'll -- we'll deal with it later on after it's cooled down  
9 more. At the time we were using -- it was about 360 degree  
10 water or so.

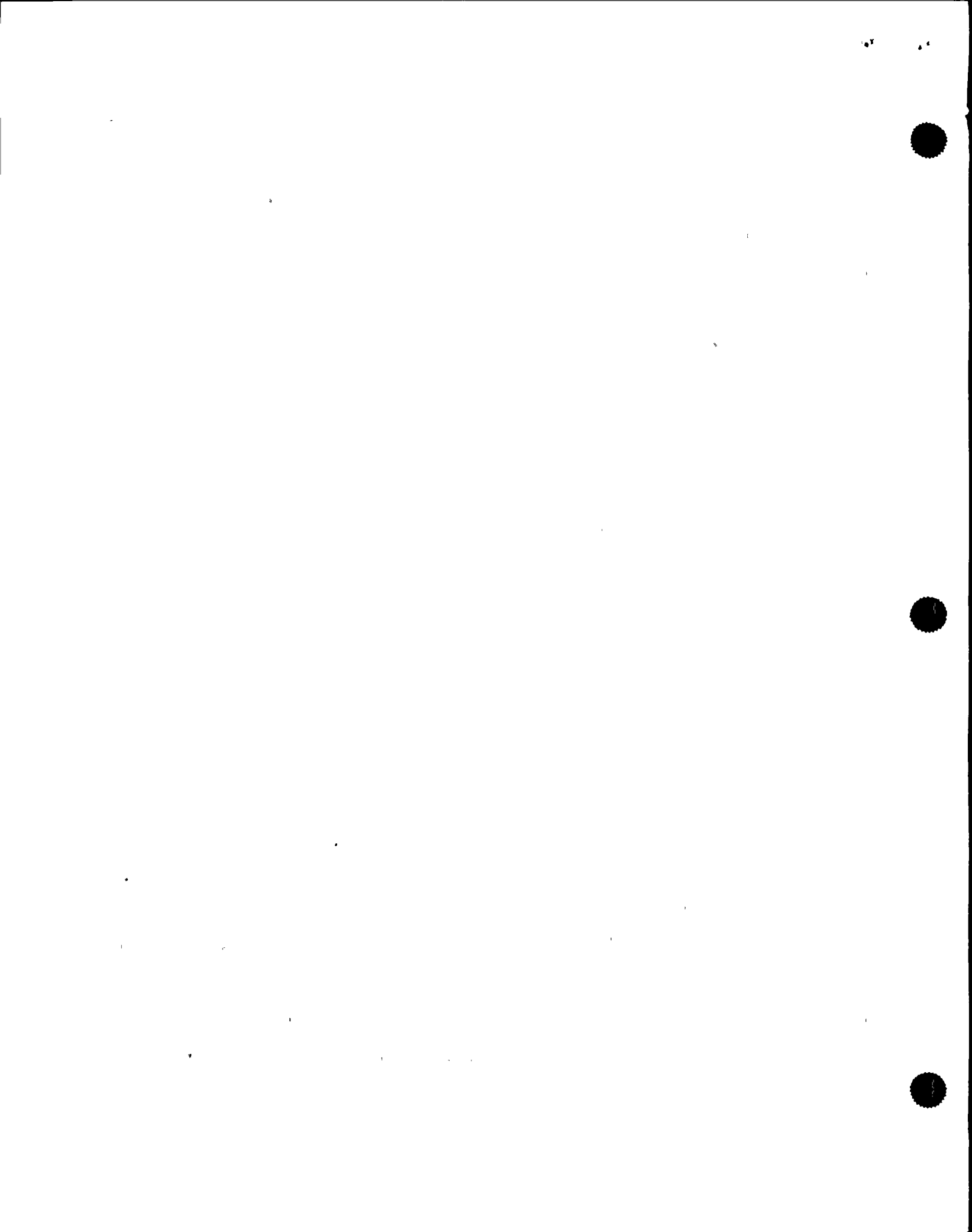
11 MR. CONTE: It was 360 degree water?

12 MR. EMERY: Right.

13 MR. CONTE: Do you understand why that isolation  
14 occurred?

15 MR. EMERY: Yes. The way the procedure was  
16 written and we are, at this time taking steps to amend the  
17 procedure, the procedure that --the part of it that I was  
18 using was actually for -- well, I shouldn't say was actually  
19 for -- it was -- the way I interpreted it, it was for the  
20 conditions we were in, but from other inputs I've heard that  
21 no, we use this when we're starting up and directing it to -  
22 - before -- in other words, before we get to say, 200 degree  
23 temperature, we align ourselves into full reject.

24 Whereas, where I was, or where the conditions we  
25 had at the time, we had 360 degree water or so and --



1 [Pause.]

2 MR. CONTE: When we go OP-37, will it be obvious  
3 that we know what section you were in, the start up portion  
4 of it? Do you remember the section of OP-37 that you were  
5 using?

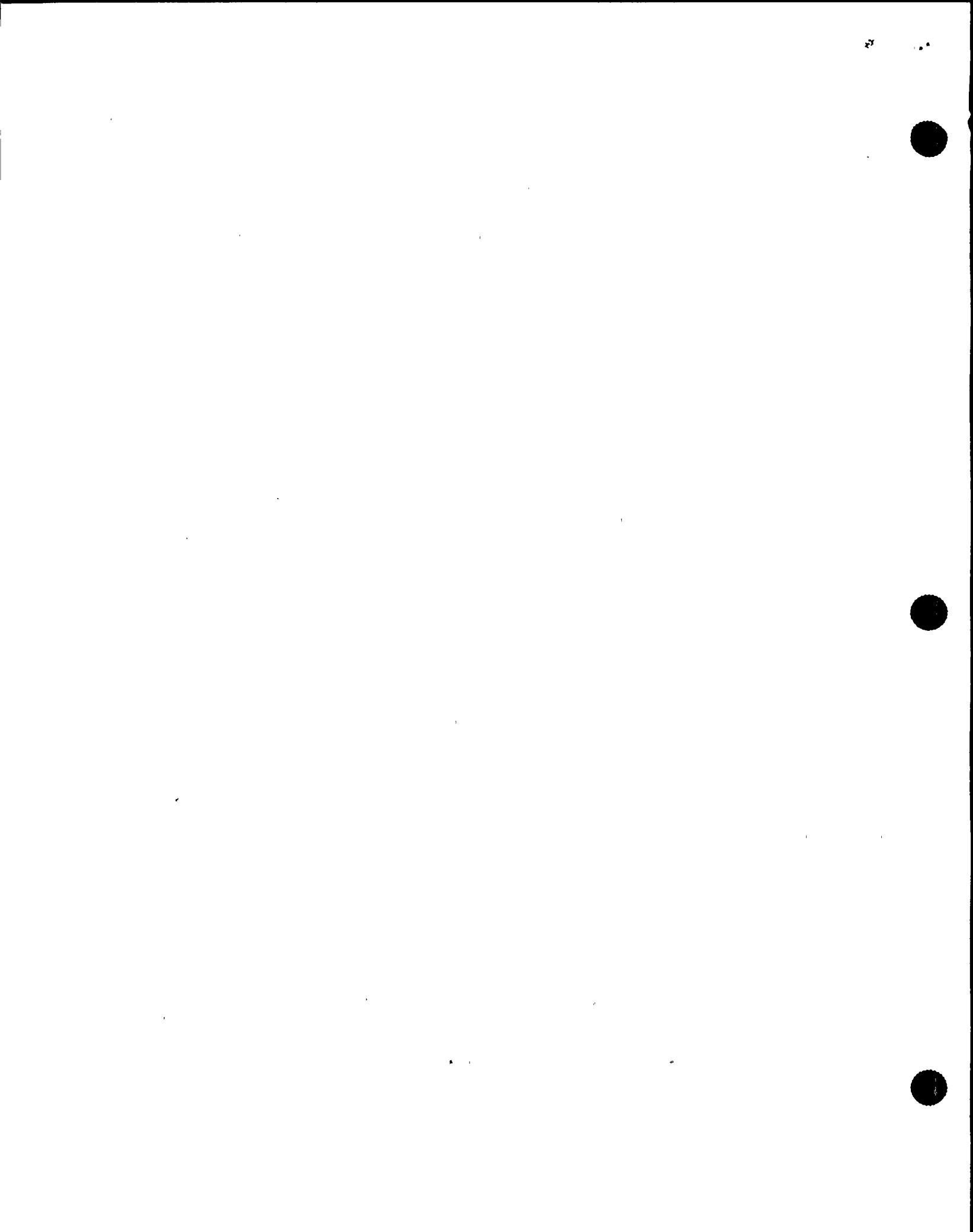
6 MR. EMERY: Well, I think I started off in section  
7 -- there is a section -- I believe it's under H -- the off-  
8 normal section which is where I started off and that was  
9 written -- that was written for having a pump operating and  
10 your filters on-line. In the condition we were in the  
11 operating pump had been tripped by an operator as part of an  
12 immediate scram action. And the filters were -- the status  
13 of those were -- they have little holding pumps connected  
14 with them and they were running, but they had isolated so  
15 there was no actual flow going through them.

16 MR. CONTE: So the procedure did not reflect  
17 actual plant conditions to be used?

18 MR. EMERY: Correct. Well, when I say correct,  
19 the -- one of our immediate scram actions is to either trip  
20 the pump or go into full reject and --

21 MR. CONTE: Do you know why that is?

22 MR. EMERY: We've had problems with our cleanup  
23 system; pump seals have been continuously ruined just  
24 because of the perturbations on the system and part of them  
25 again because of this feedwater stratification worry, so



1 they give you the option whether to shut the pump down or go  
2 on to this full reject.

3 MR. JORDAN: Did it actually trip the pump? Do  
4 they have to close an isolating valve?

5 MR. EMERY: No. They turn the pump off.

6 MR. JORDAN: Okay. And there's no procedure,  
7 scram recovery type procedure that says when the pump is  
8 turned off how to start the system back up?

9 MR. EMERY: No. Well, there is, and that's what I  
10 thought I was under because I knew we could go into this  
11 full reject mode in the condition -- as a post-scram  
12 recovery action.

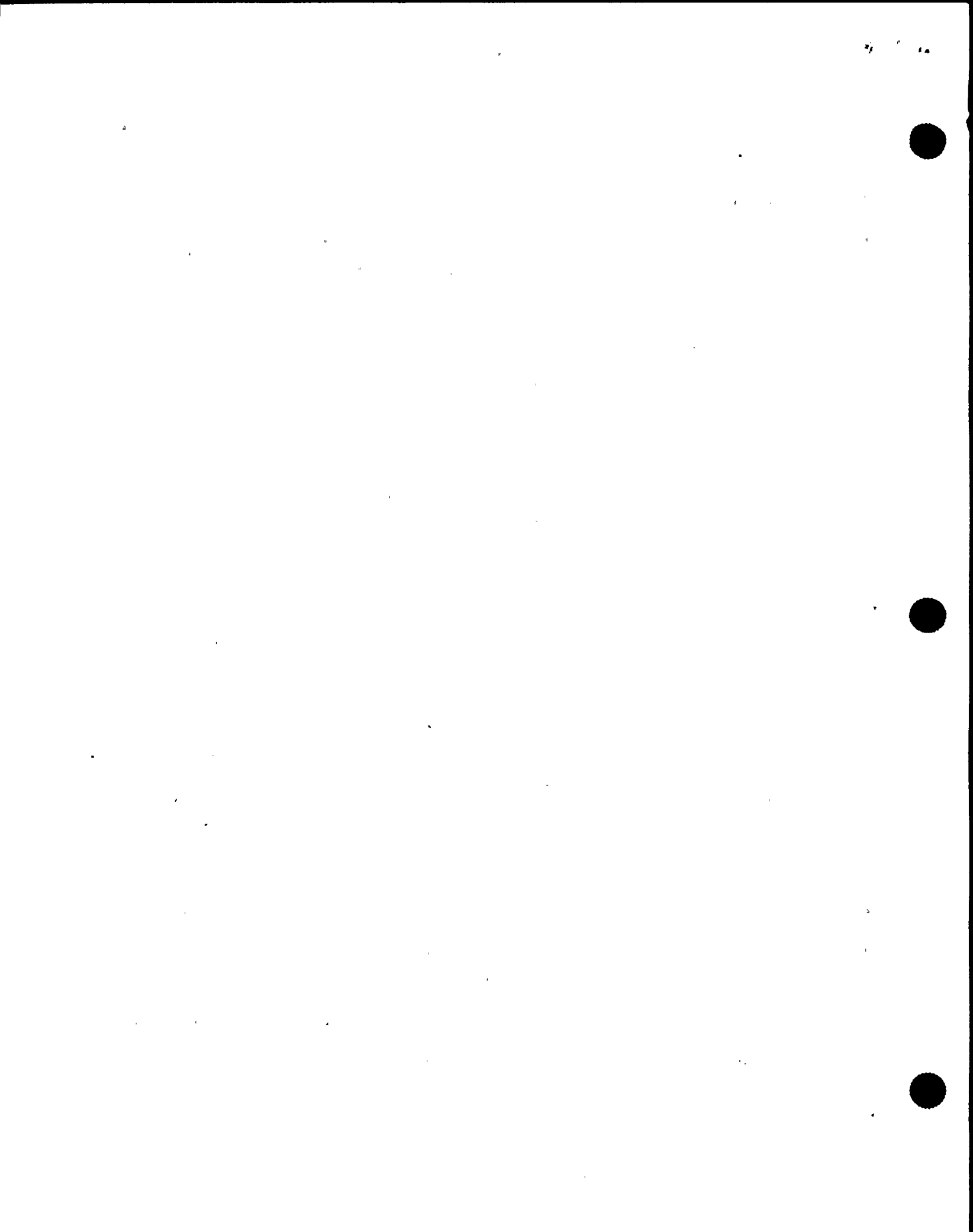
13 MR. JORDAN: Okay.

14 MR. EMERY: And that was Section E.4 of the  
15 procedure.

16 MR. JORDAN: E.4 was where you were?

17 MR. EMERY: Right. It talks about starting up the  
18 system -- up with a full reject and if the pump is hot,  
19 meaning within 100 degrees of coolant temperature.

20 MR. CONTE: What in the procedure misguides you?  
21 I mean, what in the procedure causes that Delta flow?  
22 You're saying that the procedure needs to be revised.  
23 There's a way of getting around it such that it will work on  
24 a post-scram recovery, right? Do you know how to do that at  
25 this point, or is engineering looking at that?





1 MR. EMERY: No. At this point I believe people  
2 are looking at it.

3 The inputs that I've had from people -- now, let  
4 me say this too, I had never done it under the conditions we  
5 were under. So I didn't have experience to go on. People  
6 that had had experience said that they -- we've had problems  
7 in the past doing it in this mode. But I didn't know that  
8 at the time.

9 And we're still -- we have an -- I don't want to  
10 say investigation, but whenever we have one of these type of  
11 incidents we do a group cause analysis and so on and so  
12 forth and that's still going on.

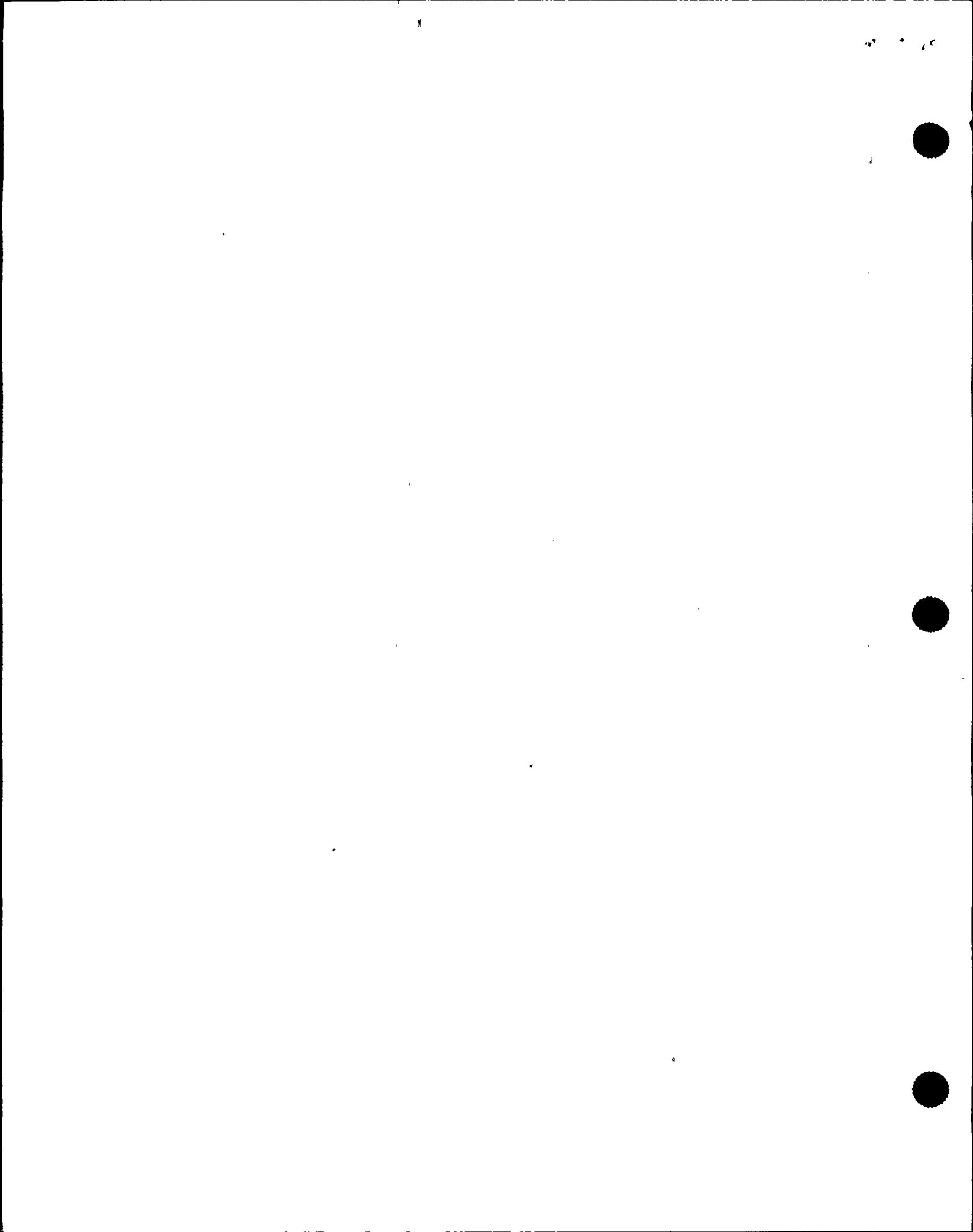
13 MR. CONTE: What were you involved in next after  
14 reactor water cleanup? You were told to abandon that  
15 evolution?

16 MR. EMERY: Right. As far as I remember the last  
17 thing that I did was -- they were trying to get shutdown  
18 cooling on and that was on the B, Bravo loop and they had a,  
19 what we call post-maintenance test that they wanted to  
20 perform on one of the shutdown cooling valves on the Alpha  
21 loop. It involved opening two RHS-MOV-40 Alpha -- timing it  
22 open and I believe timing it shut.

23 MR. CONTE: MOV-40 Alpha?

24 MR. EMERY: That's correct. And I performed that.

25 MR. CONTE: Were you successful?



1 MR. EMERY: Yes.

2 MR. CONTE: Then what?

3 MR. EMERY: That's all I have. That was the last  
4 noteworthy item I was involved with as far as I can  
5 remember.

6 MR. CONTE: There were two reports of water hammer  
7 in the reactor water cleanup and RHR to the RAD waste  
8 system. Do you know anything about that? Did you ever hear  
9 that report?

10 MR. EMERY: I was intimately involved with the  
11 reactor water cleanup on that.

12 MR. CONTE: Where? Okay, could you explain?

13 MR. EMERY: That occurred while I was trying to  
14 align it into this full reject mode.

15 MR. CONTE: Are you convinced -- did you hear it?  
16 Were you at the local station?

17 MR. EMERY: I was at the time -- I was at the 602  
18 panel in the main control room. I had a team of operators  
19 at the cleanup pump room in the RHR heat -- or, excuse me,  
20 reactor water cleanup heat exchanger room and the reactor  
21 water cleanup panel. So I had three sets of teams out in  
22 the reactor building. And the report of water hammer came  
23 from the team that was at the reactor water cleanup heat  
24 exchanger room and the reactor water cleanup panel.

25 MR. CONTE: Were they convinced it was water



1 hammer?

2 MR. EMERY: Yes. And subsequent to that a system  
3 walkdown was performed.

4 MR. CONTE: Do you know what the results of?

5 MR. EMERY: No --

6 MR. CONTE: No damage?

7 MR. EMERY: -- significant damage.

8 MR. CONTE: Do you understand why the water hammer  
9 occurred?

10 MR. EMERY: Yes. The fact that on that side it  
11 was flashing to steam, it was going back to the condenser  
12 and flashing to steam and --

13 [Pause.]

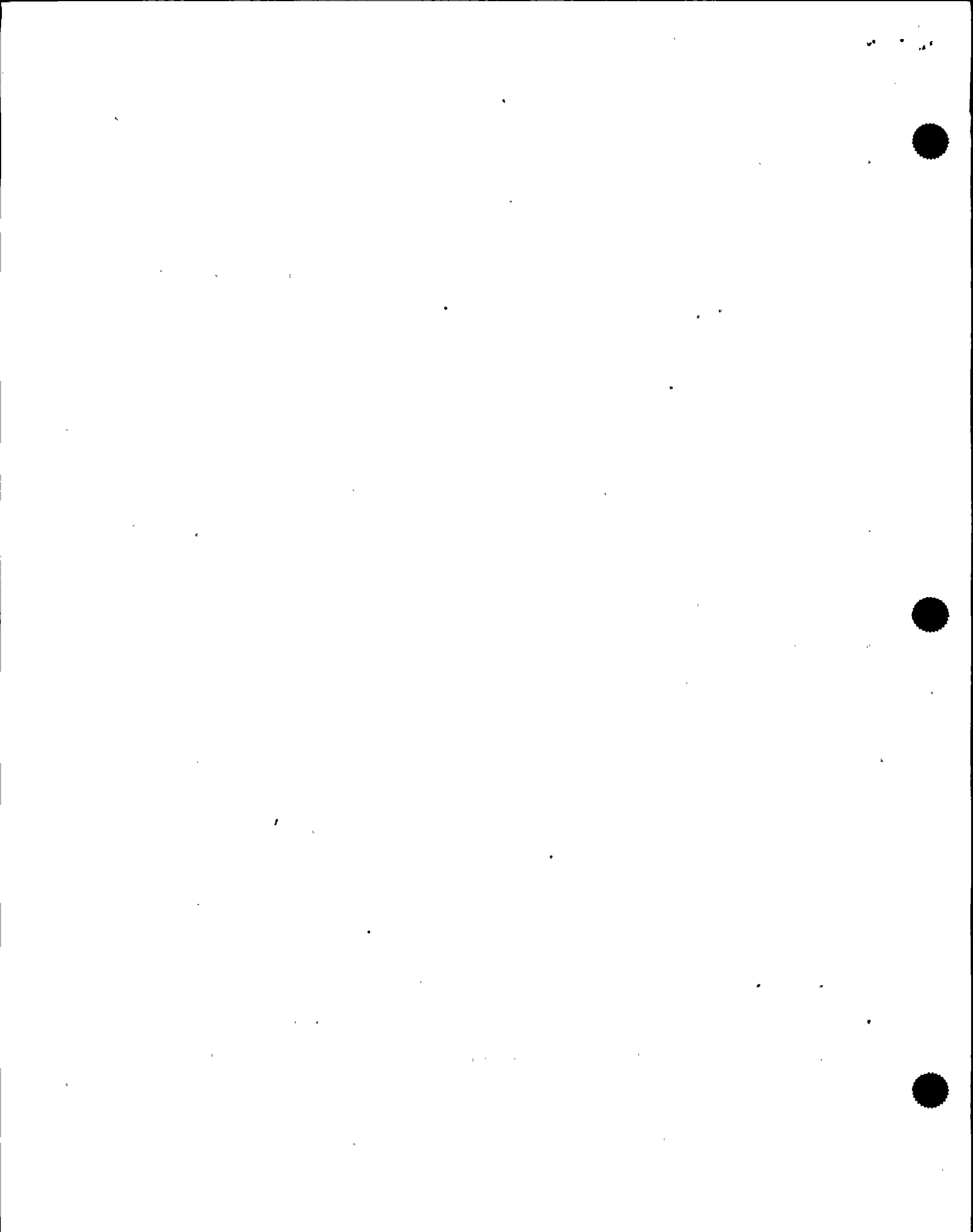
14 MR. CONTE: To the condenser --

15 MR. EMERY: -- but it isolated.

16 MR. CONTE: It automatically isolated -- are you  
17 saying that the two-phased flow caused the Delta flow  
18 isolation and the water hammer?

19 MR. EMERY: Well, at this time I'm not sure where  
20 the isolation occurred and the report of the water hammer  
21 occurred. In other words, whether the isolation had  
22 occurred and then minutes later the report came, or whether  
23 it was happening at the same time.

24 I can't -- what I have written down in my notes is  
25 that the -- we have these timers that start, they're 45



1 second timers; and I believe at some point during that time  
2 I received a report that water hammer was occurring. My  
3 attention was to try and stop these Delta flow timers, so I  
4 was taking actions to that and then the system isolated and  
5 then I continued to receive reports that water hammer was  
6 being heard.

7 MR. CONTE: As far as you know you're team and  
8 you were properly following procedures?

9 MR. EMERY: Yes.

10 MR. CONTE: In sequence?

11 MR. EMERY: Yes. Yes. The only -- the one step  
12 that I found out later and I don't know -- I'm not really  
13 sure if that was the crucial step, was that it talks about -  
14 - when you start to pump, it talks about just throttling  
15 open the discharge valve and the team that reported back  
16 said that they just about had the discharge valve open which  
17 they weren't supposed to do that at that point. And I  
18 don't know if --

19 MR. CONTE: Discharge valve from where?

20 MR. EMERY: At the pump.

21 MR. CONTE: That was just before water hammer.

22 MR. EMERY: Not before. That was -- as best as I  
23 can piece, get together the sequence of events, I started  
24 the pump. They started opening up on the discharge valve.  
25 The delta flow timers started. At some point thereafter a





1 report came in for water hammer.

2 The team down in the pump room was still opening  
3 up on the discharge valve. Meanwhile, I was up in the  
4 control room trying to take actions to reduce flows so that  
5 we wouldn't get this severe delta flow that was causing  
6 these timers --

7 MR. JORDAN: What's the delta flow? Flow from?  
8 What's the two flows that you are comparing?

9 MR. EMERY: Flow coming in and flow going out,  
10 back to the condenser.

11 MR. JORDAN: The flow coming out of the vessel

12 MR. EMERY: Right.

13 MR. JORDAN: Into the reactor system?

14 MR. EMERY: Right.

15 MR. JORDAN: And the flow going back into

16 MR. EMERY: The -- wherever. In this case it was  
17 going back to the condenser.

18 MR. JORDAN: The condenser.

19 MR. EMERY: Right.

20 MR. JORDAN: And they compared those two flows,  
21 and what's the trip point on that?

22 MR. EMERY: I think it's 150 some gallons  
23 difference.

24 MR. JORDAN: 150 gallons and some difference  
25 between outflow -



1 MR. EMERY: In and out, right.

2 MR. JORDAN: Do you have an indication in the  
3 control room of the in and the out.

4 MR. EMERY: We have indications system flow --

5 MR. JORDAN: Let me ask it a different way. You  
6 say you were trying to control the delta flow?

7 MR. EMERY: Right. What my expectation was, I was  
8 only expecting to see 50 to 100 gallons of flow because my  
9 thought was they were only going to throttle open the  
10 discharge valve, so I wasn't expecting to see the delta flow  
11 timers come in at all.

12 MR. JORDAN: Okay.

13 MR. EMERY: So when they did come in I attempted  
14 to reduce the system flow with the controls that I had --

15 MR. JORDAN: To reduce which flow? How were you  
16 doing that?

17 MR. EMERY: There is a valve, WCS-MOV-110 that we  
18 were throttling with and it was throttled open and I was at,  
19 that's a bypass around your filter demins. I was trying to  
20 throttle close on that.

21 MR. JORDAN: What's the number of the valve  
22 again?

23 MR. EMERY: WCS-MOV-110.

24 MR. JORDAN: And that is the bypass around the--

25 MR. EMERY: Filter demins.



1 MR. JORDAN: Okay, so you were trying to close  
2 down on that?

3 MR. EMERY: Correct.

4 MR. JORDAN: To reduce the total flow?

5 MR. EMERY: Correct.

6 MR. CONTE: What's your familiarity with the RHR  
7 water hammer, other than hearsay?

8 MR. EMERY: I was on one end of the control room  
9 and this evolution that was going on was on the 601 panel on  
10 the other end and to be honest I don't even know who  
11 reported it, whether it was mechanics or operators or who  
12 did report it.

13 MR. CONTE: Back on reactor water cleanup, are you  
14 willing to say at this point that there is something wrong  
15 with the procedure that gave the water hammer, or you just  
16 don't know?

17 MR. EMERY: I don't want to say because I am --  
18 because I had never tried putting it in, putting it on line  
19 at that particular point and because part of the procedure  
20 that I was using turned out to be part of the startup  
21 procedure.

22 I don't want to say it was truly a procedural  
23 question but other than the fact that we either need to  
24 decide whether, yes, that was the right section, no it  
25 wasn't the right section, if it wasn't the right section



1 what should have been the right section, and I passed all  
2 that on to the people doing this.

3 MR. CONTE: Did you give them the specific section  
4 that you were in?

5 MR. EMERY: Yes.

6 MR. CONTE: But you can't remember it right now?

7 MR. EMERY: Other than it was H and I can't  
8 remember the number of it, no.

9 MR. CONTE: It was in the off-normal?

10 MR. EMERY: It was in the off-normal section, yes.

11 MR. JORDAN: You were in H, not E.4?

12 MR. EMERY: That's where I started off was in the  
13 off-normal. The system that they prior to the procedure I  
14 ended up following was this E.4.

15 MR. JORDAN: E.4?

16 MR. EMERY: Yes.

17 MR. JORDAN: But you started out in the H, in the  
18 abnormal and it eventually led you into the E.4?

19 MR. EMERY: Right.

20 MR. JORDAN: The direction to the people in the  
21 plant on the discharge valve, is that something you gave  
22 them direction or they just had a procedure themselves out  
23 at the plant?

24 MR. EMERY: They took a copy of the procedure and  
25 had it with them.





1 MR. JORDAN: Okay. So they knew that they were  
2 supposed to be out there operating the valves and you were  
3 in the control room operating the valves?

4 MR. EMERY: Right.

5 MR. JORDAN: And the first report that you had  
6 that this discharge valve --

7 MR. CONTE: Have any discharge valve number? You  
8 don't remember that number?

9 MR. EMERY: 37 Bravo, I believe, V-37 Bravo. It's  
10 a manual valve.

11 MR. JORDAN: Okay. The first indication that you  
12 had to that that valve was any position at all was it was  
13 almost full open.

14 MR. EMERY: Well, this was subsequent to the  
15 event. At the time I either -- they may have been trying to  
16 contact me via the radio, which at the time I was dealing  
17 with the delta flow timers and whether they were trying to  
18 tell me that we were opening up the valve I don't remember.

19 MR. JORDAN: Who reported the water hammer?

20 How did you hear about the water hammer?

21 MR. EMERY: My team operators. It was -- what  
22 else had to be done was because the pump had been shut down  
23 for greater than 30 minutes we were supposed to vent the  
24 system and the team of operators up in the heat exchanger  
25 room was going to be performing the venting and that is



1 where they reported the water hammer.

2 MR. CONTE: Our notes here on the listing of  
3 functions of people says DW Cooling against your name. Were  
4 you involved in the drywell cooling?

5 MR. EMERY: Yes. That is right.

6 MR. CONTE: At what time?

7 MR. EMERY: This was fairly early. It was even  
8 before I took over RCIC control. I went back to the panel  
9 where drywell unit coolers are located with the Assistant  
10 SSS wanted to see if we could restore drywell unit coolers.  
11 The fan motors had tripped.

12 I attempted to -- we placed the overrides switches  
13 for the fan motors in the override and attempted to start  
14 the fans and they would not start.

15 MR. CONTE: Do you know why they tripped as a  
16 result of hindsight on this event? Is there something that  
17 drywell cooling has to do with the UPS power supplies that  
18 were lost?

19 [Pause.]

20 MR. CONTE: This isn't an exam. If you can  
21 recall, fine.

22 MR. EMERY: I don't, other than the ASSS mentioned  
23 that he was testing -- he wanted to see if they would start  
24 to see if we had DC control power.

25 MR. CONTE: That's what starts those fans, DC



1 control power on the breakers?

2 MR. EMERY: Yes.

3 MR. CONTE: And do you know what panels? I assume  
4 they are non-safety systems even though they are in the  
5 drywell.

6 MR. EMERY: Right, they are.

7 MR. CONTE: Where do they get their power --  
8 besides the DC control power?

9 MR. EMERY: Their main power is from the USS 5  
10 and 6 VSM 600 volt motor control centers 11 and 12.

11 MR. CONTE: USS 5 and 6, motor control centers 11  
12 and 12?

13 MR. EMERY: Right.

14 MR. JORDAN: In light of what you know of the UPS  
15 power supply's being out, is it normal -- is this an  
16 unexpected thing, that drywell cooling tripped?

17 MR. EMERY: Well, based on, without doing a  
18 examination of the prints I thought it was abnormal that  
19 they were tripped. Let's put it this way, when I walked in  
20 the control room and he said let's go back here and start  
21 the fans up, it kind of surprised me that they were tripped  
22 but that was so fast into the event I didn't even know what  
23 had transpired where the initiating event or anything at  
24 this point. This was more or less we walked in and he kind  
25 of grabbed me and said let's go back here and try and start



1 those.

2 MR. CONTE: Okay. I don't have any other question.

3 MR. JORDAN: I just have got one more question and  
4 it may be on the transcript, I just missed it.

5 What is your position normally on the shift?

6 MR. EMERY: Well, I am a reactor operator.

7 MR. JORDAN: Do you normally operate in the  
8 control room? Do you operate in the plant? Are you a CSO?

9 MR. EMERY: No. I am what they call an E  
10 operator. I don't know if you have heard that term.

11 MR. JORDAN: An E operator?

12 MR. EMERY: An E operator, right.

13 MR. JORDAN: So what --

14 MR. EMERY: We operate both in the control room  
15 and out in the plant.

16 MR. JORDAN: Okay.

17 MR. EMERY: We are the licensed people.

18 MR. JORDAN: Okay. Are you assigned one or the  
19 other position or do you operate in both or --

20 MR. EMERY: On a shift basis we are assigned  
21 either the control room or the plant. That particular day I  
22 was assigned to the control room.

23 MR. JORDAN: You were assigned to the control  
24 room?

25 MR. EMERY: Correct.





1           MR. JORDAN: Okay, so you went on relief. You  
2 were on the normal shift?

3           MR. EMERY: I was on the oncoming shift.

4           MR. JORDAN: Oncoming shift and your normal  
5 position in an oncoming shift was going to be the control  
6 room E operator?

7           MR. EMERY: Correct.

8           MR. JORDAN: That's all I want to know. Thank  
9 you.

10          MR. CONTE: We can go off the record.

11                 [Whereupon, at 4:42 p.m., the taking of the  
12 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

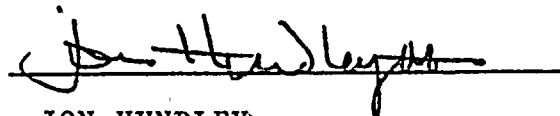
in the matter of:

NAME OF PROCEEDING: Int. of JAMES EMERY

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.

