

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

1 In the Matter of:  
2 IE TMI INVESTIGATION INTERVIEW  
3 of  
4 Mark S. Coleman  
5 Control Room Operator  
6  
7  
8

9 Trailer #203  
10 NRC Investigation Site  
11 TMI Nuclear Power Plant  
12 Middletown, Pennsylvania

13 May 19, 1979  
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22 NRC PERSONNEL:  
23 Anthony N. Fasano  
24 James S. Creswell  
25 Owen C. Shackleton  
Mark E. Resner

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1        RESNER: The following is an interview of Mr. Mark S. Coleman. Mr.  
2 Coleman is employed with the Metropolitan Edison Company at Three Mile  
3 Island Facility and he is a Control Room Operator. The present time is  
4 11:17 p.m., EDT, and today's date is May 19, 1979. This interview is  
5 being conducted in trailer 203 which is located just outside the south  
6 gate to the TMI facility. The individuals present for this interview  
7 representing the Nuclear Regulatory Commission are Mr. Anthony N.  
8 Fasano. Mr. Fasano is an Inspection Specialist with Region I. Also  
9 present are Mr. James Creswell. Mr. Creswell is a Reactor Inspector  
10 with Region III of the Nuclear Regulatory Commission. Also present is  
11 Mr. Owen C. Shackleton. Mr. Shackleton is an Investigator assigned to  
12 Region V of the US Nuclear Regulatory Commission. Moderating this  
13 interview is myself, Mark E. Resner, and I am an investigator with the  
14 Office of Inspector and Auditor Headquarters, Nuclear Regulatory  
15 Commission. Prior to taking this interview, Mr. Coleman was given a  
16 two page document which explained the purpose, the scope and the authority  
17 with which the Nuclear Regulatory Commission was given to conduct this  
18 investigation in addition it apprised him of the fact that he is entitled  
19 to a representative of his choice should he want one present during the  
20 interview and also advised him that in no way is he compelled to talk  
21 to us should he not want to. On the second page of this document Mr.  
22 Coleman has answered three questions which I will state for the record.

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1 RESNER: No. 1, do you understand the above? Mr. Coleman has checked  
2 yes. Is that correct Mr. Coleman?  
3

4 COLEMAN: Yes sir.  
5

6 RESNER: Question 2, do we have your permission to tape the interview?  
7 Mr. Coleman has checked yes, is that correct?  
8

9 COLEMAN: Yes sir.  
10

11 RESNER: Question 3. Do you want a copy of the tapes, Mr. Coleman has  
12 also checked yes. Is that correct?  
13

14 COLEMAN: Yes sir.  
15

16 RESNER: Okay we will provide you with a copy of the tape at the con-  
17 clusion of the interview. If Mr. Coleman will please do so for the  
18 record, briefly state your job experience and educational experience in  
19 the nuclear industry.  
20

21 COLEMAN: My work in the nuclear industry started out with the Navy  
22 Nuclear Program and I served aboard the USS Bainbridge for 4 years. I  
23 was in the Navy for 6 years. After that I started to work for Metro-  
24  
25

1 politan Edison as a auxiliary operator A and I did that for three years  
2 and I bid the job for Unit 2 control room operator and that is what  
3 I've been doing since?  
4

5 RESNER: Okay thank you very much Mark. At this time we will turn the  
6 interview over to Mr. Creswell and ask questions.  
7

8 CRESWELL: Mark, I would like to, if I could, take you back to the date  
9 of March 28, 1979 and could you tell us what time you came on shift and  
10 what you found when you came on shift?  
11

12 COLEMAN: Well, I was walking through Unit 1 turbine building, it was,  
13 Wednesday morning of the 28th the first day of the incident. I'd just  
14 been off I was down in Lynchburg for the week and four days off and as  
15 I was walking through Unit 1 turbine building from the parking lot the  
16 radiation emergency alarm went off. Proceeding in the corridor between  
17 Unit 1 and Unit 2, Dick Dubiel the Radiation Supervisor ran me over  
18 practically and I went up to the control room. When I got up there  
19 there was a lot I could see you know the radiation monitoring system  
20 had quite a few alarms and alerts and alarm conditions and I could also  
21 see that there was a lot of interest being taken in the side of the  
22 control room where panel 3 and 4 meet which is like the makeup tank and  
23 the pressurizer level and all those. A lot of interest in those areas  
24 and four or five guys were standing around there and I said well,  
25

1 something big is going on here I could tell when I came in here that  
2 the plant was down because the cooling towers were not making any steam  
3 and I thought to myself and Earl Hemmlia who was with me or beside me I  
4 think it was Earl Hemmila I said to him, "Well, a lot of action going  
5 on up there and since I don't know what is going on, I'd better just  
6 stay back." And basically that is what I did I stood behind the yellow  
7 line and I did not offer any support or do anything they told me to do  
8 and at that time they told me to get on the telephones and start manning  
9 the communications for the to the ECS the ECCS the radiation emergency  
10 control center. And then I did that for a few minutes and then one of  
11 the aux operators took over from that and til about the middle of the  
12 day sometime that's all I did all day was answer telephones.

13  
14 CRESWELL: Mark, what time did you come onsite?

15  
16 COLEMAN: I figure I got in the control room just a few minutes before  
17 seven, you know, like five or ten minutes before 7.

18  
19 CRESWELL: Okay what time - which gate did you arrive at?

20  
21 COLEMAN: I came in the north gate.

22  
23 CRESWELL: What time would you say you went through there?  
24  
25

1 COLEMAN: Five or 10 minutes before that.

2  
3 CRESWELL: What did you find when you went to the north gate, what were  
4 the conditions that you found?

5  
6 COLEMAN: At the north gate itself nothing unusual.

7  
8 CRESWELL: So you just walked right on in just like you normally would?

9  
10 COLEMAN: Yes sir.

11  
12 CRESWELL: From there did you go down to the processing center?

13  
14 COLEMAN: Yes, well I didn't walk through the north gate, I drove  
15 through.

16  
17 CRESWELL: You drove your car in.

18  
19 COLEMAN: What did you find when you got to the processing center?

20  
21 CRESWELL: I don't recall anything unusual. I hadn't thought that  
22 anything was unusual until I heard the radiation emergency alarm.

23  
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1 COLEMAN: Okay and that was while you were walking through the Unit 1  
2 turbine building?

3  
4 CRESWELL: Yes right about where I was pass the vacuum pumps.  
5

6 COLEMAN: Okay and, this was about the time that Mr. Dubiel came running  
7 back?

8  
9 COLEMAN: Yes.  
10

11 CRESWELL: Did he say anything to you as he passed?  
12

13 COLEMAN: No.  
14

15 CRESWELL: So then you walked on up to the Unit 2 control room?  
16

17 COLEMAN: Cause I remember an announcement being made but I couldn't  
18 hear it because it was noisy there. You know -- what's that? You  
19 know. So I just proceeded on to my regular working station. I figured  
20 that's where I'd be best needed anyway.  
21

22 CRESWELL: Did you pass anybody else on the way up to the Control Room?  
23  
24  
25

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1 COLEMAN: No I did not. Except the guard at the door there, well I  
2 don't even remember that. There had to be a guard there. There always  
3 was.

4  
5 CRESWELL: Did you pick up a dosimeter before you, a TLD before you  
6 went up into the control room?

7  
8 COLEMAN: Well, there was a processing center they were always there  
9 and I had kept mine there.

10  
11 CRESWELL: Did you secure one that day?

12  
13 COLEMAN: Yes I was, a TLD, I did.

14  
15 CRESWELL: A TLD. So whenever you got up in the control room, did you  
16 walk by the shift engineer's office on your way into the control room.  
17 What I am saying is there's a glass window --

18  
19 COLEMAN: I didn't go past that window, I went in the first door to the  
20 right after you get up the steps which is on the right of the control  
21 room.

22  
23 CRESWELL: Whenever you entered the control room what sort of picture  
24 did you see?



1 COLEMAN: Well there were a lot of people over by the like I said there  
2 was a radiation monitoring alarms lights were on, I could see that and  
3 there were a lot of alarms going off and stuff and there was a lot of  
4 interest being generated in that corner of the control room, by the  
5 control panels. It's about that's all that strikes my memory right now  
6 is the picture.

7  
8 CRESWELL: About how many people were there in the control room at that  
9 point in time?

10  
11 COLEMAN: Six or seven.

12  
13 CRESWELL: Six or seven? And most of these people were gathering  
14 around the radiation monitor?

15  
16 COLEMAN: Well, no this was not the radiation monitor. They were in  
17 front of the panel where the pressurizer level and makeup system were.

18  
19 CRESWELL: I see. Did you overhear any discussions that they were  
20 having?

21  
22 COLEMAN: No not really. I couldn't hear what they were saying. They  
23 weren't screaming at one another or anything.  
24  
25

1 CRESWELL: So then I believe you said you just went back behind the  
2 yellow line and observed.  
3

4 COLEMAN: Well, I never crossed the yellow line. I could see I had no  
5 business up there because there was nothing I could add, you know,  
6 there were enough hands in there already.  
7

8 CRESWELL: Did you report to anyone in the control room?  
9

10 COLEMAN: No I didn't.  
11

12 CRESWELL: Did you go up and talk to anybody?  
13

14 COLEMAN: Well, I talked to the guy I think it was Earl Hemmila I can't  
15 even remember exactly who it was I mentioned to him do you know what is  
16 going on and that is about the gist of what happened.  
17

18 CRESWELL: What did Mr. Hemmila say to you?  
19

20 COLEMAN: I don't remember.  
21

22 CRESWELL: Well, you didn't report to a supervisor or anybody like  
23 that?  
24  
25

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1 COLEMAN: Well the shift supervisor if I remember right, Bill Zewe was  
2 up along the panel. I did not want to bother him. We normally don't  
3 report to anybody when we come to work. You know you walk past the  
4 foreman's desk, he is there, you say hi. That is about it. You know,  
5 there's no actual reporting.  
6

7 CRESWELL: Do you get any assignments from your shift supervisor.  
8 Shift foreman usually?  
9

10 COLEMAN: Normally? Well what we do is they let it up to us. Now we  
11 got three CROs on our shift and we kind of just kind of go on rotation  
12 one will take surveillance, the other takes switching and tagging and  
13 the other will take the panel. We just kind of remember which rotation  
14 we are in and say who's next. You just automatically go to that posi-  
15 tion and then later on when everything's kind of settled out a little  
16 bit the foreman will come out with some jobs and tell us "we have got  
17 to get this done today or something like that."  
18

19 CRESWELL: Is there any kind of turnover that is done between the  
20 operators?  
21

22 COLEMAN: Well switching and tagging usually, there is only, you know,  
23 like if there is a switching order or something going on and sometimes  
24 I try to tell them basically what is happening in the plant and I get  
25

1 poo-pooed like that like switching the tag and doesn't want to get  
2 involved. And then a guy takes the panel, he usually gets everything,  
3 and all the information he can and there is supposed to be a written  
4 turnover, handwritten. And the guy on surveillance he usually takes,  
5 if there's any surveillance in progress or anything he will take the  
6 information on that.

7  
8 CRESWELL: I see. Well do you feel a certain amount of laxity in  
9 communicating the information about the status of the plant when there  
10 is a shift turnover?

11  
12 COLEMAN: A lot of times it has to do with who you relieve. You know  
13 personal people have different ideas what is important and there is no  
14 real. Well there is a guidelines, there's a guideline that tells you  
15 exactly what you are supposed to do for a turnover.

16  
17 CRESWELL: What is that guideline?

18  
19 COLEMAN: It is an administrative procedure, I don't remember what it  
20 is. I can't even remember the title. I could find it if I wanted  
21 it's, and it seems to be fairly individual, you know, some people, you  
22 know, they seem to take a so so attitude about turnovers and others get  
23 hyper about it. A lot of it has to do with how soon, or how early you  
24 come in.

1 CRESWELL: If you come in early you get a good turnover?  
2

3 COLEMAN: Frequently. Stay a minute and ask a couple of questions and  
4 all that. If you come in last minute, then your turnover won't be as  
5 good because the other guy he is on his own time then, you know.  
6

7 CRESWELL: Do you ever recollect a shift foreman or shift supervisor  
8 making sure that you get a good turnover?  
9

10 COLEMAN: Well my shift supervisor, he is kind of what you would call a  
11 volatile personality. And he says he demands a written turnover from  
12 us and that we are supposed to demand one from our people we relieve  
13 from. Um, their shift supervisor isn't that volatile always about  
14 those things so I can't push another man into forcing him to give me a  
15 good turnover. There are ways I guess but you'd be jerk.  
16

17 CRESWELL: I notice that there are some boards up in the control room  
18 that give a certain status on different systems and so forth. Do you  
19 operators usually look at those boards?  
20

21 COLEMAN: Um, they always give the panel at least a glance. You know,  
22 look at maybe one or two alarms that, your pat ones, there is no real  
23 guideline on that.  
24  
25

1 CRESWELL: If you were like on the aux feedwater station, would you  
2 look at the lineup of the valves on the, I am sorry, the emergency  
3 feedwater station or you are assigned to the feedwater station, would  
4 you look at the valve line ups?

5  
6 COLEMAN: I am afraid I am fairly lax in that particular area. You  
7 have a lot of, you know, if you get a good turnover or anything, there's  
8 a lot of information to disseminate, and at first if at all during the  
9 shift, I won't look at the emergency system. I say, well, you've checked  
10 them ever so often for surveillance and people ain't supposed to put  
11 their fingers on or mess with them. Right? I figure they should be the  
12 way they ought to be.

13  
14 CRESWELL: Well, during this event here seems like those valves were  
15 closed. Do you have any idea on how those valves got closed?

16  
17 COLEMAN: I haven't the slightest idea.

18  
19 CRESWELL: Okay. Well, let's go back to what you were doing on the  
20 morning of the 28th and you had just gotten through talking to one of  
21 your fellow operators, you were asking him what is going on, and you  
22 don't recollect what he said and they what happens next?

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COLEMAN: Well, this aux operator took the ECCS phones from me and he was talking to the HP people on the other end and then my job was just to communicate with whatever phone came on, you know, whatever ringing, I answered it and try to help out, disseminate information. I remember a couple of guys later on in the day, you know, there was some kinds of news reports about it and a couple of guys other operators were calling in, saying what is going on, you know. I'd give them a little bit of the story saying I can't hang on or I can't hold the phone too long and little bit everybody Herbein called about a million times, wanted to talk to Gary Miller and I remember early in the morning sometime or later Gary Miller had taken over the control room and some, there was always somebody wanting to talk to him and he had four phones in his hand, you know. Communications are a little much to try to handle and that is basically what I did. Herbein screaming for Miller and everybody else screaming for Miller and or they wanted to talk to Seelinger or Dubiel or somebody. And that is all I was doing, answering phones.

18  
19  
20  
21  
CRESWELL: I see. At any time during that morning, did you receive any direction from a shift foreman, shift supervisor or anybody in management as to what you were supposed to do?

22  
23  
24  
25  
COLEMAN: Well Jim Seelinger, I think it was Jim Seelinger. One of the first you know like upper level guys away from the shift supervisor. The shift supervisor was involved basically in trying to stabilize the

1 plant. At least that is where I remember things as and then like Jim  
2 Seelinger was there and he took control basically. You know he was  
3 running the whole show at the beginning and he told me basically that  
4 is what he wanted me to do. You know, take phone calls.  
5

6 CRESWELL: Now did you mainly just answer the telephone and say like if  
7 it was Mr. Herbein, you say to Gary Miller "Mr. Herbein is on the  
8 line." Or did you would relay messages back and forth?  
9

10 COLEMAN: Well whatever, you know, it was six of one, a half a dozen of  
11 the other. You know, for something that I could do, or immediate  
12 information I could provide, I would do that but you know--  
13

14 CRESWELL: Do you recollect what any of those messages were?  
15

16 COLEMAN: You mean to these other people? Usually if it was between  
17 management it was something like: "Give me call." "Get to me right  
18 away." You know, it wasn't too much direction type calls.  
19

20 CRESWELL: Okay, if you were talking to somebody else, like in the  
21 emergency control center, do you remember what the nature of some of  
22 those telephone calls were?  
23

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25



1  
2 COLEMAN: No, I don't.

3  
4 CRESWELL: You mentioned that you got some data for some people, or  
5 some information from the...

6  
7 COLEMAN: Well, I know that, if it was something that I knew I would  
8 not bother somebody. You know if I knew that that was the truth or the  
9 facts or something like that, I would not bother anybody if was just a  
10 little bit of information they needed. You know, I tried to at least  
11 sort out of some of it so Gary Miller would not be on the phone all  
12 day, you know.

13  
14 CRESWELL: Okay, but you can't recollect any of those conversations  
15 that you had? Were there any major operations that went on in the  
16 control room that you remember?

17  
18 COLEMAN: Well, if you give me time or dates or something like that, I  
19 couldn't tell you, you know, three minutes after two or something, I  
20 couldn't tell you that. One thing I remember is early in the morning  
21 they were trying to depressurize to get core flood to go. I remember  
22 that distinctly. I thought to myself, you know, they got it and I  
23 didn't want to offer anything, all the big engineers and stuff were  
24 there and I thought it would be best for me not to even suggest anything  
25 because you know they have more, sometimes, more experience, a lot more

1 education and I didn't think they would take my advice anyway, if I  
2 offered anything, so I kind of kept to myself as far as that kind of  
3 thing.

4  
5 CRESWELL: Okay, during the period of time that they were depressurizing  
6 to get the core flood tanks to go, what do you remember about that?

7  
8 COLEMAN: Well, I remember that they couldn't get the pressure down and  
9 at sometime along the way, I don't know whether it was that day or the  
10 next day, I had actually gone down to the SFAS actuation cabinets where  
11 you would bypass, not bypass, but there is a 320 lb interlock on DHB 1,  
12 2 and 3. I don't know if that was the next day, that day, or whatever  
13 they thought maybe it would try to get decay heat on but I don't think  
14 it was that day no. When they went to core flood, they couldn't get  
15 the pressure down, I know that. And they couldn't get pressure down  
16 when they tried to get decay heat on it. I thought maybe, if they  
17 could get decay heat on, they could help cool it down better.

18  
19 CRESWELL: Why couldn't they get the pressure down?

20  
21 COLEMAN: Well, they would go to get the pressure down and pressurizer  
22 level would start to go up, if I remember rightly. And then a lot of  
23 people scratchin' heads over that one, and they didn't know what to  
24 think of it. But they knew if they kept the pressure up, or they  
25

1 couldn't get the pressure down, they knew they couldn't go on decay  
2 heat. And they didn't get no core. I don't, they got a little core  
3 flood in, if I remember rightly, but it wasn't all, like a couple of  
4 feet in one tank and hardly moved the other. When those things happened,  
5 I can't tell you if it was the first day or the third day or what.  
6

7 CRESWELL: Okay you mentioned that sometime you went down to the SPAS  
8 panels. Where are they located?  
9

10 COLEMAN: They are in the level below the control room in the cable  
11 room.  
12

13 CRESWELL: Cable spreading room?  
14

15 COLEMAN: Yes, the relay room, whatever you want to call it.  
16

17 CRESWELL: You were talking about some sort of 320 lb interlock on the  
18 certain valve.  
19

20 COLEMAN: On the decay heat valves 1 and 2 and 171 which is the same.  
21

22 CRESWELL: What sort of manipulations did you do down at those panels?  
23  
24  
25

1 COLEMAN: I never got that far. I knew it would not reach that. I  
2 have to look at the panel, and then I can tell you how it would be  
3 done. It is just a movement of one little switch, and it takes, it  
4 allows a valve to be open, basically.  
5

6 CRESWELL: Okay, what would a switch do if you threw the switch?  
7

8 COLEMAN: What it does is if you are above 320 lbs, those valves are  
9 supposed to be shut to protect the decay heat system from overpres-  
10 surization.  
11

12 CRESWELL: Okay.  
13

14 COLEMAN: Now, if you go below 320 lbs, it is still locked in and you  
15 have to, I am not sure how the machine goes about. It but you unlock it  
16 by pushing this reset.  
17

18 CRESWELL: So everytime you go to cold shutdown somebody has to go down  
19 and flip the switch.  
20

21 COLEMAN: That is true.  
22

23 CRESWELL: So that is something that you would ordinarily do on an  
24 operation?  
25

1 COLEMAN: That is right.  
2

3 CRESWELL: Going onto cold shutdown. Did you participate in any other  
4 manipulation of equipment that you recall?  
5

6 COLEMAN: On the first day?  
7

8 CRESWELL: Yes.  
9

10 COLEMAN: Well, they said about 2 days into this thing, we had to write  
11 down what we remember and that's all I can remember. Um...  
12

13 CRESWELL: This is Jim Creswell speaking. Mark has a single page of  
14 notebook paper here where he has copied down some notes.  
15

16 COLEMAN: Well, I have the wrong dates on it so I don't know what  
17 credence this leads to this, but the first day is 3/27 and that's  
18 obviously confused, but at 1300 on the first day, I was told by...I  
19 think it was...Joe Chwastyk to feed up B feed steam generator. Let me  
20 see here, yes, with emergency feed pump 2B. Then I went back to answer  
21 the phones again.  
22

23 CRESWELL: You did feed it up?  
24  
25

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1 COLEMAN: Yes I fed it up to 95% on the operating range.  
2

3 CRESWELL: Okay.  
4

5 COLEMAN: And then at 1800, sometime between 1300 and 1800, we relieved  
6 a crew that was originally on, and I think I took the actual my name  
7 was in the book. And what we tried to do then, was at 1800, we commenced  
8 feeding the RCS to attempt to go solid and we filled the RCS from the  
9 BWST to 2300 lbs.  
10

11 CRESWELL: Is that with the high pressure injection?  
12

13 COLEMAN: Yes, with the makeup pump. I don't remember whether we had A  
14 or B or what we had and at 1900, it says here at approximately 1900, I  
15 was relieved by Ted Illjes, who was, I guess, my standard relief for  
16 that day. And that is the end of my work for that first day.  
17

18 CRESWELL: Okay, do you have any other notes on that paper besides...?  
19

20 COLEMAN: Well, it says that on the next day, which I have labeled as  
21 the 28th. I think it was more like the 29th at 7:00, I came in and  
22 found 1 AR reactor coolant pump was on and there was a vacuum in the  
23 condenser and they were steaming A steam generator, had just a slight  
24 cooldown in progress, and TC was at 280 degrees. Then things looked  
25

1 pretty calm to me at the time, so then I noted down here that I proceeded  
2 to put away procedures and generally straighten out the control room,  
3 you know, it was such a big clutter and mess, I knew you couldn't do  
4 nothing with that so I think I had switched to tagging that day so I  
5 thought, well, I will get this straightened out here so it seemed like  
6 everything was going to kind of level out and stabilize and stay, you  
7 know. It seemed like we had a good handle on everything. That's, if  
8 you want to look at it.

9  
10 CRESWELL: So at 1800 you assumed the controls from which station?

11  
12 COLEMAN: Well, I basically took makeup and purification and pressurizer  
13 controls.

14  
15 CRESWELL: I see.

16  
17 COLEMAN: And that is what they said to do. Fill her up and try to go  
18 solid. And we were going, we were at 2300 lbs, and it sure did not  
19 look like it was solid. I have seen solid before in my previous em-  
20 ployment, because we did some, I know, about five times solid plant  
21 operations. I know what it looks like.

22  
23 CRESWELL: That is five times here at TMI?  
24  
25

1 COLEMAN: No at my previous employment in the Navy.  
2

3 CRESWELL: OH.  
4

5 COLEMAN: We had done that for some reasons. I don't remember what all  
6 they were.  
7

8 CRESWELL: Have you ever been associated with an event like this in  
9 TMI? Something, any kind of event similar to this?  
10

11 COLEMAN: Similar to this, you mean like...  
12

13 CRESWELL: Loss of feedwater types of events.  
14

15 COLEMAN: Well, when we were starting up, one of the first times, we  
16 had a loss of feed because the man thought he still had the blowdown  
17 condensate pump suction stringers and the pump tried to pump air. It  
18 was different and we lost feed at about a very low power level. It was  
19 like 15 percent or less. And I remember that one fairly well. I am  
20 trying to think of what I was doing that day. I can't even remember  
21 what position I was in or whether I was just on relief and backing  
22 somebody up.  
23  
24  
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4  
CRESWELL: Okay. Let's go back to about 1300. That is when you started  
the emergency feed pump 2B and filled once through the steam generator.  
Who was directing your activities when you did this?

5  
6  
7  
COLEMAN: Well Joe Chwastyk, I remember it as being Joe Chwastyk telling  
me to do it. He basically told me what he wanted and I did it.

8  
9  
CRESWELL: About how long did it take you to do that?

10  
11  
COLEMAN: I don't even remember.

12  
13  
14  
CRESWELL: And when you got finished, somebody told you to go back and  
listen to the telephones again?

15  
16  
COLEMAN: Yes.

17  
18  
19  
20  
CRESWELL: Okay about six o'clock in the afternoon, you assumed control  
of the makeup panel, uh, and you attempted to go solid. Who was directing  
your activities then?

21  
22  
COLEMAN: Joe Chwastyk. Breathing right down my neck.

23  
24  
25  
CRESWELL: About how many people were there around the panels? When I  
say panels, that is beyond the line that you mentioned earlier.

1 COLEMAN: The yellow line.  
2

3 CRESWELL: The yellow line.  
4

5 COLEMAN: Oh, there was only about 3-4 of us and maybe, you know, right  
6 at the panels, and there may have been 2-3 other people behind me  
7 writing things down or just watching or taking notes or supervising in  
8 one way or the other. I don't remember from time to time, our place  
9 was elbow-to-elbow people during the day.  
10

11 CRESWELL: Is that in front of the yellow line?  
12

13 COLEMAN: No, behind the yellow line, it got so bad that din would be  
14 so loud that you could hardly hear what you were doing.  
15

16 CRESWELL: Did anybody ever attempt to clear the control room of un-  
17 necessary personnel?  
18

19 COLEMAN: Uh, yes, a couple of times everybody was told to be at least  
20 try to be quiet, and then they were always told unnecessary personnel,  
21 but everybody I guess thought they were necessary, nobody hardly left.  
22

23 CRESWELL: Okay. Did you put a respirator on any time during the day?  
24  
25

1  
2  
3  
4  
COLEMAN: I remember wearing a half-face respirator for a goodly portion  
of the day. But when we put it on, and whenever we took them off, I  
don't remember.

5  
6  
CRESWELL: Did that make communications difficult on the telephone?

7  
8  
9  
10  
11  
COLEMAN: Well, I knew I couldn't talk on the telephone with that thing  
too well, so whenever I had to talk to someone on the phone, I just  
picked the mask up a little bit and talked then. But then I would keep  
most of my breathing through the respirator anyway.

12  
13  
14  
CRESWELL: So how much time would you estimate that you were off the  
respirator while you were answering these telephones.

15  
16  
COLEMAN: During the whole day? Not more than 10 minutes.

17  
18  
CRESWELL: Okay what happens when ever you were relieved at 1900?

19  
20  
21  
22  
23  
24  
25  
COLEMAN: I tried to go home. I remember having great difficulty  
getting out of here but other than that... Oh, yeah, I had to go over  
to the Observation Center and get frisked and I don't remember whether  
I got frisked on the way out, or which way they sent me out of here, or  
anything that day. So many things changed since then you don't know  
which way you are going. But I do remember I had to wait a while

1 because my clothing had some contamination on it. It could be measured  
2 by the frisker and they said, you want to just wait a little while and  
3 it will go away. And I believed that. If there was short-lived stuff  
4 there, I expect it did either that or it is over the Observation Center  
5 somewhere.

6  
7 CRESWELL: You can't recall whether you were frisked onsite before you  
8 left?

9  
10 COLEMAN: No I cannot recall. I may have well been to atleast frisked  
11 myself.

12  
13 CRESWELL: Did you turn your TLD in at the site ?

14  
15 COLEMAN: Over at the, I remember we were doing that for a while, I  
16 suppose the first day we did yes.

17  
18 SHACKLETON: Mark, were you cleared? Did they frisk you and find that  
19 the contamination had left when they let you go home?

20  
21 COLEMAN: I was the one who was the judge of that. I did my own frisking  
22 and after about an hour of waiting, it was, it didn't, you could see  
23 the meter was deflecting a little more than what the...  
24  
25

894 301

1 CRESWELL: What would be normal?  
2

3 COLEMAN: Yes, the background, but just a slight amount, I didn't feel  
4 there was anything to worry about.  
5

6 SHACKLETON: Was there a health physicist over there while you were  
7 being frisked to counsel you?  
8

9 COLEMAN: There was no health physicist there to counsel me. I don't  
10 remember who all was there. Everybody was there, and everything.  
11

12 CRESWELL: Did that look like a control situation over there, was it  
13 health physics controlled?  
14

15 COLEMAN: No, it was mayhem you might say.  
16

17 FASANO: Was this on do you have any idea where you might have picked  
18 up this contamination?  
19

20 COLEMAN: Well the control room during the day did have some like  
21 something in the air or we would not have had masks on. I expect maybe  
22 a little bit would have gotten on my clothing. Um, other than that, I  
23 was not anywhere, except down in,...if that was the day that I was down  
24 in the relay room...you know, I might have picked it up going down  
25

1 there, but the control building was not too bad that day. In fact, they  
2 said the levels for wearing the respirators were less than MPC, but  
3 they were getting near, so they wanted to be careful basically.  
4

5 FASANO: So essentially the only place you might have been down where  
6 the decay heat interlock was.  
7

8 COLEMAN: Yes down in the relay room.  
9

10 FASANO: When you start you said you were going back to Lynchburg, was  
11 that training?  
12

13 COLEMAN: Yes, we had a yearly, I guess it's yearly now week of Lynchburg  
14 casualty training.  
15

16 FASANO: Does this include the simulator?  
17

18 COLEMAN: Yes, the simulator, it is like in the morning you will go in  
19 and in the afternoon they will give you lessons on design. Basically  
20 how they came about their designs and seems sometimes like it is sell,  
21 like, they are trying to sell me a reactor, you know.  
22  
23  
24  
25

894 303

1 FASANO: Okay then the training that you were getting was B&W training  
2 at Lynchburg for a B&W plant.  
3

4 COLEMAN: Um hum.  
5

6 FASANO: How about training that you get here, I mean the training  
7 specifically in transients. I mean do you look at your past history?  
8 You mentioned that you were here when you'd had another feedwater loss  
9 of feedwater. Do you go over the transient, and look at it...?  
10

11 COLEMAN: The most you might see, like in this instance, you might see  
12 some of the information that people were compiling to understand the  
13 transient, something went wrong right and they want to understand it,  
14 and they'll collect the information and they will come up with a scenario,  
15 I guess, and I might see that, but it doesn't come from the training  
16 department, it will come from my shift supervisor.  
17

18 FASANO: So it is not a planned, formal...  
19

20 COLEMAN: No.  
21  
22  
23  
24  
25

894 304

1 CRESWELL: Do you recall, this is Creswell speaking, do you recall ever  
2 seeing any information about a loss of feedwater transient that occurred  
3 in November 1978?  
4

5 COLEMAN: If you can give me some of the...I know there have been some,  
6 more than one feedwater transient in the plant. As for which one that  
7 is, I don't know.  
8

9 CRESWELL: This one, I think they were around 90% power and I believe a  
10 technician instrument technician, was working in a panel down in the  
11 condensation mineralizer area and he maybe hit the wrong switch which  
12 resulted in a loss of feedwater.  
13

14 COLEMAN: It lost power in the panel and the valves went shut. All's I  
15 know from that is word of mouth.  
16

17 CRESWELL: Okay could you go ahead and tell us what you know?  
18

19 COLEMAN: About that particular incident?  
20

21 CRESWELL: Right.  
22

894 305  
23  
24  
25



1 COLEMAN: Well, Butch Norman was, went down there and I don't know what  
2 he was working on or anything, but he was looking for a switch and he  
3 thought was a light switch for the panel and as far as I know it shut  
4 the power valves and that is, it went down from there.  
5

6 CRESWELL: Did you hear anything about how the reactor responded to  
7 that event?  
8

9 COLEMAN: No.  
10

11 CRESWELL: Do you know of anybody that was in the control room at that  
12 time?  
13

14 COLEMAN: No, I couldn't even tell you who had it that night. I remember  
15 it was supposedly being during the night that it happened. I think that  
16 is what it was.  
17

18 CRESWELL: You mentioned earlier that you were told to get the system  
19 solid get the system solid and you said you were doing that, but you  
20 had done it in the past and this did not seem, like I gathered you were  
21 saying, this didn't seem solid to you. Can you explain that?  
22

23 COLEMAN: Well, whenever you are going solid, you will watch your  
24 pressure and the pressure will tend to go up you know.  
25

1 COLEMAN: If you keep charging or making up at a constant rate, your  
2 pressure will come up at a constant rate. When you go solid, it isn't  
3 constant anymore. It starts doing extra exponential type pressure  
4 increases until it gets to a point where, if it is actually solid, it  
5 will be a huge spike change for how much you are putting in. It will  
6 change slope on the pressure chart recorder.  
7

8 RESNER: I think we better break and change the tape at this time. It  
9 is now 11:57 p.m.  
10

11 RESNER: The time is now 11:59 p.m. This is a continuation of the  
12 interview of Mr. Mark Coleman.  
13

14 FASANO: Mark, when you do the surveillance procedures I understand  
15 that the emergency feedwater procedure requires you to close two valves  
16 of the 12 valves. Are you familiar with that procedure?  
17

18 COLEMAN: Only since the accident have I. I don't remember. I may  
19 have done a couple of emergency feed, I know I've done a couple of  
20 emergency feed pump procedures, but I don't remember that those two  
21 valves were in then when I did them. It has been a while since I did  
22 those. And I don't remember what I did them last, but I do remember I  
23 have done some emergency feed pumps surveillances.  
24  
25

894 307

1 FASANO: Well, I understand that, I get the impression that these  
2 valves, the B11's leak and one of the reasons for closing the 12's is  
3 because of this. Do you have any knowledge of that?  
4

5 COLEMAN: I know that we have had trouble in the past when we try to do  
6 an emergency feedwater pump functional. You can never get it to pass  
7 unless, in some way or another, you can keep feedwater from going into  
8 the steam generator. It your discharge area, or DP across the pump  
9 let's see which one it is. You have got too much fluff, and you have  
10 your DP's too great, and you can't get into the.  
11

12 FASANO: So what you do then is to shut your 12s so that you can get  
13 your exit pressure to the point where you can say that you have reached  
14 pressure generation or pressure on the exit of your pump that meets a  
15 certain criteria. And if you have a bypass or leaking valve, then you  
16 would not get that pressure. Is that what you are saying? I mean  
17 that's what it sounds like.  
18

19 COLEMAN: Right. Well we have, I am trying to think of the word ,  
20 there is an acceptable region and they say, okay put it in one of the  
21 acceptable regions, like DP or they usually go by the DP. But that is  
22 easiest to hit and then go look for your flow and then calculate your  
23 flow.  
24  
25

894 308

1 CRESWELL: So if you had flow, you would probably have a lower DP?  
2

3 COLEMAN: Right.  
4

5 FASANO: Okay, these valves probably don't ever seal. In other words, I  
6 am not sure that they are required to seal, so this test you're talking  
7 about may require that you close the 12s, I am not sure. But are you?  
8

9 COLEMAN: I am trying to remember what valves. I don't, I remember  
10 when we did this test last that we didn't, I don't remember exactly in  
11 valve lineup, but I don't remember the 12s being part of it. It may  
12 have been changed since I did it, but I may have shut, I have to think  
13 about it whether it is one of the discharge valves on the pump to the  
14 header but I can't remember in my mind whether that isolates the recirc  
15 or whatever it is. Right now I can't.  
16

17 CRESWELL: Mark, regarding the starting of the makeup pumps, do you  
18 have to do any special electrical lineups on those pumps? Ever have  
19 any problem with electrical lineup getting the pump started?  
20

21 COLEMAN: You mean like a makeup pump?  
22

23 CRESWELL: Yes.  
24  
25

894 309

1 COLEMAN: Depends on what condition. Uh, seems to me like everytime  
2 you know, we got to startup, and if the makeup system would shutdown or  
3 something like that, we always had a little trouble getting things  
4 straightened out just right and I remember, most of my memory comes  
5 from startup when things never worked right. Lately though, in the  
6 last couple of months, makeup pumps have been pretty responsive to your  
7 demands, as long as you remember to hold the switch, the start switch,  
8 for five seconds or something like that.

9  
10 CRESWELL: Why do you do that?

11  
12 COLEMAN: Well, that's, they put a time delay on it so that oil pressure  
13 could get up before the pump would actually start.

14  
15 CRESWELL: You don't recall any problems though with electrical lineups  
16 having to have the proper electrical lineup?

17  
18 COLEMAN: No.

19  
20 CRESWELL: Is there any requirement that if you had a loss of offsite  
21 power and the diesel sequence that you would have to strip one of the  
22 makeup pumps off such that you wouldn't overload the diesel.

23  
24 894 310  
25

1 COLEMAN: The way I understood, that was supposed to occur automatically.

2  
3 CRESWELL: And it is not necessary for you to do anything?

4  
5 COLEMAN: Not to my knowledge?

6  
7 CRESWELL: Okay, I guess that is all I have unless someone else has  
8 questions.

9  
10 RESNER: Tony any further questions?

11  
12 FASANO: No, I think, no I don't think so.

13  
14 SHACKLETON: Mark I'd just like to back up, if I may, to the time you  
15 went over to the observation center and where you were frisked and you  
16 mentioned that you did find some contamination on your clothing, and  
17 during the time between the change at the tape I asked you, and I would  
18 like to repeat the question, you said your clothing was contaminated  
19 somewhat, is that correct?

20  
21 COLEMAN: Yes sir.

22  
23 SHACKLETON: And did anyone, or yourself check the inside of your  
24 vehicle?

1 COLEMAN: No.

2  
3 SHACKLETON: And you drove your vehicle from the Island over to the  
4 observation center, is that correct?

5  
6 COLEMAN: That's right.

7  
8 SHACKLETON: Do you recall, Mark, whether the HP's or any of the rad  
9 techs or any of the Met Ed personnel that were over there, were they  
10 checking vehicles of employees who had been found to be contaminated?

11  
12 COLEMAN: I can't say whether they were or not because I don't know.

13  
14 SHACKLETON: Thank you. Mark, you had a unique position of being  
15 involved in this incident close to when it started, and you've had six  
16 years experience in the Navy plus your time with Met Ed and one of the  
17 things that the U.S. Nuclear Regulatory Commission is always looking  
18 for, of course, was health and safety not only of the American public,  
19 but the men and women who work in these plants. If there are any recom-  
20 mendations that you could make, or observations that you think would be  
21 helpful to other plants, we would appreciate your comments at this  
22 time. You have mentioned, that you observed when you came in the  
23 control room that it was crowded and that you had trouble in communi-  
24 cations.

25  
894 312

1 COLEMAN: Not whenever I entered the control room. It was very sparsely  
2 populated at that time.  
3

4 SHACKLETON: All right  
5

6 COLEMAN: And shortly whenever people started to coming to work, it  
7 started to build up pretty good.  
8

9 SHACKLETON: Please go ahead, if you would, Mark, and if there is  
10 anything you would like to recommend, we would appreciate your comments.  
11

12 COLEMAN: Well, as far as that is concerned, certain things, I think  
13 should have direct indication. I am certain everybody's determined  
14 that by now, and like, we didn't have an emergency feedwater flow, I'd  
15 like to look at flows whenever I if there, is something you know if I  
16 thought the emergency feedwater system should be delivering, you know,  
17 they tell you in the thing at one casuclik like if you have a loss of  
18 feed to one boiler, you are supposed to only feed 300 gallons a minute  
19 or something like that. I don't remember exact number anymore. We  
20 always said, how do you know, well you go by the level increase in the  
21 boiler. But that always seemed to me, you know, operation by inference  
22 or something like that. I think it is what we are doing. Another  
23 things is pressurizer relief valve. We didn't know if it was open or  
24 not, only if it had a signal open. Direct indication is the thing.  
25



1 You have to have direct indication of what you are looking at not have  
2 to devise some other way of figuring out whether something is working  
3 or not. You know, like, indirect indication of some sort. A lot of  
4 times it seems like training is, you know, around here, is self done. I  
5 must admit I am poorly motivated sometimes to take my training very  
6 seriously. I don't know how there is anyway that you could improve on  
7 that, you know, you have to motivate your men somehow or another to  
8 make them want to learn more. Seems like our training department is up  
9 to their necks in paperwork, and they don't really ever get to do  
10 anything who they're really assigned to help which is the operators.  
11 And one thing that seemed to me, I don't know what will happen about  
12 this one, but when we went to start up the first time, I was spoiled by  
13 the Navy. You went to turn a switch and the machine ran, at least the  
14 thing tried to run. And lot of times you had trouble with the breakers,  
15 the thing wouldn't run you had ten thousand interlocks on it, one of  
16 them just not working you could keep the thing from running. And it  
17 just seemed to me like I am spoiled. I like things to run whenever I  
18 need them. Oh, I can't say any specific instance. I think some of our  
19 startup was a little shoddy. You know I could use a lot more indication,  
20 better indication and closer together. I don't think a panel should be  
21 spread out like ours is. You know I like things close up so I can look  
22 like that. I ain't the best operator in the world but, the quicker I  
23 can get the information, the better off I am, and then I can respond.  
24  
25

894 314

1 SHACKLETON: Mark, you talked about training. How do you feel, what  
2 training you had here at this plant worked in being effective in response  
3 to this emergency situation. What would be your overall appraisal of  
4 how the personnel responded to the situation? Do you think you had  
5 proper training for this type of sequence?  
6

7 COLEMAN: You mean like in the plant condition?  
8

9 SHACKLETON: When this transient took place and then, when it was  
10 determined later that it was 3-4 hours into it when you came on an  
11 emergency situation, site emergency I think it was declared somewhere  
12 around 0700 hours, do you feel that your crew was, at the plant, was,  
13 trained well enough. That everybody responded properly? What were  
14 your observations?  
15

16 COLEMAN: Well, for the immediate casualty, I would expect that they  
17 did well. They have a big thing about reactor trip procedure that is  
18 one they try to hammer into everybody's head. What do you do on a  
19 reactor trip? I am certain the their response was proper and adequate.  
20 You know, nobody ever thought about what do you do whenever a safety  
21 system doesn't work. They never teach you that.  
22  
23  
24  
25

894 315

1 SHACKLETON: Mark, you undoubtedly in your years in the Navy, had  
2 experience that appears to be, from your comments, was satisfactory  
3 from the standpoint of the Navy's method of operating reactors and the  
4 response of the equipment. You mentioned when you were at the manu-  
5 facturers' training facility, that the last half of the day was somewhat,  
6 in your opinion, a sales promotion. If you had the money and the power  
7 and the decision making, would you buy this type of reactor?  
8

9 COLEMAN: What do you mean, a Babcock & Wilcox, pressurizer water?  
10

11 SHACKLETON: Well, the model you have here. Have you worked on Unit 1?  
12

13 COLEMAN: Yes, I was aux operator there for a couple of years.  
14

15 CRESWELL: Do you have any observations between the workings of the two  
16 plants? Compare the problems.  
17

18 COLEMAN: Well as far as steam supply systems, I thought they were  
19 pretty good. They seemed fairly reliable. They put out what you need  
20 and all our problems in Unit 2 generally didn't come from that part of  
21 the plant. You know, when I first came to work here from the Navy, I  
22 thought, well this thing is so complicated it will never run, and I  
23 leaned later on that Unit 1 made it, proved it, you know, this thing  
24 will run. And Unit 2 was doing pretty fair, I thought, for just starting  
25

1 out. They didn't have too many trips and the things that caused the  
2 trips in Unit 1, at first, were cleared up and that was the dropped  
3 rods, and having to shut down on dropped rods. Well, they fixed, that  
4 cooking right along, and that is what they were doing the day it happened.  
5 So I think the steam supply would be alright. I'd have a bigger pressurizer,  
6 you know, it would be convenient. About 2 times as big as the steam  
7 generator but you couldn't have that. I realize too that money is  
8 involved and they have to save money where they can. Government, you  
9 know, they spoil because they can afford everything. They have the  
10 best.

11  
12 CRESWELL: Would you say this accident is mainly attributable to operator  
13 error or design deficiency?

14  
15 COLEMAN: Uh, like I said before, six of one and half a dozen of the  
16 other. What would have happened if my shift would have been on. You  
17 know you could say my one partner, if he had had the panel, well those  
18 FWB-12s would have never been shut because he is different from me. He  
19 goes around and he says he looks at each of the systems and says is  
20 this valve open and this valve, open right, he looks. I guess, so, if  
21 our shift was on, maybe we wouldn't have got this far, and I am not  
22 saying anything against their shift. I am certain their response is  
23 what they had time to you know, they say, well we'll do this, usually,  
24 to react to condition, well they had opposing conditions, what do you  
25

1 do. Maybe their choices were the wrong ones, but they did something.  
2 They didn't get, you know, they didn't fall back and fall apart and  
3 saying now, what'll I do, I am going to die or something like that.  
4 They did something and I think that seemed like the right thing to  
5 them, anyway.  
6

7 SHACKLETON: One of the rumors, of course, that has gone around, I  
8 appreciate your comments, Mark, there have been some rumors that always  
9 come around and one of them was that possibly this was employee induced,  
10 that someone would sabotaged the plant. Do you think there is any  
11 possibility of that?  
12

13 COLEMAN: Anything is possible. I don't know. We have a company-union  
14 relationship here between the operators and the company and sometimes  
15 it is not a very friendly one. I don't know. A person who would do  
16 that would never consider the safety aspect, so I wouldn't expect a  
17 Navy trained type operator, or somebody who had some depth of knowledge  
18 of what the consequences would be. I don't know, I've thought about,  
19 everybody has thought about the possibility of sabotage here. I don't  
20 I wouldn't think that anybody that had any real indepth knowledge of  
21 the plant or consequences of something like that. I don't know, but  
22 then if that is the case, the person wouldn't have knowledge enough to  
23  
24  
25

894 318

1 shut the valves. I don't know, I don't think I would do it, most  
2 people wouldn't do it so off from the back door type of thing, you  
3 know, something a little more direct, I would think.  
4

5 SHACKLETON: Thank you, Mark, I have no further question. (Good)  
6

7 RESNER: Okay, thank you very much Mark. I know we are here at this  
8 late hour. The time is now 12:16 a.m. and today's date is May 20,  
9 1979. This concludes the interview.  
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894 319