

BEFORE THE FACT FINDING TASK FORCE  
OF THE NUCLEAR REGULATORY COMMISSION

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Re:

Davis-Besse event :

of June 9, 1985 :

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INTERVIEW OF BRIAN YOUNG

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Interview of BRIAN YOUNG by the Nuclear  
Regulatory Commission Fact Finding Task Force,  
taken before me, Nicholas A. Marrone, a Registered  
Professional Reporter and Notary Public in and for  
the State of Ohio, at the Site Emergency Operations  
Center, Davis-Besse Nuclear Plant, Oak Harbor,  
Ohio, on Thursday, June 13, 1985, commencing at  
9:10 o'clock a.m.

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## 1 APPEARANCES:

2  
3 U. S. Nuclear Regulatory Commission  
4 Office of the Executive Legal Director  
5 Washington, D.C. 20555  
6 By Mr. Steve Burns,

7  
8 On behalf of the Commission.  
9

10  
11 MEMBERS OF THE TEAM:

12 Wayne Lanning  
13 Larry Bell  
14 J. T. Beard  
15 Ernie Rossi  
16

17  
18 ALSO PRESENT:

19 Louis Simon  
20

21 - - - - -  
22  
23  
24

Thursday Morning Session

June 13, 1985

9:10 o'clock a.m.

- - - - -

MR. ROSSI: Why don't we go on the record now.

This is going to be a discussion with Brian Young. And Brian, why don't you start out by telling us what your position is in the company.

MR. YOUNG: My position in the company is reactor operator on Ted Lehman's shift.

MR. BURNS: Brian, did you ask somebody to accompany you today during this interview?

MR. YOUNG: Yes, I did.

MR. BURNS: Would you tell us who that is?

MR. YOUNG: Louis Simon. He's an operation supervisor.

MR. ROSSI: Maybe we ought to go around the room and make it clear who is here for the record. Brian Young, of course, is here. Louis Simon is here. I'm Ernie Rossi.

MR. BEARD: J. T. Beard.

MR. BELL: Larry Bell.

MR. BURNS: Steve Burns.

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1 MR. LANNING: And Wayne Lanning.

2 MR. ROSSI: Okay. Brian, you indicated  
3 you are a reactor operator on Ted Lehman's shift?

4 MR. YOUNG: That's correct.

5 MR. BELL: Mr. Young, yesterday I got the  
6 impression there are two reactor operators for each  
7 shift, one operator takes care of the reactor and  
8 its associated auxiliaries, the other operator  
9 takes care of the secondary plant?

10 MR. YOUNG: That is correct.

11 MR. BELL: Which of those  
12 responsibilities do you hold on Mr. Lehman's shift?

13 MR. YOUNG: Presently I hold the  
14 secondary side.

15 MR. BELL: You are the secondary side  
16 operator?

17 MR. YOUNG: Yes. Which is feedwater.

18 MR. BELL: Fine, sir.

19 MR. BEARD: Do you operate on that system  
20 pretty much every shift or does it rotate between  
21 you and the other operators?

22 MR. YOUNG: Right now it's just primarily  
23 myself on the secondary side.

24 MR. BEARD: Have you operated as the



1 reactor side operator?

2 MR. YOUNG: Yes, I have.

3 MR. BEARD: How long has it been since  
4 roughly the last time you did that?

5 MR. YOUNG: Probably two months.

6 MR. BEARD: Two months, okay. Thank you.

7 MR. YOUNG: We do share the  
8 responsibilities, though, of the entire plant.

9 MR. BEARD: I understand that. I was  
10 just trying to understand just more of the way your  
11 shift operates, that's all.

12 MR. LANNING: Why don't you go ahead and  
13 tell us how long you have been with the company and  
14 that sort of information?

15 MR. YOUNG: I have been with the company  
16 for five years. Been a reactor operator for a  
17 little over two years.

18 MR. ROSSI: Okay. You came on shift at  
19 what time on June 9th?

20 MR. YOUNG: Midnight.

21 MR. ROSSI: At midnight. What we have  
22 done with the other people that we have interviewed  
23 is just ask them to tell us what they observed  
24 between the time they came on shift and the time of

1 the event. And why don't you do that first.

2 MR. BEARD: We are trying to get a  
3 background of what the initial conditions of the  
4 plant were as you came on the shift, like equipment  
5 that was out of service, equipment that was working  
6 normally. Just the general plant status.

7 MR. YOUNG: General plant status, we were  
8 at 90 percent power, everything was pretty much  
9 normal. I can't remember any outstanding equipment  
10 that we had inoperable at that time.

11 There was no testing going on at that  
12 time either, no particular testing being done by  
13 any other shift.

14 MR. BEARD: Was there any equipment that  
15 was in some special category where it was aligned  
16 in an unusual way for some reason?

17 MR. YOUNG: No. 2 main feedpump was in  
18 manual at that time, No. 1 being in auto.

19 MR. BEARD: Okay. This is a matter of  
20 clarification. I think you covered it, but I would  
21 like to just be sure. Do you remember whether or  
22 not the high pressure safety injection systems were  
23 operable and available at the time you came on  
24 shift?

1 MR. YOUNG: Yes, they were.

2 MR. BEARD: So they were totally  
3 functional as far as you remember?

4 MR. YOUNG: Yes.

5 MR. BEARD: Okay.

6 MR. BELL: Do you people perform an  
7 emergency core cooling alignment check every shift?

8 MR. YOUNG: Okay. No, we don't. I do  
9 personally review the entire boards, making sure  
10 all the valves are in the proper position.

11 MR. ROSSI: Both primary and secondary  
12 parts of the plant?

13 MR. YOUNG: Yes.

14 MR. BELL: So you would look at things  
15 like HPI pump hand switches to make sure they are  
16 not in pull to lock and you would make sure the  
17 four HPI MOVs are energized and shut?

18 MR. YOUNG: Yes.

19 MR. BELL: And you did that this night  
20 also?

21 MR. YOUNG: Yes.

22 MR. BELL: Okay, sir.

23 MR. ROSSI: Is there anything else you  
24 can remember between the time you came on shift and

1 the start of the event that is of interest or  
2 unusual?

3 MR. YOUNG: Other than the unusual shift  
4 STs.

5 MR. BEARD: STs being what?

6 MR. YOUNG: Daily instrument checks.

7 MR. BEARD: Instrument checks, okay.

8 MR. ROSSI: Okay. Why don't we go to the  
9 event then. Can you tell us what you remember  
10 about the start of the event and what you remember  
11 of the sequence of events.

12 MR. BEARD: When you start, Brian, could  
13 you start with where you were physically in the  
14 control room at the time something unusual -- at  
15 the onset of whatever it was. I mean, just your  
16 physical location.

17 MR. YOUNG: At that time, I was in a  
18 kitchen just right off the control room at that  
19 time. The other operator was in the control room.  
20 I had stepped out to get something to eat.

21 And at that time I heard a winding down  
22 noise of a turbine or pump of some sort, and I  
23 assumed that it was a main feedpump. I had heard  
24 that noise before. And so I ran out in the control

1 room at the same time the other operator called me  
2 out.

3 MR. BEARD: So it was the winding down  
4 noise that brought you to more immediate attention  
5 of the plant conditions as contrasted, say, an  
6 unseater sounding?

7 MR. YOUNG: Pardon?

8 MR. BEARD: As contrasted -- in other  
9 words, the thing that got your attention from what  
10 I hear you saying is the other operator didn't call  
11 you and say, Hey, Brian, get in here, we have got  
12 something, you didn't have an indication, an  
13 enunciator sounded that called your attention to it.  
14 The thing that called your attention was a winding  
15 down sound of something.

16 MR. YOUNG: Yes.

17 MR. ROSSI: Okay. So you went into the  
18 control area. And why don't you just proceed from  
19 there and tell us what you remember doing and  
20 seeing. If you remember enunciators that may have  
21 come on or been on, then tell us that too from what  
22 you remember.

23 MR. YOUNG: The other RO was standing on  
24 the primary side. I had seen that he already had

1 hit the spray valve. I did look up and see the  
2 main feedpump run back in progress alarm.

3 I went over -- proceeded over to the No.  
4 2 main feedpump and started opening that pump up in  
5 order to increase feedwater flow out of that pump.

6 MR. BEARD: Pumping it up means speeding  
7 up the turbine?

8 MR. YOUNG: Yes. We have a pistol grip.

9 MR. BELL: There are two ways to put No.  
10 2 main feedpump in what we would consider manual.  
11 One of them is to place the ICS hand automatic  
12 station for that feedpump in manual, and the other  
13 one is to have the turbine control in manual. Now,  
14 which one of those stations were --

15 MR. YOUNG: Turbine control station. It  
16 was already in that mode.

17 MR. BELL: The feedwater pumps controller  
18 from the ICS was in automatic?

19 MR. YOUNG: No. It was not.

20 MR. BELL: It was in manual also?

21 MR. YOUNG: Correct. No. 1 was in auto.

22 MR. ROSSI: Okay --

23 MR. BEARD: I'm a bit confused. Larry,  
24 maybe you can help me. On this question you just



1 raised, are you saying that both the pump and its  
2 associated turbine were in manual, neither one was  
3 under control of ICS for No. 2, and I guess the  
4 normal control to flow part would be on the  
5 discharge valve?

6 MR. BELL: Your ICS feedwater demand  
7 signal was controlling the both main feed reg  
8 valves plus the speed of No. 1 main feedpump. Is  
9 that not correct?

10 MR. YOUNG: That is correct.

11 MR. BEARD: Okay. But both of those  
12 control functions, the reg valve and the speed for  
13 this pump, were in manual?

14 MR. YOUNG: No. That is not correct.

15 MR. BEARD: I'm trying to understand what  
16 really was happening here?

17 MR. YOUNG: The reg valves are totally  
18 separate from the feedwater pump control logic.  
19 Both pumps discharge into a common header, and they  
20 go through the feedwater heaters and then to the  
21 feedwater reg valves; okay? It was the pumps that  
22 we had, No. 1 being in auto and No. 2 being in hand  
23 at matched speeds.

24 MR. BEARD: So the valve you had manual



1 control over was like the individual pump discharge  
2 valve. Is that what you are saying?

3 MR. YOUNG: No. Just the speed.

4 MR. BEARD: Just the speed.

5 MR. YOUNG: Just the speed of the pump to  
6 increase discharge capacity.

7 MR. BEARD: Okay. And the valve then,  
8 the feedwater reg valve was under what kind of  
9 control?

10 MR. YOUNG: ICS.

11 MR. BEARD: ICS control.

12 MR. BELL: Maybe I can clear that up and  
13 correct me if I'm wrong, please. There are six  
14 manual automatic stations for the feedwater section  
15 of the ICS Loop A and Loop B feedwater flow demands,  
16 and those stations were automatic and those  
17 stations compare feedwater demand with flow and  
18 send signals to No. 2 main feedpump which has its  
19 own hand automatic station No. 2 startup valve,  
20 which was in automatic, and No. 2 main feed reg  
21 valve, which was also in automatic.

22 On the No. 1 loop side we would have Loop  
23 A or Loop No. 1 feedwater demand in automatic, the  
24 startup valve for the A side in automatic, the main

1 feed reg valve for the A side in automatic, and No.  
2 1 feedwater pump turbine in automatic; is that  
3 correct?

4 MR. YOUNG: That would -- that is correct.

5 MR. BELL: Okay.

6 MR. BEARD: I don't mean to belabor this,  
7 I just got confused myself and I thought we better  
8 get it clarified before we go further. Thank you.

9 MR. YOUNG: No problem.

10 MR. BELL: So now we are setting with a  
11 No. 1 feedwater pump turbine winding down, that's  
12 No. 1 feedwater pump turbine, and you are in the  
13 process of increasing No. 2 feedwater pump turbine  
14 speed?

15 MR. YOUNG: Yes.

16 MR. BELL: That feedwater pump drives  
17 both the booster feedpump and the main feedpump?

18 MR. YOUNG: Yes. Turbines directly  
19 connected to both.

20 MR. BEARD: Okay.

21 MR. ROSSI: Why don't you just proceed  
22 then with what happened next, you know, from your  
23 observations and what actions you took?

24 MR. YOUNG: Well, at that time, the

1 levels were coming down from the steam generators.  
2 The reactor was running back. I heard the other  
3 operator saying that the reactor was running back  
4 at a good rate.

5 At that time, I noticed that the delta Ps  
6 were at zero and still proceeding up with the  
7 pump --

8 MR. BEARD: Which delta P are you  
9 referring to?

10 MR. YOUNG: The delta P across the valves.

11 MR. BEARD: These are the reg valves for  
12 the feedwater line?

13 MR. YOUNG: The feedwater valves.

14 MR. ROSSI: For both feedwater reg valves  
15 now?

16 MR. YOUNG: Yes, for both lines.

17 MR. YOUNG: And at that time I heard the  
18 turbine trip or, excuse me, the reactor trip. And  
19 we proceeded to carry out our immediate actions.  
20 We carried them out, continued bumping up the pump  
21 trying to maintain a proper discharge header --  
22 excuse me, proper discharge head on the pump to  
23 insure flow, feedwater flow to the steam generators.

24 MR. BELL: One question, please?

1 MR. YOUNG: Yes.

2 MR. BELL: If this delta P across the  
3 valve is zero, does that mean to you that steam  
4 generator pressures and feed header pressures are  
5 equal?

6 MR. YOUNG: Yes.

7 MR. BELL: Isn't it possible that  
8 feedwater pressure can be slightly lower than steam  
9 generator pressure in this case? Those valves are  
10 wide open, we are trying to put a lot of flow  
11 through there, but won't we get a large pressure  
12 drop across those valves or get some pressure drop  
13 across those valves so we can actually have a case  
14 where feedwater pressure is lower than steam  
15 generator pressure? Is that possible?

16 MR. YOUNG: I don't think at that time  
17 that's physically possible and still maintain a  
18 flow.

19 MR. BELL: You did indicate flow to both  
20 steam generators at this time?

21 MR. YOUNG: I had flow on the main  
22 feedpump at that time. I saw the valves were open.  
23 I had almost seven and a half million pounds per  
24 hour flow on that one pump.

1 MR. ROSSI: That's No. 2 pump?

2 MR. YOUNG: Before -- yes. Before it  
3 tripped -- or excuse me, before the reactor tripped.

4 MR. BELL: The reason I ask that question,  
5 there is an SFRCS actuation under steam generator  
6 pressure greater than feed pressure by 177 pounds?

7 MR. YOUNG: Yes.

8 MR. BELL: But in your opinion, there is  
9 not a situation that would cause that actuation at  
10 this time?

11 MR. YOUNG: No, there was not.

12 MR. BELL: All right, sir.

13 MR. BEARD: Let me ask a more direct  
14 question. When you say something, Brian, that says  
15 DP across the reg valve is zero --

16 MR. YOUNG: Yes.

17 MR. BEARD: -- what's the significance of  
18 the connotation of that being zero?

19 MR. YOUNG: That basically that one side  
20 is equal to the other.

21 MR. BEARD: Okay. It doesn't -- I mean,  
22 you didn't intend it to convey with that anything  
23 with regard to what the flow was?

24 MR. YOUNG: That's correct.

1 MR. BEARD: It was just the pressures  
2 were balanced?

3 MR. YOUNG: That is correct. The way the  
4 logic works for ICS to control is that it maintains  
5 44 pounds delta P across the reg valves and that  
6 would indicate that valves had some sort of control  
7 over your flow in level. That would be an  
8 indication to me that I was being successful.

9 MR. BEARD: If you had some DP  
10 approximating 40 pounds?

11 MR. YOUNG: Yes. Well, just some DP.

12 MR. BEARD: Yeah, all right. But you  
13 were saying that you had zero DP?

14 MR. YOUNG: Yes.

15 MR. BEARD: Okay.

16 MR. YOUNG: Which told me at that time  
17 that I was lacking in feedwater flow.

18 MR. BEARD: You needed to catch up?

19 MR. YOUNG: Yes.

20 MR. LANNING: Were you able to determine  
21 at this time that the No. 1 main feedwater pump had  
22 tripped?

23 MR. YOUNG: Yes. I did see the red light  
24 trip light.



1 MR. LANNING: Can you tell me what that  
2 light tells you?

3 MR. YOUNG: That all stop valves are  
4 closed.

5 MR. LANNING: Are you able to determine  
6 why they were closed?

7 MR. YOUNG: No.

8 MR. LANNING: You just have a signal that  
9 tells you that, what is it, the steam emission  
10 valves are closed to the turbine?

11 MR. YOUNG: Yes.

12 MR. LANNING: Okay.

13 MR. BEARD: You said you heard the  
14 reactor trip. I don't think you meant to imply --  
15 the reactor doesn't make noise when it trips, does  
16 it?

17 MR. YOUNG: That's correct. It was in  
18 conjunction with the turbine tripping.

19 MR. BEARD: I think what you were saying,  
20 you heard an enunciator or something indicative of  
21 the reactor trip?

22 MR. YOUNG: No. The turbine tripping and  
23 the reactor tripping almost simultaneously is what  
24 I heard, and it was the control valves on the



1 turbine that I actually heard.

2 MR. BEARD: On the reactor trip, do you  
3 remember what condition caused the trip?

4 MR. YOUNG: Not at that particular moment.  
5 It was not until later that I learned.

6 MR. BEARD: Probably if you are operating  
7 on the secondary side, it's not very important to  
8 you.

9 MR. YOUNG: It would be important to me  
10 what caused the trip. But not at that time could I  
11 determine it.

12 MR. BEARD: Fine.

13 MR. BELL: Brian, at this time did you  
14 hear the main steam safety valves lift?

15 MR. YOUNG: Yes.

16 MR. BELL: Did you shortly after the trip,  
17 did you hear those valves reseal? Did the noise  
18 from the safety valves stop?

19 MR. YOUNG: It was not until like one or  
20 two minutes they were blowing that they reseated  
21 and then reopened.

22 MR. ROSSI: They reseated and reopened?

23 MR. YOUNG: Yes, some of them.

24 MR. ROSSI: Okay. And is that something

1 that you would have expected to happen for them to  
2 reopen also?

3 MR. YOUNG: Yes. They basically had  
4 control of the header.

5 MR. BEARD: Okay. The lifting of the  
6 safeties is pretty much normal for the plant at  
7 that time. That is not an unexpected event.

8 MR. YOUNG: No.

9 MR. ROSSI: Okay. Why don't you proceed  
10 then with your description.

11 MR. YOUNG: Okay. I was trying to  
12 maintain adequate discharge pressure on the  
13 remaining main feedpump. Everything was going as  
14 expected for the post-trip responses, steam  
15 generator levels were boiling down, I was watching  
16 that. They should have went down to the low level  
17 limits. Startup valves were starting to open.  
18 Then I noticed that my No. 2 main feedpump was  
19 decreasing in speed.

20 MR. BEARD: No. 2 was decreasing?

21 MR. YOUNG: Yes. My remaining one.

22 MR. BEARD: Do you have any idea why that  
23 was happening?

24 MR. YOUNG: At that time, I figured that

1 I had no steam pressure, for some reason I lost it.

2 MR. BEARD: Do you remember -- I guess I  
3 have to be careful in saying that. There is a  
4 difference between what was going through your mind  
5 at the time you were going through the event and  
6 what you may have become aware of subsequently.

7 MR. YOUNG: No. At that time --

8 MR. BEARD: What I'm trying to ask in  
9 this question, at the time you were going through  
10 it, what was your thinking?

11 MR. YOUNG: My thinking was that my main  
12 feedpump was going away. There is some reason why  
13 I lost it. And the most apparent reason was that I  
14 had lost pressure because I still had a green light  
15 that it was reset.

16 MR. BEARD: A green light that what was  
17 reset?

18 MR. YOUNG: That the turbine was reset as  
19 well as the stop valves being open.

20 MR. BEARD: The turbine being the feed  
21 pumps turbine?

22 MR. YOUNG: Right.

23 MR. BEARD: Did you have any idea or did  
24 you take time to pursue why you had this apparent

1 loss of steam?

2 MR. YOUNG: Yes, I did.

3 MR. BEARD: What did you come up with?

4 MR. YOUNG: MSIVs were closed.

5 MR. BEARD: Okay.

6 MR. ROSSI: Let me go back just one  
7 minute to something you said. The startup feed  
8 valves, you observed both of them to start to open;  
9 is that correct?

10 MR. YOUNG: Yes.

11 MR. BELL: I want some clarification on  
12 that point. I was under the impression that as I  
13 escalated power, I reached a point where the  
14 startup feed reg valves would send a signal to open  
15 the main feed block valve, and then I would control  
16 feedwater flow with the main feed block valve.

17 MR. YOUNG: That is correct.

18 MR. BELL: However, the startup feed reg  
19 valves modulate to a hundred percent open, don't  
20 they, as I continue my power escalation?

21 MR. YOUNG: I'm sorry, I'm not catching  
22 where you are --

23 MR. BEARD: You are talking on a plant  
24 startup now.

1 MR. BELL: Let's start at zero percent  
2 power. Let's start before we even take the reactor  
3 critical. Let's say the feedwater valves are  
4 moderating to hold me on low level limits. As I  
5 escalate power, those valves have to open further  
6 to maintain steam generator on low level limits.

7 As I take the reactor critical, roll the  
8 feedpump, place that in service, that valve  
9 continues to open to hold me on low level limits  
10 until it reaches about 80 percent. Is that not  
11 correct?

12 MR. YOUNG: Yes.

13 MR. BELL: And then at the 80 percent  
14 position, that startup feed reg valve sends a  
15 signal to open the main feed block valve and now  
16 I'm controlling feedwater flow with two valves, the  
17 startup valve and the main feed reg valve?

18 MR. YOUNG: Correct.

19 MR. BELL: And I would remain in that  
20 condition all the way up to 100 percent power,  
21 wouldn't I? What sends the signal to start that  
22 startup valve?

23 MR. YOUNG: The startup valve or --

24 MR. BELL: The startup valve.

1 MR. YOUNG: There is an RFR circuit.

2 MR. BELL: That's right. That rapid  
3 feedwater reduction shuts that on this plant.

4 MR. BEARD: That's unique to this plant  
5 as far as you know?

6 MR. YOUNG: Yes.

7 MR. ROSSI: So the rapid feedwater  
8 reduction signal would have closed the startup feed  
9 valve, and later you observed both of them to open  
10 for both steam generators, which is the normal  
11 thing that should have happened?

12 MR. YOUNG: Yes.

13 MR. BELL: But that startup feed reg  
14 valve is only closed to a target position, right?

15 MR. YOUNG: Yes. Of approximately 15  
16 percent open.

17 MR. BELL: It's coming back to me slowly.

18 MR. BEARD: I would like to go back to  
19 the part where your No. 2 feedpump was winding down.  
20 You surmised you were losing steam. You find out  
21 the MSIVs were closed?

22 MR. YOUNG: Yes.

23 MR. BEARD: At that time did you choose  
24 to pursue why the MSIVs were closed?



1 MR. YOUNG: No.

2 MR. BEARD: You just stopped right there  
3 in terms of you found out why the pump was coasting  
4 down, now you went on to do other things?

5 MR. YOUNG: Well, I tried to determine  
6 why the MSIVs were closed by looking up to see if  
7 there was an SFRCS actuation, which there was none.

8 MR. BEARD: So you did pursue the cause  
9 of the MSIV closure to some extent?

10 MR. YOUNG: Yes, the most apparent one.

11 MR. BEARD: Right. What was your feeling  
12 then about the closure of the MSIVs in the context  
13 of is this normal or a complication on the event or  
14 how did you feel about that?

15 MR. YOUNG: It was not normal.

16 MR. ROSSI: Had it occurred at this plant  
17 before during reactor trips? I mean, was it  
18 something that rarely occurred, never occurred or  
19 occurred occasionally at the plant?

20 MR. YOUNG: It happened one other time  
21 that I know of for sure.

22 MR. ROSSI: It happened one other time  
23 that you know of?

24 MR. YOUNG: Yes.



1 MR. ROSSI: With the SFRCS not actuating  
2 them in that case also?

3 MR. YOUNG: Yes.

4 MR. BEARD: Do you remember roughly the  
5 time frame of when this previous I'll call it  
6 spurious closure occurred? I mean, are you talking  
7 a few weeks ago or a few years ago or --

8 MR. YOUNG: No. I do not remember exactly  
9 which trip it was.

10 MR. BEARD: I was just trying to get a  
11 feel whether it was recent or a long time ago?

12 MR. YOUNG: I believe it was recent, but  
13 I could not say for sure.

14 MR. BEARD: I don't intend to pin you  
15 down. I'm just trying to understand the context,  
16 that's all.

17 So I guess we are at the point where you  
18 are losing No. 2 main feed, you found out the  
19 reason for it: the MSIVs were closed. And I guess  
20 where do we go from there?

21 MR. YOUNG: Okay. At this time I saw  
22 that my steam generator levels were still boiling  
23 down. I heard the main steam safeties lifting, I  
24 asked permission to trip SFRCS on the lower limits

1 from the shift supervisor.

2 MR. BEARD: Why would you want to do that?

3 MR. YOUNG: Maintain as much inventory of  
4 my steam generators as possible. I would boil it  
5 down to the SFRCS trip.

6 MR. BEARD: All right. So are you saying --  
7 well, let me back up and ask it this way. I guess  
8 I need to ask a sequence of two or three questions  
9 to get it in perspective.

10 Suppose you had done nothing, okay, what  
11 would the automatic features of the plant had led  
12 you to in this situation?

13 MR. YOUNG: Trip me on low level limits.

14 MR. ROSSI: On low level limits?

15 MR. YOUNG: Excuse me. On low level.

16 MR. BEARD: Steam generator low level?

17 MR. YOUNG: Yes.

18 MR. BEARD: And that would cause an  
19 actuation of --

20 MR. YOUNG: What I was intending to, of  
21 SFRCS.

22 MR. BEARD: So if you had done nothing,  
23 the water would boil off a little further, you get  
24 to a low level setpoint, and you get an automatic

1 actuation that would do certain things.

2 MR. YOUNG: Yes.

3 MR. BEARD: And if I understand you, what  
4 you are saying is if that's inevitable to conserve  
5 inventory, go ahead and actuate it manually. Is  
6 that what you are thinking?

7 MR. YOUNG: Yes.

8 MR. ROSSI: Why don't you go ahead then.  
9 You asked permission to trip the SFRCS on low level.

10 MR. YOUNG: Yes.

11 MR. ROSSI: Okay. Go ahead.

12 MR. YOUNG: My shift supervisor gave me  
13 permission, I went around and tripped them on low  
14 level limits or, excuse me, low level.

15 MR. BEARD: Okay. To do this physically,  
16 what kind of activities -- are you talking about  
17 grabbing a pistol switch?

18 MR. YOUNG: You have to run around the  
19 back of your feedwater station and trip it. There  
20 is a series --

21 MR. BEARD: Physically is it turning a  
22 pistol-type switch?

23 MR. YOUNG: Two trip buttons.

24 MR. BEARD: Two push buttons.

1 MR. ROSSI: A total of two buttons you  
2 pushed?

3 MR. YOUNG: Yes.

4 MR. ROSSI: You tripped SFRCS I think you  
5 said?

6 MR. YOUNG: On low level.

7 MR. ROSSI: On low level. By pushing two  
8 buttons?

9 MR. YOUNG: Yes.

10 MR. BEARD: As far as you know, your  
11 anticipatory actions on level actuation, low steam  
12 generator level actuation was indeed before any  
13 automatic actuations had occurred?

14 MR. YOUNG: Yes.

15 MR. BEARD: Either partial or total?

16 MR. YOUNG: Yes.

17 MR. BEARD: As far as you know, I mean?

18 MR. YOUNG: As far as I knew. I did not  
19 have any alarms.

20 MR. BEARD: Okay.

21 MR. ROSSI: Okay.

22 MR. BEARD: I guess then we go -- you had  
23 to leave your immediate location, go around from  
24 the main console to the vertical board to do that,

1 and I guess you did what, you returned back to your  
2 normal -- to where you had been?

3 MR. YOUNG: Yes.

4 MR. BEARD: Okay. Then what happens?

5 MR. YOUNG: I went over to the aux feed  
6 station.

7 MR. BELL: Are you able to see steam  
8 generator levels from this SFRCS manual initiation  
9 panel?

10 MR. YOUNG: No, I'm not.

11 MR. BELL: So you have to manually  
12 initiate the system on a back panel, and then come  
13 around to the desk section of the panel to observe  
14 that this system is actuated properly and is filling  
15 the steam generators?

16 MR. YOUNG: Yes.

17 MR. LANNING: What indication do you have  
18 on the front panel that you have actuated or the  
19 SFRCS has actuated?

20 MR. YOUNG: I have they were commonly  
21 referred to as segregation valves which line up the  
22 aux feed pumps to either one selected steam  
23 generator or to separate steam generators. Those  
24 position indications on those valves.

1 MR. LANNING: So you have to physically  
2 look at the valve alignments for the aux feedwater  
3 system?

4 MR. YOUNG: Yes.

5 MR. LANNING: Are there any enunciator  
6 lights on any of the panels that says you have got  
7 a full trip of the SFRCS?

8 MR. YOUNG: Yes, there is. There is an  
9 enunciator panel for that and then an enunciator  
10 alarm that says SFRCS, full actuation.

11 MR. BEARD: Are you finished, Wayne?

12 MR. LANNING: Do you recall whether or  
13 not you looked to see if that enunciator light was  
14 lit?

15 MR. YOUNG: No, not at that time.

16 MR. LANNING: This is the same light that  
17 you would have looked at in the beginning to see if  
18 you had an SFRCS actuation?

19 MR. YOUNG: Yes.

20 MR. LANNING: Is that correct?

21 MR. YOUNG: Yes.

22 MR. LANNING: Okay.

23 MR. ROSSI: Okay, now.

24 MR. BEARD: I want to follow up on



1 Wayne's thought. The way that you would tell that  
2 your actuation had been successful would be to look  
3 at the feedwater valves in terms of was each  
4 auxiliary feedwater pump lined up to its associated  
5 generator or some criss-cross fashion to the  
6 opposite steam generator?

7 MR. YOUNG: Yes.

8 MR. BEARD: Where are those indications  
9 physically located in the control room?

10 MR. YOUNG: Right next to the aux  
11 feedwater station.

12 MR. BEARD: So they would not be on the  
13 panel where you had done the actuation?

14 MR. YOUNG: That's correct.

15 MR. BEARD: Is it your normal custom to  
16 use those valve indicators to tell you that the  
17 actuation was successful or had gone properly or  
18 whatever, I mean, is this a normal thing or is this  
19 something unique, just one night? That's all I'm  
20 trying to understand?

21 MR. YOUNG: It's a good determination,  
22 method of determination that you do have valves  
23 physically lined up.

24 MR. BEARD: Okay. You had used this



1 before, I take it?

2 MR. YOUNG: No. This was my first SFRCS  
3 actuation.

4 MR. BEARD: Okay. Had you been trained,  
5 had your training included the information, this  
6 was a good way to tell if the aux feedwater was  
7 running properly?

8 MR. YOUNG: This was one of the methods  
9 of determining whether aux feedwater was lined up  
10 properly.

11 MR. BEARD: Okay.

12 MR. YOUNG: As well as watching the pumps.

13 MR. BEARD: Your reason for doing this,  
14 I'm just trying to understand, was not because of  
15 prior experience with other actuations, more as I  
16 think you are explaining it to us, this was one of  
17 the ways you could tell it based on your training?

18 MR. YOUNG: Yes.

19 MR. BEARD: Okay.

20 MR. ROSSI: Okay. Let me ask a question.  
21 I thought I heard you say that this was the first  
22 time you manually initiated SFRCS?

23 MR. YOUNG: Yes. Manually as well as  
24 being on the feedwater side of the plant or

1 secondary side of the plant during an SFRCS  
2 actuation.

3 MR. ROSSI: Oh, okay. It was the first  
4 time you had been on the secondary side of the  
5 plant during an SFRCS actuation, and the first time  
6 you had personally manually actuated the SFRCS.

7 MR. YOUNG: That is correct.

8 MR. ROSSI: Why don't we go back to --  
9 why don't we let him go through at least a part of  
10 this sequence starting from when he went to the  
11 panel and actuated the SFRCS without any  
12 interruptions, just so we can get a little bit  
13 further.

14 MR. BELL: May I get one quick question  
15 cleared up?

16 MR. ROSSI: Go ahead.

17 MR. BELL: Are you able to see auxiliary  
18 feedwater flow indications from the back panel or  
19 do you again have to return to the desk section to  
20 observe auxiliary feedwater flows?

21 MR. YOUNG: You have to return to the  
22 desk section to do it.

23 MR. BELL: After you looked at those  
24 segregation valve lights, did you then glance at

1 the auxiliary feedwater flow meters?

2 MR. YOUNG: Segregation valves had not  
3 started to move at that time.

4 MR. BELL: But those under a low level  
5 actuation wouldn't reposition anyhow, would they?

6 MR. YOUNG: Yes, they would. They were  
7 all four normally closed.

8 MR. BELL: Did you glance at the  
9 auxiliary feedwater flow indication at this time?

10 MR. YOUNG: No, I was glancing at the  
11 turbine speed at this time.

12 MR. BELL: Okay, sir. Thank you, Dr.  
13 Rossi.

14 MR. ROSSI: Okay. Why don't you -- let's  
15 go back to you went back and you manually actuated  
16 the SFRCS and you said on low level?

17 MR. YOUNG: Yes.

18 MR. ROSSI: Why don't you proceed from  
19 there as to what you did, even though it may be a  
20 repeat since we had so many interruptions.

21 MR. YOUNG: At this time I looked at the  
22 segregation valves; I saw no motion at that time.  
23 I would expect some shortly.

24 I started to look -- well, I went to look

1 at the turbine speed of both aux feed pumps which  
2 are side by side. I watched No. 1 pump come up to  
3 speed, cycle down about a thousand rpm, and proceed  
4 up in speed and die off, to say. And I looked up  
5 and saw Aux Feedwater Pump 1 trip.

6 At that same moment, No. 2 light was  
7 coming on, enunciator light, and then I looked down  
8 at the No. 2 Aux Feedwater Pump and it was  
9 approximately fifteen hundred rpm and decreasing.

10 Then at that time, the shift supervisor  
11 said that the segregation valves were wrong, they  
12 were not lining up right. I looked at the back  
13 panel to see what I had actually -- if I had  
14 actually tripped it on low levels, and saw that the  
15 low pressures were depressed at that time.

16 I told him about it. He went around the  
17 panel, turned the trips off, retripped it on low  
18 level.

19 MR. BEARD: I take it that the  
20 segregation of the cross-over valves in the aux  
21 feed, that's something that is unique to the low  
22 pressure actuation, that would be unexpected for a  
23 low level actuation? Is that what you are saying?

24 MR. YOUNG: Yes.

1           MR. BELL: You stated you saw No. 1  
2 auxiliary feedwater pump turbine speed up, then the  
3 speed dropped, and then the speed returned. Are  
4 you describing a normal event there? Is that  
5 normal? Does the turbine start up with a governor  
6 valve position probably wide open, the speed comes  
7 up very rapidly, then the governor gains control of  
8 the pump and restores its pump speed, and then  
9 escalates pump speed to setpoint. Is that a  
10 correct observation on my part or is that abnormal?

11           MR. YOUNG: Okay. The governor is wide  
12 open at that time. It demands that it be wide open  
13 because the turbine is not at speed. The  
14 indication that I saw is characteristic of that  
15 startup or, excuse me, aux feed upstarting. And I  
16 had been down in the room, and that is not apparent  
17 down in the room as far as noise goes.

18           MR. BELL: But it is, the turbine starts  
19 with that governor wide open and then as it  
20 escalates in speed, the governor control takes over,  
21 catches speed, if I may use that phrase, and then  
22 escalates speed up to setpoint?

23           MR. YOUNG: That is correct.

24           MR. BEARD: I guess the bottom line of

1 what I'm hearing you say, Brian, is that the  
2 behavior of the speed is typical of what you expect  
3 and didn't indicate anything abnormal prior to  
4 tripping out?

5 MR. YOUNG: That is correct.

6 MR. BEARD: All right.

7 MR. ROSSI: Was that for both pumps now  
8 or just the one?

9 MR. YOUNG: Just the No. 1.

10 MR. ROSSI: Just the No. 1.

11 MR. YOUNG: No. 2 has a different  
12 governor.

13 MR. ROSSI: Okay.

14 MR. BELL: Did No. 2 auxiliary feedwater  
15 pump turbine behave as expected during the early  
16 parts of this transient?

17 MR. YOUNG: Yes.

18 MR. BELL: Did you make similar  
19 observations of that pump speed?

20 MR. YOUNG: No. Not -- it's not the same  
21 characteristics as No. 1.

22 MR. BELL: Thank you.

23 MR. YOUNG: No. 2 is a much slower  
24 responding. But the indication is not always what



1 is happening.

2 MR. BELL: Would you elaborate on that a  
3 little bit?

4 MR. YOUNG: That is to say that  
5 indication may not respond as fast in the control  
6 room as what is actually happening.

7 MR. BELL: Did you actually see Mr.  
8 Lehman push those low level actuation push buttons?

9 MR. YOUNG: I saw him turn the low  
10 pressures off and I saw him push the low level  
11 actuations.

12 MR. ROSSI: Why don't you proceed to  
13 describe what happened then and what you did, what  
14 you observed and what you did?

15 MR. YOUNG: Okay. What I did at this  
16 time was -- let's see. Okay. I said that we had  
17 no aux feed pumps available; they had tripped. At  
18 that time, we dispatched two operators to the aux  
19 feedpump room.

20 MR. ROSSI: What were those? Those are --

21 MR. YOUNG: Equipment operators.

22 MR. ROSSI: Equipment operators. Go  
23 ahead.

24 MR. YOUNG: Okay. At that time, Steve

1 Feasel was going through the EP. At that time I  
2 saw him sitting back at the table -- or at the desk,  
3 I should say. He was also doing verification. He  
4 also got up and did a verification at that time at  
5 aux feedwater alignment. He did note that 608 and  
6 599 were closed.

7 He then tried to open them. They would  
8 not respond. He did say that he was going to go  
9 try initial block or, excuse me, I can't think of  
10 the correct termination. We never use it. Excuse  
11 me.

12 Do you know what the correct termination,  
13 when you go to initiate block --

14 MR. SIMON: Initial bypass is the normal  
15 terminology.

16 MR. YOUNG: Initial bypass. It was as I  
17 saw it an attempt to clear the logic of the  
18 inadvertent low pressure trip.

19 MR. BELL: Is this initial block required  
20 during a plant cool down to prevent unnecessary  
21 actuation of the SPRCS system on the low steam  
22 generator pressure?

23 MR. YOUNG: No. We have separate  
24 controls for that.

1 MR. BEARD: Is this initial block or reset  
2 the kind of thing you normally do prior to a plant  
3 startup to sort of initialize the whole system for  
4 a startup?

5 MR. YOUNG: Yes.

6 MR. BELL: Are there any enunciators in  
7 the control room that would allow you to know this  
8 initial block had been performed?

9 MR. YOUNG: No.

10 MR. ROSSI: Okay. So you saw Steve  
11 Feasel go and initiate the initial bypass, which  
12 was an attempt to clear the logic of the  
13 inadvertent low pressure actuation. I think that's  
14 what you said.

15 MR. YOUNG: Yes.

16 MR. ROSSI: Why don't you proceed.

17 MR. YOUNG: Yes. Then at that time, Ted  
18 Lehman or Steve Feasel came back around, tried to  
19 open 608 and 599 again, and they would not.

20 MR. BEARD: Those are at the main control  
21 board?

22 MR. YOUNG: Yes.

23 MR. BELL: Can you give us an approximate  
24 time between the pushing of the buttons and when

1 Mr. Feasel attempted to initial block the SFRCS  
2 system?

3 MR. YOUNG: No. Everything was moving so  
4 fast, I was trying to watch the secondary side at  
5 that time also. My indication, I did have -- did  
6 notice that I still had main steam safeties lifting.

7 MR. BELL: I imagine things are pretty  
8 hectic in the control now. You are sitting with no  
9 feedwater available to either steam generator, if I  
10 understand your statement correctly?

11 MR. YOUNG: That's correct.

12 MR. BELL: How do you feel about that?

13 MR. YOUNG: How do I feel about it?

14 MR. BELL: Does that make you nervous or --

15 MR. YOUNG: At that time I had no time to  
16 feel about it. I was just moving too fast.

17 MR. BELL: So you were in automatic and  
18 you were trying to get feedwater back to steam  
19 generators any way you could.

20 MR. YOUNG: Yes.

21 MR. ROSSI: Okay. Why don't you continue.  
22 The last thing I had on the event was Steve Feasel  
23 had tried to open 608 and 599 again, and they would  
24 not open?

1 MR. YOUNG: Yes.

2 MR. ROSSI: Okay.

3 MR. YOUNG: At that time I also was  
4 taking steps to place the aux feedwater controls in  
5 manual and insure they were run up on the high  
6 speed stops, the governors. This was just in case  
7 that the auto essential had driven them down in an  
8 attempt to control the overspeed.

9 Then at that time Steve Feasel also said  
10 he was going to go out and get us a startup  
11 feedpump available. At that time I asked the other  
12 RO to go in the back and reset SP7A and B.

13 MR. BEARD: SP7A and B, these are the  
14 startup main feedwater reg valves?

15 MR. YOUNG: Yes, that's correct.

16 MR. BEARD: The startup feedwater reg  
17 valves.

18 MR. YOUNG: That's correct.

19 MR. BEARD: Is there some reset behind --  
20 I'm trying to understand why you have to go behind  
21 the panel to reset something.

22 MR. YOUNG: There is reset buttons in the  
23 back of the control room to block -- that allows us  
24 to open them during an SFRCS.

1 MR. BEARD: I see. Because of the SFRCS,  
2 they would have been closed and you are trying to  
3 reopen to establish a path for some feed?

4 MR. YOUNG: Yes.

5 MR. BEARD: I guess that would be related  
6 to the startup pump he said he went out to align  
7 for you?

8 MR. YOUNG: Yes, I was preparing a  
9 feedwater path at this time.

10 MR. BEARD: These are the same two valves  
11 you had observed earlier in the transient as opening  
12 at some point; is that correct?

13 MR. YOUNG: Yes.

14 MR. ROSSI: Okay. And then they were  
15 closed because of the SFRCS actuation and now you  
16 went to reset them?

17 MR. YOUNG: No. The other operator.

18 MR. ROSSI: The other operator went to  
19 reset them?

20 MR. YOUNG: I was at the aux feed pump  
21 governors.

22 MR. LANNING: Where are valves number 599  
23 and 608?

24 MR. YOUNG: They are on the back panel.



1 MR. LANNING: No. In what system are  
2 they in?

3 MR. YOUNG: They are in the SFAS system,  
4 on the SFAS panel, excuse me.

5 MR. LANNING: But what system in the  
6 plant are these valves located in?

7 MR. YOUNG: Aux feedwater.

8 MR. LANNING: Aux feedwater system?

9 MR. YOUNG: Those are the main isolations.

10 MR. LANNING: Can you explain a little  
11 bit more, physically where are they located with  
12 regards to the pumps?

13 MR. YOUNG: With regards to the pumps,  
14 they are located in a separate building called the  
15 aux building.

16 MR. YOUNG: Are they the discharge of the  
17 pumps or suctions out of the pumps?

18 MR. YOUNG: They are discharge.

19 MR. LANNING: They are normally closed?

20 MR. YOUNG: They are normally open.

21 MR. LANNING: Normally open?

22 MR. YOUNG: Yes.

23 MR. LANNING: When the aux feedwater  
24 system initiated, are these two of the valves that

1 you would normally check to see if you have got a  
2 flow path established?

3 MR. YOUNG: Yes.

4 MR. LANNING: And when the aux feedwater  
5 system is started, do you normally verify that flow  
6 path?

7 MR. YOUNG: That's one of the things that  
8 Steve Feasel was doing.

9 MR. LANNING: Steve was doing?

10 MR. YOUNG: Yes.

11 MR. LANNING: Okay. Is that because it  
12 was on the primary side panel of the control room  
13 or --

14 MR. YOUNG: It was on the back panel.

15 MR. LANNING: It was on the back panel?

16 MR. YOUNG: Behind the desk panel of the  
17 control room.

18 MR. BEARD: The vertical panel.

19 MR. LANNING: Okay. I guess I'm getting  
20 a little confused here. I would have thought you  
21 would have verified these valves were opened as  
22 part of having actuated the aux feedwater system?

23 MR. YOUNG: No. I was still at the  
24 turbine or aux feedwater turbine control stations.

1 MR. LANNING: Okay. So when the aux  
2 feedwater system started, initiated, did you verify  
3 the flow path was established?

4 MR. YOUNG: No. Those are normally open  
5 valves. Those are impossible for me to see from my  
6 location on the panel. I didn't take time out to  
7 look at them because I assumed they were open at  
8 that time. It did not matter at first because of  
9 those turbines tripping.

10 MR. LANNING: Are there other valves on  
11 the discharge side of the pump that are normally  
12 closed?

13 MR. YOUNG: No. Excuse me. Yes, there  
14 is. Those are the segregation valves.

15 MR. LANNING: Okay. In other words, they  
16 have to open in order to deliver emergency  
17 feedwater?

18 MR. YOUNG: Yes.

19 MR. LANNING: Okay. Now, who would check  
20 to see if those valves had opened on initiation of  
21 aux feedwater system?

22 MR. YOUNG: I would. They were right  
23 next to the aux feedwater control station.

24 MR. YOUNG: Okay.

1 MR. BEARD: When you actuated the aux  
2 feedwater, I guess I understand you to say you were  
3 worried more about getting the turbine up to speed,  
4 controlling the turbine side, and maybe less about  
5 the water side of the system?

6 MR. YOUNG: Yes. You can always  
7 reestablish --

8 MR. BEARD: But do you have nearby you  
9 something that indicates, regardless of valve  
10 positions, do you have something nearby that  
11 indicates whether or not the flow was occurring?

12 MR. YOUNG: There are flow meters right  
13 next to the speed meters.

14 MR. BEARD: So they were nearby where you  
15 were?

16 MR. YOUNG: Yes.

17 MR. BEARD: Did you happen to notice  
18 those things?

19 MR. YOUNG: No, not at that time.

20 MR. BEARD: Okay.

21 MR. BELL: Let's see if I got the  
22 sequence of events correct. Someone has been  
23 dispatched to reset the feedpump turbines by now,  
24 aux feedpump turbines?

1 MR. YOUNG: Yes.

2 MR. BELL: And you are in the process of  
3 running the speed signal up to maximum with the  
4 manual control switch for those auxiliary feedpump  
5 turbines?

6 MR. YOUNG: Yes.

7 MR. BELL: Now if I latch that turbine,  
8 that governor valve is going to be fully open, and  
9 you would expect when the turbine is reset that its  
10 speed would go to a maximum volume and give you a  
11 large amount of flow into the steam generators?

12 MR. YOUNG: Yes.

13 MR. BEARD: Would it be your expectation  
14 that as soon as the overspeed trip device was reset,  
15 then you would have steam flow and hence AFW flow?

16 MR. YOUNG: Yes.

17 MR. BEARD: Okay.

18 MR. LANNING: What was the reason the  
19 pumps tripped? Were you able to determine that  
20 from the control panels?

21 MR. YOUNG: No.

22 MR. LANNING: How would you determine  
23 that? How was that determined?

24 MR. YOUNG: The overspeed trip, I could

1 not determine the reason. I could only determine  
2 that they actually did.

3 MR. LANNING: How do you do that?

4 MR. YOUNG: Enunciator lights.

5 MR. LANNING: It says aux feedwater pump  
6 one tripped?

7 MR. YOUNG: Overspeed trip.

8 MR. LANNING: Overspeed trip, okay. Can  
9 you reset that trip from the control room?

10 MR. YOUNG: No.

11 MR. ROSSI: Now, at this point in time,  
12 you had aux feedwater pump No. 1 overspeed trip and  
13 aux feedwater pump No. 2 overspeed trip by this  
14 point?

15 MR. YOUNG: Yes.

16 MR. ROSSI: So you had both of those  
17 enunciators?

18 MR. BEARD: And you had people going in  
19 all directions trying to get you some feed?

20 MR. YOUNG: Yes.

21 MR. BEARD: Can I take you to the next  
22 point of what -- who was successful first or how  
23 would you know that somebody out there trying to  
24 help you get some feed, who got there first?



1 MR. YOUNG: First thing that would happen  
2 was that AF-599 and 608 were opened. At that time  
3 I did not know who had been dispatched. I know  
4 somebody was. Then what came available next was  
5 the startup feedpump.

6 MR. BEARD: The startup feedpump, what  
7 happened on it?

8 MR. YOUNG: Well, that was basically the  
9 next step I was getting to. After the operator I  
10 sent back to SP7A and B reset those valves and came  
11 around front, I asked him to reset the atmospheric  
12 vent valves which requires placing them in the hand.  
13 I flipped one into hand.

14 I had let go one of the throttle  
15 governors. At that time I didn't feel I met the  
16 time requirements for running the governors up to  
17 the high speed stop. I brought my knee up using it  
18 to hold the governor on the other controller to the  
19 increased position, and flipped the No. 1 side into  
20 hand.

21 MR. BEARD: You were pretty busy then?

22 MR. YOUNG: Yes, trying to reestablish  
23 making sure my turbines were at the high speed  
24 stops and a flow path available for the startup

1 feedpump.

2 MR. BEARD: Okay. Now, what was your  
3 first indication that one of these various pumps  
4 was either running or was available for start or  
5 whatever?

6 MR. YOUNG: Well, my first indication was  
7 the call from Steve Feasel. He had the startup  
8 feedpump available.

9 MR. BEARD: Okay. You had no indication  
10 that the aux feed pump folks had gotten you flow  
11 through any of those directions?

12 MR. YOUNG: That is correct. I observed  
13 while I was standing there no speed on the  
14 indicators.

15 MR. BEARD: Okay. So he called and told  
16 you the system was available. And I assume by that  
17 you mean the various valves had been repositioned  
18 so that the pump was now available for starting  
19 purposes?

20 MR. YOUNG: Yes.

21 MR. BEARD: And that start would normally  
22 take place where?

23 MR. YOUNG: From the control room.

24 MR. BEARD: Okay.

1 MR. BELL: Why did you want the  
2 atmospheric vents reset?

3 MR. YOUNG: Why? It was an operable or  
4 opportune time. The other RO was at the back panel  
5 nearer them, and I decided at that time rather than  
6 at another time when he might be needed on the  
7 primary side to have him open them or reset them  
8 for my control.

9 MR. BEARD: So it was convenient.

10 MR. YOUNG: Yes.

11 MR. BELL: Now, when those valves reset  
12 and you shifted to ICS -- do they have an ICS  
13 station?

14 MR. YOUNG: Yes.

15 MR. BELL: And when you shifted that ICS  
16 station to hand, would you not have a demand signal  
17 there to call for those valves to be open?

18 MR. YOUNG: As long as I had the manual  
19 rheostat, basically is what it is, valve to zero,  
20 there would be no demand once I flipped them into  
21 hand.

22 MR. BELL: And you dialed this rheostat  
23 to zero before you flipped them to hand?

24 MR. YOUNG: No. It's standard to leave

1    them that way.

2           MR. BELL:   So the valves did come open  
3    when the SFRCS signal was reset?

4           MR. YOUNG:   No. 2, I was successful  
5    before he had punched auto on the valves which  
6    would reset them.   No. 1, I did observe it did come  
7    open.

8           MR. BEARD:   You used the manual loaders  
9    the Baily system provides you are talking about for  
10   the hand operation?

11          MR. YOUNG:   Yes.

12          MR. BEARD:   Okay.   It has a little thumb  
13   wheel I think below it that has a meter that  
14   indicates a valve position typically and a little  
15   thumb knob you can adjust the manual setpoint with.

16          MR. YOUNG:   No.   It has a small meter,  
17   zero to hundred percent, with a rheostat knob type.

18          MR. BEARD:   Knob.   Like a volume control  
19   on your radio.

20          MR. YOUNG:   Yes.

21          MR. ROSSI:   Okay.   Let's see.   At one  
22   point you had said that auxiliary feedwater valves  
23   599 and 608 were opened?

24          MR. YOUNG:   Yes.

1 MR. ROSSI: And you observed that from  
2 the --

3 MR. YOUNG: No, I was told that they were  
4 open.

5 MR. ROSSI: That you were told they were  
6 open by someone in the control room or by --

7 MR. YOUNG: Shift supervisor.

8 MR. ROSSI: So he told you they were open  
9 and then you were told again I guess that the  
10 startup feedwater pump was available, and that was  
11 by communications with Steve Feasel?

12 MR. YOUNG: Yes.

13 MR. ROSSI: Okay. Then why don't you  
14 proceed.

15 MR. BELL: Getting back to Mr. Lanning's  
16 point, even with the 599 and 608 open, there are  
17 still valves closed on the discharge of the  
18 auxiliary feedwater pump that would prevent those  
19 pumps --

20 MR. YOUNG: No. The segregation valves  
21 had repositioned. I noted that.

22 MR. BELL: Okay.

23 MR. YOUNG: They were lined up in --

24 MR. BEARD: Why -- did the segregation

1 valves reposition automatically?

2 MR. YOUNG: Yes.

3 MR. BEARD: What automatic condition  
4 would cause those to reposition versus staying in  
5 whatever position they were?

6 MR. YOUNG: SFRCS actuation of low level  
7 that we manually put in there.

8 MR. BEARD: Okay. So that if the system  
9 had been configured in I'll call it the cross-over  
10 configuration where the feedpump feeds the opposite  
11 generator, that on low level actuation of the  
12 Rupture Control System, those cross-over valves  
13 would be realigned so the aux feed would feed their  
14 associated generators?

15 MR. YOUNG: As long as the low pressure  
16 trips were cleared.

17 MR. BEARD: As long as -- that was the  
18 only thing?

19 MR. YOUNG: Yes.

20 MR. LANNING: Did you start feeding with  
21 the startup feedwater pump immediately after you  
22 were told it was available?

23 MR. YOUNG: Well, before I was told it  
24 was available, I ran -- I had taken both the



1 startup valves and ran the valves open to the crack  
2 point. I am very familiar with the crack point on  
3 demand meter. Then at that time when I had  
4 accomplished this, Steve Feasel gave me a call and  
5 stated the feedpump was available.

6 MR. BEARD: So the valves were off their  
7 seats? Is that what you mean by the crack point?

8 MR. YOUNG: They were just below or just  
9 at the point of cracking open.

10 MR. BEARD: I see.

11 MR. ROSSI: Now, that was the demand to  
12 the valves, not the actual position; is that  
13 correct?

14 MR. YOUNG: That is correct.

15 MR. ROSSI: I mean, you had demanded them  
16 to the cracked position with a signal?

17 MR. YOUNG: Yes.

18 MR. ROSSI: But what did you know at that  
19 point in time about the actual position of the  
20 valves?

21 MR. YOUNG: Nothing at all.

22 MR. ROSSI: Okay.

23 MR. YOUNG: I also -- when the RO that  
24 reset them came back around the panel, he said he

1 could not get Channel 4 to reset by an indication  
2 light in the back of the control room.

3 MR. BEARD: This is Channel 4 of what?

4 MR. YOUNG: SFRCS.

5 MR. BEARD: Is there any name or any  
6 descriptive you can help me understand what Channel  
7 4 means?

8 MR. YOUNG: There is four parameter  
9 channels in SFRCS with two actuation channels. Two  
10 parameter channels feed each actuation channel.

11 MR. BEARD: All right.

12 MR. YOUNG: Is that enough?

13 MR. BEARD: Which one would be No. 4?

14 MR. YOUNG: It would be for the No. 2  
15 side.

16 MR. BEARD: Of what parameter?

17 MR. YOUNG: Of the actuation channels.

18 MR. BEARD: I'm thinking, are we talking  
19 about a level channel or pressure channel?

20 MR. YOUNG: What I mean by parameter  
21 channel is that there is -- each parameter channel  
22 monitors level, pressure, feedwater delta P or,  
23 excuse me, check valve delta P for the feedwater  
24 and RCPS.

1 MR. BEARD: So all four of those  
2 different parameters are brought together in a  
3 family?

4 MR. YOUNG: Yes.

5 MR. BEARD: And then a trip of either --  
6 any one of those four constitutes something?

7 MR. YOUNG: Yes.

8 MR. BEARD: And you are saying the forth  
9 of those families could not be reset?

10 MR. YOUNG: No. Not of the -- what I am  
11 saying is that the startup valves require two  
12 channels to be tripped, two parameter channels to  
13 be tripped for both of them to go closed; okay?  
14 Then if you cannot reset the solenoids for one of  
15 those four signals, which is what we assumed, then  
16 that channel would not be blocked.

17 MR. BEARD: Or reset?

18 MR. YOUNG: Yes.

19 MR. BEARD: Not cleared?

20 MR. YOUNG: Yes.

21 MR. BEARD: So does this represent that  
22 previously you had two of these four I'll call them  
23 families or parameter channels in a trip mode that  
24 made kind of a classical two out of four logic, and

1 that's what happened?

2 MR. YOUNG: Yes.

3 MR. BEARD: And in the resetting/clearing  
4 effort, at least three of them were cleared but  
5 there was one that remained in a trip mode?

6 MR. YOUNG: Yes.

7 MR. BEARD: And this would mean you would  
8 be left then with one out of four tripped. Now,  
9 would that cause any actuation or is that like a  
10 half trip?

11 MR. YOUNG: That's a half trip still.

12 MR. BEARD: But you would be able to do  
13 everything you wanted to do?

14 MR. YOUNG: Yes.

15 MR. ROSSI: Including opening both of the  
16 startup valves? I mean, that should not normally  
17 prevent you from opening the startup valve, the  
18 fact that Channel 4 of SFRCS had not reset?

19 MR. YOUNG: That is correct.

20 MR. ROSSI: Okay.

21 MR. YOUNG: I opened up both startup  
22 valves at that time to the crack points, as I was  
23 stating. That way I could use either valve when  
24 the startup pump became available. Then I started

1 the startup feedpump and immediately grabbed the B  
2 startup valve, SP7B.

3 MR. BELL: That feeds which steam  
4 generator?

5 MR. YOUNG: No. 1. At that time I also  
6 had a call from the people that I had at the aux  
7 feedpump. We -- he was resetting No. 1. They  
8 opened up the valve, and at that time it only came  
9 up to twenty-two hundred rpm.

10 MR. BELL: Is twenty-two hundred rpm a  
11 sufficient speed to cause steam generator feed?

12 MR. YOUNG: No, it isn't.

13 MR. BELL: I have got one more -- okay.  
14 Go ahead, please.

15 Now you have got the startup pump on and  
16 you have got SP7B open?

17 MR. YOUNG: Yes.

18 MR. BELL: Now, what's your status? Have  
19 you got feedwater flow established to the steam  
20 generators?

21 MR. YOUNG: Yes, I do.

22 MR. BELL: How and when was the main  
23 feedwater isolation valve on that side opened?  
24 Because if that valve is closed, you don't have

1 feedwater flow.

2 MR. YOUNG: That is correct. I had asked  
3 Ted Lehman to block and open the mains.

4 MR. BELL: During what period of time?

5 MR. YOUNG: During the time that Rick  
6 Walleman was in the back control room.

7 MR. BELL: Rick who?

8 MR. YOUNG: He's the other RO.

9 MR. BELL: But this was before you  
10 received the call from Steve telling you that he  
11 had the startup feedpump available?

12 MR. YOUNG: That is correct. I had  
13 reestablished the flow path.

14 MR. BEARD: Which included reopening the  
15 MSIVs.

16 MR. BELL: The main feedwater isolation  
17 valves?

18 MR. YOUNG: No, main feedwater isolation.  
19 When I did tell Ted Lehman to open the main  
20 feedwater isolations, that the block valves were  
21 closed, which are for the main feedwater control  
22 valves.

23 MR. ROSSI: Okay. So now you started up  
24 the startup feedpump and you have SP7B open and you



1 now noted that auxiliary feedwater pump No. 1 came  
2 up only to twenty-two hundred rpm.

3 MR. BEARD: What's nominal full proper  
4 speed for that?

5 MR. YOUNG: Thirty-six hundred.

6 MR. BEARD: Thirty-six hundred. So it  
7 was two-thirds of the way up?

8 MR. YOUNG: Yes.

9 MR. ROSSI: Okay. Why don't you proceed.

10 MR. YOUNG: I also noted at this time  
11 that No. 1 steam generator pressure was dropping  
12 off rapidly. Just before I had received a call  
13 from Jeff Meleg, it had dialed in a slight demand  
14 open on the No. 1 atmospheric vent valve to prevent  
15 from lifting the safeties once the steam generator  
16 pressure was reestablished in the No. 1.

17 When I noted that the steam generator  
18 pressure was dropping rather rapidly and unexpected,  
19 I reclosed the atmospheric vent valve.

20 MR. BELL: Is No. 1 steam generator  
21 pressure dropping because you got the atmospheric  
22 vent valve open or because the No. 1 steam  
23 generator is dry?

24 MR. YOUNG: I could not make that

1 determination, whether it was the feedwater I was  
2 pumping in was quenching the steam or whether it  
3 was because I had the atmospheric vent valve open  
4 at that time. I could not make that determination  
5 other than I was losing pressure and I had to stop  
6 my leaks somewhere. And I chose the atmospheric  
7 vent valve by reclosing that.

8 MR. ROSSI: What happened to the steam  
9 generator pressure when you reclosed it?

10 MR. YOUNG: I noticed that -- I took the  
11 time out at that time to pick up the phone to Jeff  
12 Meleg and saw the turbine come up to speed to  
13 twenty-two hundred rpm, then I looked back and saw  
14 it was coming back up.

15 MR. ROSSI: The pressure was coming back  
16 up?

17 MR. YOUNG: Yes.

18 MR. ROSSI: After the auxiliary feedwater  
19 pump No. 1 came back up to twenty-two hundred rpm?

20 MR. YOUNG: Yes.

21 MR. ROSSI: Let's see. The No. 1  
22 auxiliary feedwater pump feeds the No. 1 steam  
23 generator; is that right?

24 MR. YOUNG: Yes.

1 MR. ROSSI: But valve SP7B also feeds the  
2 No. 1 steam generator?

3 MR. YOUNG: Yes.

4 MR. ROSSI: Okay. So both the first  
5 auxiliary feedwater pump that came up to speed and  
6 the first startup feedwater pump valve that got  
7 opened both went to the No. 1 steam generator?

8 MR. YOUNG: Yes.

9 MR. ROSSI: Okay. What did you observe  
10 at about this time about auxiliary feedwater pump  
11 No. 2?

12 MR. YOUNG: I had no flow on it.

13 MR. ROSSI: You had no flow.

14 MR. YOUNG: It only had six hundred  
15 pounds discharge pressure which I was aware of had --  
16 was not enough pressure to push any water in. It  
17 was at that time I knew I had 350 pounds pressure  
18 in the steam generator, and that's when I decided  
19 to reshut the atmospheric vent valve.

20 Then once I had saw that the steam  
21 pressure was returning, I took the aux feedwater  
22 governor in hand, selected auto essential and tried  
23 to give control of it to the automatic feeder or  
24 the governor.

1           MR. BEARD:   Which aux feedpump are you  
2 talking about now?

3           MR. YOUNG:   No. 1.

4           MR. BEARD:   There were people down there  
5 working on that reset?

6           MR. YOUNG:   They had reset it at that  
7 time.

8           MR. BEARD:   But I mean, were there people  
9 still in that room working on that pump or that  
10 turbine trying to get you back on line?

11          MR. YOUNG:   That I do not know.

12          MR. ROSSI:   Well, at this point --

13          MR. YOUNG:   Excuse me.   Let me clarify  
14 what I was saying.   I was on the phone with the EO  
15 that was down there talking to him about that pump.  
16 There was two other EOs in the startup feedpump  
17 that I knew of or, excuse me, the aux feedpump room  
18 that I knew of.   As to what they were doing, I do  
19 not know.

20          MR. BEARD:   But in any event, you were in  
21 direct communications with some of the workers that  
22 were at that end of the game trying to get you on  
23 line.   And I guess the two of you agreed or decided  
24 to put this in auto essential?

1 MR. YOUNG: I decided on my own.

2 MR. BEARD: And you told them that?

3 MR. YOUNG: No. That had no bearing to  
4 them at all how I was trying to get the speed to  
5 increase.

6 MR. BEARD: Okay.

7 MR. YOUNG: Then I saw no response. I  
8 put it back on the manual, went to increase on the  
9 manual control, still no response.

10 I asked the equipment operator if he saw  
11 any motion in the governor motor. He said he did  
12 and it was just turning.

13 I then said, Did you see any movement in  
14 the governor itself? And he said no.

15 And I asked him -- at that point I knew I  
16 was not going to be successful in getting that pump  
17 going. I said, Do anything you can to get the  
18 speed increased.

19 MR. ROSSI: It was still at this point in  
20 time at around twenty-two hundred rpm; is that  
21 correct?

22 MR. YOUNG: Yes.

23 MR. BELL: Can you give us an estimation  
24 of that pump's discharge pressure?

1 MR. YOUNG: Approximately six hundred  
2 pounds.

3 MR. BELL: I thought you said that was  
4 No. 2?

5 MR. YOUNG: No. 1.

6 MR. BELL: No. 1 auxiliary feedpump is at  
7 twenty-two hundred rpm and six hundred pounds  
8 discharge pressure?

9 MR. YOUNG: That is correct.

10 MR. BEARD: That's what I remember he  
11 said.

12 MR. BURNS: You were speaking on the  
13 phone to Jeff Maleg?

14 MR. YOUNG: Yes.

15 MR. BELL: That's who the equipment  
16 operator down there was?

17 MR. YOUNG: Yes.

18 MR. BEARD: And your final instructions I  
19 guess to them were, Do whatever you can to get me  
20 some speed on that thing?

21 MR. YOUNG: Yes.

22 MR. BEARD: And then at that time did you  
23 terminate the conversation, I mean, like hang up  
24 the phone?



1 MR. YOUNG: No.

2 MR. BEARD: Okay.

3 MR. YOUNG: Then another equipment  
4 operator came on the line saying that they were  
5 resetting No. 2, that one came up to speed and  
6 tripped.

7 MR. BEARD: Tripped?

8 MR. YOUNG: It just tripped on it. As to  
9 the reason why, I do not know. I didn't get much  
10 speed.

11 MR. BEARD: So there was clearing of the  
12 No. 2 initial overspeed trip and then that allowed  
13 steam to flow into the turbine and come up to do  
14 whatever it was. And something caused a second  
15 trip?

16 MR. YOUNG: Yes.

17 MR. BEARD: And you are not concerned  
18 right now with the cause of that second trip, but  
19 it did trip the second time?

20 MR. YOUNG: Yes. The same time I noted  
21 that No. 1 had tripped a second time.

22 MR. BEARD: Oh, I see. No. 1 had tripped?

23 MR. YOUNG: No. 2 had tripped a second  
24 time and No. 1 had tripped a second time.

1 MR. BEARD: Now, No. 1, if I remember  
2 back on that one, that's the one that we left at  
3 twenty-two hundred rpm and around six hundred and  
4 some pounds and your folks down there were trying  
5 to get you some speed?

6 MR. YOUNG: Yes.

7 MR. BEARD: Is there any sort of trip  
8 that you would have expected to come in or do you  
9 think that second trip may have been associated to  
10 their efforts to try to get you some speed, or do  
11 you have any feel?

12 MR. YOUNG: I could make no determination  
13 on that.

14 MR. BEARD: So now both of them have  
15 tripped a second time?

16 MR. YOUNG: Yes.

17 MR. BEARD: Okay.

18 MR. ROSSI: Okay. Why don't you proceed.  
19 Do you have a question?

20 MR. BELL: Yes, sir.

21 MR. BEARD: He's being polite when he has  
22 a question instead of just speaking out like I do.

23 MR. BELL: The initial enunciators on  
24 both No. 1 and No. 2 auxiliary feedwater pump

1 turbines told you those turbines had tripped on  
2 overspeed.

3 MR. YOUNG: Yes.

4 MR. BELL: When they relatched the  
5 turbines, would that enunciator clear?

6 MR. YOUNG: It should have. I did not  
7 note it.

8 MR. BELL: So if it hadn't been cleared  
9 and those feedpump turbines had tripped again on  
10 overspeed, then without the alarm being cleared,  
11 you would have no information as to what caused  
12 that pump to trip the second time?

13 MR. YOUNG: That is correct.

14 MR. BEARD: If it were overspeed again.

15 MR. BELL: If it were overspeed again.

16 MR. BEARD: If it were on a different  
17 condition, I would suspect the new enunciator would  
18 have come in; right?

19 MR. YOUNG: There is no other condition  
20 that would trip that pump.

21 MR. BEARD: That's the only enunciator  
22 that you have on that trip?

23 MR. YOUNG: Yes.

24 MR. BELL: That was going to be my next

1 question. The only automatic trip on that pump is  
2 turbine overspeed?

3 MR. YOUNG: Yes.

4 MR. ROSSI: So presumably both auxiliary  
5 feedwater pump No. 2 and auxiliary feedwater pump  
6 No. 1 at this time had tripped again on overspeed?

7 MR. YOUNG: I could not make that  
8 determination.

9 MR. ROSSI: They just tripped?

10 MR. YOUNG: Yes.

11 MR. ROSSI: You don't know what tripped  
12 them. They had tripped?

13 MR. YOUNG: Yes.

14 MR. ROSSI: How did you know they had  
15 tripped? What was your information?

16 MR. YOUNG: No speed. The noise from the  
17 room was -- indicated turbine speed was decreasing.

18 MR. BEARD: There are other trips, but  
19 it's just the overspeed is the one that is  
20 annunciated in the control room?

21 MR. YOUNG: There is a low suction  
22 pressure that closes a valve.

23 MR. BEARD: But I mean, there are other  
24 signals or conditions that cause that pump to trip?

1 MR. YOUNG: No.

2 MR. BEARD: So the only trip, automatic  
3 trip is the overspeed?

4 MR. YOUNG: Yes.

5 MR. ROSSI: Okay. But in any event, you  
6 observed -- you had said that both of these pumps  
7 had tripped, and that observation was based on your  
8 observation of the pump speeds which you could see  
9 on meters?

10 MR. YOUNG: As well as noise.

11 MR. ROSSI: As well as what you heard in  
12 terms of the noise.

13 MR. BELL: Two points of clarification.  
14 The noise that you are talking about is a noise  
15 that you are hearing over the telephone?

16 MR. YOUNG: Yes.

17 MR. BELL: The second point, this No. 2  
18 auxiliary feedwater pump turbine is the same pump  
19 turbine that you used your knee to increase its  
20 speeds?

21 MR. YOUNG: No.

22 MR. BELL: Is that the No. 1?

23 MR. YOUNG: No. 1.

24 MR. BELL: But it is still in manual with

1 its hand control switch run up to maximum?

2 MR. YOUNG: Yes.

3 MR. ROSSI: Okay. Why don't you proceed.

4 MR. YOUNG: Okay. At that time the first  
5 EO was -- had seen speed coming up on No. 1 aux  
6 feed pump, but at thirty-six hundred rpm, again the  
7 pump tripped. The rpm started to die off.

8 MR. ROSSI: This is a third time now of  
9 auxiliary feedwater pump No. 1.

10 MR. YOUNG: 1, yes. I also saw by the  
11 alarms that I had a low pressure or a low suction  
12 pressure transfer of normal suction to service  
13 water.

14 MR. BEARD: This is essentially in  
15 conjunction or at the same time that you got the  
16 third trip?

17 MR. YOUNG: Yes.

18 MR. BEARD: Okay.

19 MR. BELL: What's the status of the No. 2  
20 auxiliary feedwater pump right now? Is it still  
21 tripped?

22 MR. YOUNG: Yes. At that time, I watched  
23 the suction valves open, I asked Ted Lehman to  
24 close the service water valve once it opened -- or



1   excuse me, I had asked Ted Lehman to close the  
2   service water valve, but then I changed my mind so  
3   that I could wait for the normal suction to insure  
4   that would stay open.

5           I reopened the normal suction. Once it  
6   was opened, I said it was okay, and he closed the  
7   service water suction.

8           MR. ROSSI: Now, at this point in time,  
9   you have feed from the startup feedwater pump --

10          MR. YOUNG: Yes.

11          MR. ROSSI: -- to the No. 1 steam  
12   generator. And how did you know you had flow from  
13   the startup feedwater pump to the No. 1 steam  
14   generator?

15          MR. YOUNG: By discharge pressure of the  
16   pump. The water was going somewhere and when I had  
17   started, I observed discharge pressure come up  
18   rather slowly and then I was running out the pump  
19   at the time.

20          During that whole time I didn't have time  
21   to readjust pressure, but it was sitting at about  
22   eight hundred pounds discharge pressure when normal  
23   discharge pressure is eleven hundred on recirc and  
24   nine hundred maximum flow.

1 MR. ROSSI: So eight hundred is what you  
2 would expect assuming it was actually delivering  
3 flow to the steam generator?

4 MR. YOUNG: Nine hundred would be the  
5 maximum I would want. But eight hundred was what I  
6 had.

7 MR. BEARD: So you deduced from that  
8 pressure indication the pumps were running out; it  
9 was pumping for all it's worth. Also your break  
10 flow --

11 MR. YOUNG: Also I knew I had some flow  
12 because pressure was also regained.

13 MR. BELL: During this period of time,  
14 that feedwater system has been setting over there  
15 with, what, four hundred degree water in it?

16 MR. YOUNG: Yes.

17 MR. BELL: Is there any possibility there  
18 was some flashing in the feedwater piping in those  
19 high pressure heaters up to the feed reg valves?

20 MR. YOUNG: Flashing? I could not tell  
21 you that for sure. I would have no way to indicate  
22 that. I would hear water hammering once I started  
23 that startup feedpump and started feeding the steam  
24 generator, but I did not hear anything.

1 MR. BELL: But if that pump was  
2 collapsing steam in the piping, wouldn't it take a  
3 while for its discharge pressure to build up?

4 MR. YOUNG: Yes, it would.

5 MR. BELL: But you have no indication  
6 that was taking place?

7 MR. YOUNG: That is correct. I had no  
8 sure way.

9 MR. ROSSI: Okay. Why don't you continue.  
10 The last thing I believe I had was that auxiliary  
11 feedwater pump No. 1 had tripped a third time?

12 MR. YOUNG: Yes.

13 MR. ROSSI: Okay. And auxiliary  
14 feedwater pump No. 2 I guess at that point is still  
15 tripped?

16 MR. YOUNG: Tripped.

17 MR. ROSSI: Trip meaning you observed the  
18 speed was zero?

19 MR. YOUNG: Yes.

20 MR. ROSSI: Okay. Why don't you go ahead.

21 MR. YOUNG: Then at that time, the  
22 equipment operator came back on the line that was  
23 working on No. 2 pump, and I saw the speed coming  
24 up and he says -- we were talking at that time,

1 started feeding No. 1 or, excuse me, No. 2 steam  
2 generator. I saw flow come up and then at the same  
3 time we started getting No. 1 back.

4 MR. BEARD: So the first of the aux feed  
5 pumps that was able to get up to speed and start  
6 causing water flow was No. 2?

7 MR. YOUNG: Yes.

8 MR. BEARD: And you ascertained that  
9 because you saw it flow, and I assume you saw the  
10 proper speed indications?

11 MR. YOUNG: Yes.

12 MR. ROSSI: What did this speed come up  
13 to, do you remember?

14 MR. YOUNG: Thirty-seven hundred rpm.

15 MR. BEARD: Okay. And then immediately  
16 or shortly thereafter then you saw some indications  
17 on No. 1?

18 MR. YOUNG: I don't know the exact time  
19 frame. Everything was moving pretty fast.

20 MR. BEARD: The next thing was No. 1?

21 MR. YOUNG: Yes.

22 MR. BEARD: And what kind of indication  
23 did you get on No. 1?

24 MR. YOUNG: Increasing speed. Flow I did

1 not observe at that time as I looked over to  
2 observe steam generator levels.

3 MR. ROSSI: How far up did the auxiliary  
4 feedwater pump No. 1 speed come at this time?

5 MR. YOUNG: I saw it was going greater  
6 than three thousand rpm, and I looked away to the  
7 levels, I looked at No. 2. I saw it at that time  
8 go above fifty and still increased.

9 MR. BEARD: Is this the level in steam  
10 generator No. 1?

11 MR. YOUNG: 2.

12 MR. BEARD: Was increased and gone above  
13 fifty inches?

14 MR. YOUNG: Yes.

15 MR. BEARD: Okay.

16 MR. BELL: We had been feeding No. 1  
17 steam generator for a few seconds at least by now.  
18 Do you have any level indication in No. 1 steam  
19 generator?

20 MR. YOUNG: No. I didn't observe any  
21 detectible increase in steam generator level until  
22 we got the aux feedpump going.

23 MR. BELL: Even with the startup feedpump  
24 running and the SF7B?

1 MR. YOUNG: B.

2 MR. BELL: Open.

3 MR. YOUNG: SP7B open.

4 MR. BELL: SP7B open. You still weren't  
5 able to establish a level in steam generator No. 1?

6 MR. YOUNG: No. I wouldn't really expect  
7 it for a little while.

8 MR. ROSSI: What was the level reading in  
9 the No. 1 steam generator when you were using only  
10 the startup feedpump?

11 MR. YOUNG: Ten inches. No. 2 was reading  
12 twelve inches.

13 MR. BEARD: I don't want to break your  
14 train of thought, but a thought occurred to me I  
15 need to get off my mind before I forget it. You  
16 had indicated a few minutes ago with regard to a  
17 different thought that the pressure in at least one  
18 of the steam generators was around eight hundred  
19 fifty?

20 MR. YOUNG: That was during the time that  
21 I had just started the startup feedpump.

22 MR. BEARD: Okay. And you had indicated  
23 just now that the levels were on the order of ten  
24 inches?



1 MR. YOUNG: Yes.

2 MR. BEARD: Was that level about the same  
3 as what it was at the time you had the eight  
4 hundred fifty?

5 MR. YOUNG: Yes.

6 MR. BEARD: Okay. Now, what I'm trying  
7 to get to is the condition of the steam generator  
8 being at that pressure and temperature or pressure  
9 and level, have you reached some trigger point in  
10 some procedure that says you ought to do something  
11 special?

12 MR. YOUNG: That does constitute a dry  
13 steam generator as well as an overheating event.

14 MR. BEARD: Overheating?

15 MR. YOUNG: Yes.

16 MR. BEARD: Okay. So you have reached  
17 some trigger point, if I can use that term, and  
18 having reached that trigger point, what would the  
19 training or plant procedures cause you to do having  
20 reached that trigger point?

21 MR. YOUNG: That would be to go on HPI  
22 makeup PORV cooling.

23 MR. BEARD: Makeup PORV cooling?

24 MR. YOUNG: Yes.

1 MR. BEARD: This is where you are feeding  
2 with the HPI and releasing through the PORV?

3 MR. YOUNG: Makeup pumps, HPI through the  
4 PORV.

5 MR. BEARD: All right. Is this form of  
6 cooling the same as what could be called feed and  
7 bleed?

8 MR. YOUNG: Yes.

9 MR. BEARD: Okay. Was this action  
10 initiating that mode performed?

11 MR. YOUNG: No. Some time before I had --  
12 I was able to obtain the startup feedpump -- this  
13 was something I forgot to mention was that I was  
14 watching my indication and I had noted the Th,  
15 which is a meter right above the aux feedwater  
16 station, had read 590, and had made the  
17 recommendation to the shift sup that we go on that  
18 type of the feed and bleed cooling that you are  
19 referring to.

20 MR. BEARD: Let me see if I understand  
21 what you just said. The Th meters in proximity to  
22 where you were working, it read 590, and based on  
23 that you made a recommendation to do what? I'm  
24 just asking you to repeat what you said.

1 MR. YOUNG: I had made the recommendation  
2 that we go on PORV cooling or feed and bleed --

3 MR. BEARD: Feed and bleed?

4 MR. YOUNG: -- as you refer to it. I had  
5 also noted that steam pressures were on a slight  
6 decrease.

7 MR. BEARD: What was the result of -- who  
8 did you make the recommendation to?

9 MR. YOUNG: A shift supervisor.

10 MR. BEARD: Ted --

11 MR. YOUNG: Ted Lehman.

12 MR. BEARD: Ted Lehman. What was his  
13 reaction to your recommendation?

14 MR. YOUNG: I noted he was on the phone  
15 to Bill O'Connor. He had said the same -- he had  
16 repeated what I said --

17 MR. BEARD: To you?

18 MR. YOUNG: -- to Bill O'Connor and hung  
19 up the phone. Then it was at that time that I got  
20 on the phone -- that I got on the phone with Steve  
21 Feasel, which was at the same time I was working  
22 with the startup valves. I had -- those could be  
23 held open while I was looking at this indication.

24 MR. BEARD: Right.

1 MR. YOUNG: And that was at that time we  
2 got the startup feedpump going.

3 MR. BEARD: Okay. Before the startup  
4 feedpump came up, had you received an answer to  
5 your recommendation to go on feed and bleed?

6 MR. YOUNG: No. At that point when I  
7 started with Steve Feasel I got too busy to hear  
8 anything.

9 MR. BEARD: I can understand you were  
10 busy. I guess about the time that you would have  
11 entered feed and bleed, you got the startup pump  
12 running?

13 MR. YOUNG: Yes.

14 MR. BEARD: Do you know if that feed and  
15 bleed option was considered again after that? For  
16 example, did you recommend it or did someone  
17 suggest it?

18 MR. YOUNG: No, I didn't. At the time  
19 the thought left my mind.

20 MR. BEARD: The thought left your mind  
21 because you had gotten some feed.

22 MR. YOUNG: Yes.

23 MR. BEARD: Do you feel like the amount  
24 of feed or the source of the feed or the feed rates

1 or whatever would constitute an alternate, an  
2 acceptable alternate to the feed and bleed mode or  
3 a better way to go, or what was your thinking?

4 MR. YOUNG: At that time the thought left  
5 my mind, I was reacting too much because I had to  
6 get to the aux feedpumps. That was of primary  
7 concern at that time. I was assuming that Ted  
8 Lehman was discussing it or whatever he was doing  
9 over there, they were taking care of that.

10 MR. BEARD: I see. And your first  
11 priority was the aux feedpumps?

12 MR. YOUNG: Yes.

13 MR. ROSSI: See, I had another question.  
14 I had asked earlier about the level in the No. 1  
15 steam generator when it was being fed with the  
16 startup feedwater pump, and I believe you said it  
17 was about ten inches?

18 MR. YOUNG: Yes.

19 MR. ROSSI: And just stayed at about ten  
20 inches during the time you were feeding with the  
21 startup feedwater pump?

22 MR. YOUNG: Yes.

23 MR. ROSSI: What about the steam  
24 generator pressure during that time for the No. 1

1 steam generator?

2 MR. YOUNG: It initially dropped, and  
3 that's when I closed the atmospheric vent valve and  
4 I noted that -- I did some other activities, and  
5 then I noted that it was increasing again. So I  
6 had it and I also noted discharge pressure was at  
7 eight hundred pounds. So I assumed that water was  
8 flowing in, rebuilding the pressure.

9 MR. BELL: I need some teaching probably  
10 on that point. You had a steam generator pressure  
11 that was in excess of eight hundred pounds?

12 MR. YOUNG: Yes.

13 MR. BELL: You had the main feeder  
14 isolation valve on No. 1 steam generator on. You  
15 had SP7B open, but your startup feedwater pump was  
16 only putting out eight hundred pounds pressure.  
17 How can you feed a steam generator that's eight  
18 hundred fifty pounds with a feedpump that's only  
19 putting out eight hundred pounds?

20 MR. YOUNG: Well, at that time, I made  
21 the assumption that that was happening.

22 MR. BELL: But how could that happen?  
23 Did you have any other indications? Did the  
24 startup feedwater flow transmitter tell you you



1 were feeding the steam generator?

2 MR. YOUNG: It's not enough flow to  
3 indicate on the startup flows.

4 MR. BEARD: Wait a minute. Let me see if  
5 I understand Larry's question. I think Larry is  
6 saying that what are your memories of the pressures  
7 were such that it would appear to us that maybe  
8 pressure and suction flow was not occurring. Let  
9 me go back to where you thought you were at the  
10 time.

11 Was it your belief, rightly or wrongly or  
12 accurate or inaccurate, that the pressure,  
13 discharge pressure being run out the value  
14 approximated the pressure in the steam generator  
15 and therefore you thought you were in run out and  
16 had a large flow?

17 MR. YOUNG: Yes.

18 MR. BEARD: In other words, that's where  
19 you were, because I think Larry is asking you a  
20 question of could that have been the right or an  
21 optimum conclusion, but nonetheless that's where  
22 you were?

23 MR. YOUNG: Yes.

24 MR. BELL: But the steam generator is in

1 the neighborhood of eight hundred fifty pounds;  
2 right?

3 MR. YOUNG: Yes.

4 MR. BELL: And the pump discharge  
5 pressure is in the neighborhood of eight hundred  
6 pounds.

7 MR. YOUNG: Yes.

8 MR. ROSSI: And it's a motor driven  
9 startup feedpump?

10 MR. YOUNG: Yes.

11 MR. ROSSI: And what did you know about  
12 the valve position, I guess it's SP7B?

13 MR. YOUNG: 7B. That it was  
14 approximately 20 percent open.

15 MR. ROSSI: You had a position indicator  
16 or demand?

17 MR. YOUNG: Demand indication.

18 MR. ROSSI: The demand was it was 20  
19 percent open?

20 MR. YOUNG: Yes.

21 MR. ROSSI: Okay.

22 MR. YOUNG: I also did note that pressure  
23 did increase on the pump.

24 MR. ROSSI: Pressure increased on the

1 pump?

2 MR. YOUNG: Yes.

3 MR. ROSSI: And how about in the steam  
4 generator, it was --

5 MR. YOUNG: It was dropping.

6 MR. ROSSI: Still the steam generator was  
7 dropping?

8 MR. YOUNG: Yes. I couldn't tell you  
9 what it dropped to. Things were moving too fast  
10 for me to make a good determination. I had to  
11 assume that at that time.

12 Then later on I, when I saw the steam  
13 generator pressure come back up, I did not know the  
14 pressure, the exact pressure, but I did know it was  
15 above nine hundred pounds on the discharge of the  
16 pump later on.

17 MR. ROSSI: On the startup feedwater pump?

18 MR. YOUNG: Yes. I was also -- I felt at  
19 that time also that I was -- I didn't have a valve  
20 up far enough open to startup SP7B open far enough,  
21 but then my concentration went back to the aux feed  
22 pumps which I thought was a more profitable  
23 prospect.

24 MR. BEARD: Were you finished with your

1 question?

2 MR. ROSSI: Yes, I think I finished.

3 MR. BEARD: With the -- this electric  
4 startup pump, with the conditions that you saw at  
5 certain speeds, certain pressure, certain various  
6 things, what sort of flow rate would you expect  
7 that flow pump to be?

8 MR. YOUNG: Initially it was probably --  
9 normal flow is 350 gpm. It was possibly in excess  
10 of four hundred.

11 MR. BEARD: Per run out conditions or  
12 what we perceive to be run out conditions?

13 MR. YOUNG: Yes.

14 MR. BEARD: All right. With four hundred  
15 gpm, forgetting this situation -- let me ask a  
16 hypothetical. On the once-through steam generator,  
17 with four hundred and some gpm of flow, starting  
18 from a dried-out condition, how rapidly would you  
19 expect the level to increase?

20 MR. YOUNG: Not very fast. It would  
21 flash to steam once it hit the generator.

22 MR. BEARD: That's right. You have a hot  
23 generator, so it would flash.

24 MR. ROSSI: The pressure of the steam

1 generator during this time, I mean, this is now in  
2 the steam generator, was it going up?

3 MR. YOUNG: Yes.

4 MR. ROSSI: The time after you started  
5 the startup feedwater pump, the pressure in the  
6 steam generator was increasing?

7 MR. YOUNG: Yes.

8 MR. ROSSI: And prior to starting the  
9 startup feedwater pump it was decreasing?

10 MR. YOUNG: I couldn't tell you that. I  
11 don't know.

12 MR. BEARD: We are getting into a lot of  
13 details and I realize that we are asking you to  
14 recall a tremendous amount of information. It's  
15 almost overwhelming, the things like what came  
16 first, was it up, down, numerical values.

17 And I think it's fair and it should be on  
18 the record that Mr. Young is here speaking without  
19 notes; this is totally from recall. And I think  
20 that's important to note.

21 I think you are doing what I consider to  
22 be a superb job of recall, and I just want to let  
23 you know and put you at ease. I think that's good.

24 MR. YOUNG: Thank you.

1 MR. BEARD: We are really trying to  
2 understand, that's all.

3 MR. YOUNG: No. I realize that I'm  
4 coming from memory, and I do forget to mention  
5 things and then I get it out of the sequence of  
6 events.

7 MR. ROSSI: Okay. Let's see. I'm not  
8 sure where we are. Maybe you ought to tell us  
9 where you think you were in your description and  
10 then go on from there of the event, or start at  
11 some point you think you have gotten up to in your  
12 description and then go on. Maybe that's the  
13 easiest thing to do.

14 MR. YOUNG: Okay. I had made -- I had  
15 been successful in getting back No. 2 with the help  
16 of the EOs, of course, getting the aux feed pump  
17 back that was feeding, I noted both rpm and flow.  
18 No. 1, with the help of the EOs, I was successful  
19 in getting that back up.

20 MR. BEARD: Excuse me, No. 2 aux  
21 feedwater flow would flow into what generator?

22 MR. YOUNG: No. 2.

23 MR. BEARD: And which startup valve would  
24 be involved?



1 MR. YOUNG: That would be SP7A.

2 MR. BEARD: Okay.

3 MR. YOUNG: Then I noted rpm on No. 1.

4 Then I went over to the startup ranges on steam  
5 generator level. I noted that it was at coming up  
6 to fifty inches, and went on through.

7 MR. ROSSI: That's the No. 2 steam  
8 generator now?

9 MR. YOUNG: Yes.

10 MR. LANNING: Which scale on the steam  
11 generator are you reading this off of?

12 MR. YOUNG: Startup range.

13 MR. LANNING: Thank you.

14 MR. YOUNG: I then took the manual  
15 controller on the No. 2 aux feedpump and tried to  
16 decrease the speed. I got no response out of it.  
17 I tried auto essential again. I went back to  
18 manual, then I hit increase again, no response.

19 At that time I told the EOs to throttle  
20 back on No. 2's trip throttle valve.

21 MR. BEARD: So that what I hear you  
22 describing is your EOs have been successful in  
23 getting you up to speed and getting some flow, but  
24 they didn't have control of the situation; it was a

1 wide open event?

2 MR. YOUNG: They didn't. At that point,  
3 I didn't think I needed them to control speed with  
4 the trip throttle valve.

5 MR. BEARD: Right.

6 MR. YOUNG: I assumed I would have  
7 governor control.

8 MR. BEARD: I'm confused on a point. We  
9 were just talking a minute ago about with the  
10 electric feedpump putting out on the order of four  
11 hundred gpm it would flash when it would hit the  
12 generator and would hit increased pressure?

13 MR. YOUNG: Yes.

14 MR. BEARD: And I think you are telling  
15 me when No. 2 Aux Feedwater Pump was coming up, it  
16 appeared you were saying you rapidly rose to fifty  
17 inches on the startup range, and at which point you  
18 started to cut back on it somewhat. Is this a more  
19 rapid rise than what we had on the startup pump?

20 MR. YOUNG: Yes. Because at that time it  
21 had approximately 1100 gpm.

22 MR. ROSSI: That's the flow rate of the  
23 auxiliary feedwater pumps is 1100 gpm. Is that a  
24 normal kind of auxiliary flow rate from those?

1 MR. YOUNG: Yes.

2 MR. BEARD: Is that from one or a total  
3 from the two?

4 MR. YOUNG: That's from one.

5 MR. BEARD: Okay.

6 MR. BELL: And the flow rate into No. 1  
7 steam generator from the No. 1 auxiliary feedwater  
8 pump is what value?

9 MR. YOUNG: I did not -- or it should be  
10 approximately the same; they are identical pumps.  
11 But I did not know the value at that time.

12 MR. BELL: But the pump is in service?

13 MR. YOUNG: Yes.

14 MR. BELL: And is feeding the steam  
15 generators

16 MR. YOUNG: Yes.

17 MR. ROSSI: And what's happening to the  
18 level now in steam generator No. 1?

19 MR. YOUNG: I noted it was still below  
20 fifty inches when I took -- I had the EOS take  
21 manual control.

22 MR. ROSSI: Of the No. 1 now?

23 MR. YOUNG: Of the No. 2.

24 MR. ROSSI: Of the No. 2?

1 MR. YOUNG: That was with the trip  
2 throttle valve.

3 MR. BEARD: When you got the two aux feed  
4 pumps running, did you experience any difficulty  
5 with the startup valve associated with the No. 2  
6 steam generator?

7 MR. YOUNG: No. I didn't even try that  
8 one.

9 MR. BEARD: If I remember the number, it  
10 was SP7A?

11 MR. YOUNG: I didn't try that one other  
12 than opening it up to the crack point.

13 MR. BEARD: The crack point being just  
14 ready to lift off the seat?

15 MR. YOUNG: Yes.

16 MR. BEARD: So where was the No. 1 and  
17 No. 2 aux feedwater delivering their flow to?

18 MR. YOUNG: Each to their own steam  
19 generators, No. 1 and No. 2.

20 MR. BEARD: Oh, wait a minute.

21 MR. ROSSI: They don't go through the  
22 startup.

23 MR. BEARD: That's right. They go  
24 through the separate ring. So if there were a

1 problem with the startup valve, you hadn't attempted  
2 to use it anyway?

3 MR. YOUNG: Right.

4 MR. BEARD: Okay.

5 MR. ROSSI: So I think you were at the  
6 point where you had told an EO to take manual  
7 control of the trip throttle valve on the No. 2  
8 auxiliary feedwater pump?

9 MR. YOUNG: Yes.

10 MR. ROSSI: Okay. And that was because  
11 you were up I guess above fifty inches level in the  
12 No. 2 steam generator on the startup range?

13 MR. YOUNG: Yes. I noted that when I  
14 looked back a second time, that the level was  
15 increasing above seventy-five and that's when I  
16 decided that the EOs should take manual control  
17 down there.

18 MR. LANNING: You could not control it  
19 from your work station?

20 MR. YOUNG: No.

21 MR. BEARD: I believe I heard you say a  
22 while ago you tried auto essential, you tried  
23 manual; you couldn't get either to work. So you  
24 told the guy to do it down there locally?

1 MR. YOUNG: Yes.

2 MR. BELL: And you're throttling the  
3 trip and throttle valve for the No. 2 auxiliary  
4 feedwater pump turbine which feeds the No. 2 OTSG?

5 MR. YOUNG: Yes, that's correct.

6 MR. BEARD: That's No. 2 you were having  
7 that trouble with, and you gave them local control.  
8 What about the No. 1 aux feedpump? Did you have  
9 control problems there?

10 MR. YOUNG: I did not even try it. I did  
11 not want to take the chance of -- I heard them over  
12 there mentioning that they were having trouble,  
13 they were going to go on HPI or piggyback of the  
14 HPI to help maintain steam -- pressurizer level.

15 MR. BEARD: You said you heard they were  
16 planning to do that or heard they had done that?

17 MR. YOUNG: I had heard they had planned  
18 on it. The other RO had directed I think it was  
19 Steve Feasel to do it. I don't remember any of the  
20 events over there that were going on. I did know  
21 they were having troubles maintaining pressure.

22 MR. BEARD: Yes.

23 MR. YOUNG: So at that time I neglected  
24 even trying No. 1 on the manual. I said that I



1 asked him to take the No. 1 trip throttle valve  
2 and --

3 MR. ROSSI: You mean the No. 2?

4 MR. YOUNG: No. 1. No. 2 was already  
5 throttled back at that time.

6 MR. ROSSI: So the EO was successful in  
7 throttling back on the No. 2 aux feedwater pump  
8 when you asked him to do it.

9 MR. YOUNG: Yes.

10 MR. ROSSI: And then go ahead.

11 MR. YOUNG: Then I asked him to throttle  
12 back on No. 1. I'm not trying it because I didn't  
13 think I would have the time to run the governor  
14 down and catch it, because it does take a few or a  
15 couple of seconds to catch it. And I also had  
16 trouble with it beforehand running at twenty-two  
17 hundred rpm.

18 MR. BELL: Brian, what's causing this  
19 reduction in RCS pressure and pressurizer level?

20 MR. YOUNG: What is causing it?

21 MR. BELL: Yes.

22 MR. YOUNG: My rapid overcooling by  
23 hitting the steam generators with aux feedwater.

24 MR. BEARD: So you felt that the control

1 of the steam generators was what has affected the  
2 primary system?

3 MR. YOUNG: Yes.

4 MR. BEARD: Were there any other  
5 conditions that you heard mentioned or were aware  
6 of that could have caused the primary system to  
7 have level or pressure problems?

8 MR. YOUNG: No. I was not aware of them  
9 at that time.

10 MR. BELL: Now, we have feedwater flow  
11 established to both steam generators. I imagine  
12 things are less hectic now than earlier?

13 MR. YOUNG: Yes. I was trying to  
14 communicate with the EOs, trying to maintain speed  
15 so that I did not get them too low in speed that I  
16 couldn't bring them up fast enough to maintain  
17 level.

18 MR. BELL: But your levels are  
19 satisfactory in the normal expected range for aux  
20 feedwater control?

21 MR. YOUNG: Yes, at that time.

22 MR. BELL: And subcooling margin, is it  
23 okay at this period of time? Have you glanced at  
24 that or can you see that from where you are?

1 MR. YOUNG: That is directly behind me.

2 MR. BELL: So you would have to turn  
3 around to look at subcool margin?

4 MR. YOUNG: Yes.

5 MR. LANNING: Is the aux feed pump in  
6 service now?

7 MR. YOUNG: Yes. I did close, once I did  
8 get both pumps throttled back locally, coordinating  
9 with the EOs, I did close 7A and B.

10 MR. BELL: So it's in service, but with  
11 7A and 7B closed, it's only pumping water through  
12 its recirculation path?

13 MR. O'CONNOR: Yes.

14 MR. BELL: Did you happen to observe the  
15 discharge pressure on the startup pump at this time?

16 MR. YOUNG: Yes. I started out about I  
17 think it was about 950 on the discharge, and then  
18 went on up after I had closed the valves.

19 MR. BEARD: Okay. And the reason you  
20 closed those valves, because you had been overfeeding,  
21 you are trying to maintain a level and you go back  
22 to your customary aux feed systems and try to  
23 control it with a startup?

24 MR. YOUNG: Well, at that time it was

1 post-trip startup feedpump, and I knew it didn't  
2 have enough capacity to remove the K heat. I also  
3 felt it would simplify things to get it out of the  
4 way.

5 MR. BEARD: I see. You mentioned that,  
6 backtracking just a bit, the level in I guess No. 2  
7 steam generator went through fifty inches and was  
8 increasing. That's when you told them to throttle  
9 back.

10 MR. YOUNG: No. That's when I tried to  
11 take manual control.

12 MR. BEARD: You tried to do it, okay. Do  
13 you remember the maximum level we got to before  
14 turn around, roughly?

15 MR. YOUNG: No.

16 MR. BEARD: Or just ballparking it?

17 MR. YOUNG: No. When I asked them to  
18 take manual control down there, I asked them, I  
19 looked back and saw it was about a little bit  
20 greater than seventy-five inches.

21 MR. BEARD: And seventy-five is where you  
22 ended up holding it, or did you bring it down to  
23 fifty?

24 MR. YOUNG: I brought it back down to

1 fifty, which is where we are supposed to maintain  
2 level.

3 MR. BEARD: That's on No. 2. On No. 1,  
4 did that level go higher than you wanted it initially  
5 and then have to bring it back?

6 MR. YOUNG: Yes. Because I was trying to  
7 work with No. 2 at that time.

8 MR. BEARD: I understand. But it did go  
9 high also?

10 MR. YOUNG: Yes. But not very much.

11 MR. BEARD: Just slightly overshoot then?

12 MR. YOUNG: Yes.

13 MR. ROSSI: And by overshoot, you mean a  
14 little bit over fifty?

15 MR. YOUNG: Yes.

16 MR. ROSSI: In Steam Generator 1.

17 MR. YOUNG: Yes. That's the reason I had  
18 them take that rather than attempt again to take  
19 the manual control.

20 MR. BEARD: So at this point, both steam  
21 generators are roughly fifty, the startup electric  
22 pump is valved off, the control of both aux feed  
23 pumps is being done locally by the EOS; is that  
24 correct?

1 MR. YOUNG: Yes.

2 MR. BEARD: So you are pretty steady now  
3 in terms of the K heat removal mode?

4 MR. YOUNG: Yes. It's at that time that  
5 I elected to try to put number -- use No. 2 aux  
6 feed's governor and try to take manual control to  
7 simplify things down there and relieve a man for  
8 other things. I took a governor and decreased it  
9 until it eventually took control.

10 It worked and I had them open up the  
11 valve and release the guy from down there, and I  
12 had manual control.

13 MR. BEARD: Is that the normal mode of  
14 control you would have used?

15 MR. YOUNG: Pardon?

16 MR. BEARD: The manual control on the  
17 main control board you were using, is that what  
18 normally, not in this situation, but in other  
19 post-trip situations, is that the way you normally  
20 would have used it?

21 MR. YOUNG: Yes.

22 MR. BEARD: There wasn't anything special  
23 about the way you were controlling the level?

24 MR. YOUNG: I still don't see what you



1 are trying to get at.

2 MR. BELL: In other words, if I get an  
3 SFRCS actuation on low OTSG level, it would  
4 normally be in auto essential?

5 MR. YOUNG: That's correct.

6 MR. BELL: To feed the steam generators  
7 up to some predetermined level. Then what would  
8 happen?

9 MR. YOUNG: Yes. Then, as long as  
10 everything worked right, then you would take manual  
11 control at that time. That would be a decision you  
12 would make in coordination with the shift  
13 supervisor to take manual control to vent -- well,  
14 the way the specific rule reads is that you are  
15 allowed to take manual control of the aux feedpump  
16 governor to prevent RCS pressure swings.

17 MR. BELL: Okay. But starting those  
18 feedpumps up after they tripped on overspeed, that  
19 would normally be done with the switch in auto  
20 essential. In other words, it's a little abnormal  
21 to be controlling that speed in manual to steam  
22 generator levels less than the auxiliary feedwater  
23 pump control setpoint.

24 MR. YOUNG: Yes.

1 MR. BEARD: But you had been through a  
2 situation where the pumps had failed, tripped out?

3 MR. YOUNG: Yes.

4 MR. BEARD: And you had people down there  
5 trying to get you back on line, and I will assume  
6 for the moment this afterwards resulted in  
7 subsequent trips or restart efforts ended up in  
8 trips and, as all part of that recovery getting you  
9 back on line, everything was done in manual, wasn't  
10 it?

11 MR. YOUNG: Yes.

12 MR. BEARD: It's just that you really  
13 never got into the automatic fill up to a certain  
14 level and then take manual control because of the  
15 failures you were experiencing?

16 MR. YOUNG: Yes.

17 MR. BEARD: I mean, the trips on the off  
18 speed pumps?

19 MR. YOUNG: Yes.

20 MR. BEARD: Okay. So that while the  
21 condition you had been through was unusual from a  
22 normal situation, it would not have been unexpected  
23 or unusual considering you had these trips and had  
24 people down there trying to get you back on line?

1 MR. YOUNG: That is correct.

2 MR. BEARD: I understand. Thank you.

3 MR. ROSSI: Okay. What happened after  
4 this then?

5 MR. YOUNG: It was at that time we were  
6 pretty much stable. I started talking to the other  
7 people in the room.

8 I noted that Louis Simon had showed up,  
9 and shortly thereafter Bill O'Connor. At that  
10 point in time I was still maintaining steam  
11 generator levels and pressurizer or, excuse me,  
12 steam generator pressure by use of the atmospheric  
13 vent valves.

14 MR. BEARD: So your duty station was  
15 pretty much under control and you were basically  
16 keeping it that way?

17 MR. YOUNG: Yes.

18 MR. BEARD: Were you aware of any other  
19 problems at the plant with malfunctioning equipment  
20 or plant conditions where that station hadn't  
21 gotten as well recovered as you had or were there  
22 any things --

23 MR. YOUNG: The only thing on the primary  
24 side, when I had gotten everything pretty much

1 stabilized, gotten everything under control, I  
2 could take time out to really concentrate what was  
3 going on on the primary side. That was pretty much  
4 under control.

5 Then Steve Feasel was going through the  
6 trip recovery procedure and vacuum was rather --  
7 how do I put it to make sure it's correct --  
8 absolute inches of vacuum was high. And we broke --

9 MR. BELL: You were losing condenser  
10 vacuum?

11 MR. YOUNG: Yes.

12 MR. BEARD: Okay. Following up on the  
13 same question I had before, did the other operator --  
14 what was his name? I have forgotten it.

15 MR. YOUNG: Rick Walleman.

16 MR. BEARD: Rick. Did he mention to you  
17 he had experienced any difficulties on the primary  
18 side?

19 MR. YOUNG: No, not at that time. He  
20 was -- he said that everything was pretty much  
21 under control. Pressurizer level was high, 280,  
22 and that pressure was coming back, was being  
23 restored.

24 Other than that, I had no indication from

1 him or anybody else that anything else was wrong.

2 MR. BEARD: Okay. And the last question  
3 in this series is that as far as you were aware --  
4 I think you indicated earlier you heard people  
5 planning to piggyback the LPI and HPI. Were you  
6 aware of whether they actually used the system in  
7 that mode or whether it was being used in that mode  
8 or what were you aware of?

9 MR. YOUNG: I did note that the low flow  
10 enunciators were on.

11 MR. BEARD: Low flow?

12 MR. YOUNG: Yes. For HPI.

13 MR. BEARD: Okay.

14 MR. YOUNG: Which are normally out when  
15 the pump is off and come on when the pump is started.  
16 Other than that, I didn't know too much about that,  
17 what they had done on that side.

18 MR. BEARD: I guess there is an  
19 additional one. As far as you are aware, there is  
20 no use of the feed and bleed mode of cooling?

21 MR. YOUNG: That is correct.

22 MR. BEARD: Okay.

23 MR. BELL: How long a time period has  
24 passed since you came out of the kitchen into the

1 control room and now you are stable? How long did  
2 it seem like to you?

3 MR. YOUNG: Seemed like ten years.

4 MR. BELL: I know you probably looked at  
5 the sequence of events and you know it's roughly,  
6 what, twenty minutes or something. But did it seem  
7 like it was a lot longer or a lot shorter?

8 MR. YOUNG: When I took time out to  
9 figure out how much time had passed, I would say  
10 roughly half hour, forty-five minutes. But I still  
11 didn't note the clock.

12 MR. BELL: I know. You get wrapped up  
13 with the plant and time goes by.

14 MR. BEARD: When you are having fun.

15 I guess we pretty much covered the event,  
16 haven't we, Rick?

17 MR. YOUNG: Yes.

18 MR. BEARD: Or Brian, I'm sorry.

19 Looking back on the event, did you have  
20 any general feelings as to what you had been  
21 through in the last ten years, as you put it? I  
22 mean, how did you feel? Had you been through a lot  
23 of excitement or a near tragedy or a pretty good  
24 drill? Just how did you feel about what had



1 happened?

2 MR. YOUNG: How did I feel? I felt  
3 like -- I had been through some other trips, you  
4 know. I felt nervous, hyper that like I wanted to  
5 jump and grab something. I'm trying to recall all  
6 the feelings. I just felt that I had just been  
7 through like you would feel in an accident.

8 MR. BEARD: You are referring to like an  
9 automobile accident?

10 MR. YOUNG: Yes, an automobile accident.  
11 Nothing serious, where you just hit a car; that  
12 your car is messed up and another person's car is  
13 messed up, and you felt just shaken up a little bit.

14 MR. BEARD: But nobody was killed as a  
15 result of the accident?

16 MR. YOUNG: No personal injury, nobody  
17 was hurt. It's just that you had done damage to  
18 your car and another person's car. It is that type  
19 of feeling.

20 MR. BELL: Did these events remind you of  
21 any other situations that you have read about or  
22 been trained on?

23 MR. YOUNG: Yes. An overheating event.

24 MR. LANNING: Have any other similar

1 events occur at Davis-Besse?

2 MR. YOUNG: No. That was the first time  
3 an event like that had really happened.

4 MR. LANNING: How about an event  
5 involving a dried-out steam generator?

6 MR. YOUNG: That I wasn't involved in  
7 other than the cool down portion of it. But I  
8 didn't see too much of the indication.

9 MR. LANNING: Were you briefed on that  
10 event?

11 MR. YOUNG: Yes, I was informed of it.  
12 But through my own personal training, it has some  
13 similarities but not a lot.

14 MR. LANNING: But I'm trying to get how  
15 you were briefed about it. Was it during a training  
16 course you were told about this event?

17 MR. YOUNG: No. I actually talked to the  
18 operators involved. There was also a TAP report  
19 put out on it.

20 MR. LANNING: What is a TAP report?

21 MR. YOUNG: Transient analysis program, I  
22 believe that's what it is.

23 MR. BEARD: Is this something put out by  
24 B & W?

1 MR. YOUNG: Yes.

2 MR. BELL: This event you are talking  
3 about, I think Wayne and you are talking about two  
4 separate events. Are you talking about the 1977  
5 event here?

6 MR. YOUNG: Year and a half ago I believe.

7 MR. BELL: Okay. That's right.

8 MR. YOUNG: It was in March of '84.

9 MR. LANNING: That's the one. Had you  
10 experienced previous trips of the auxiliary  
11 feedwater pumps on overspeed?

12 MR. YOUNG: No.

13 MR. LANNING: This was the first one you  
14 had to deal with?

15 MR. YOUNG: Myself personally, yes.

16 MR. BEARD: There have been others?

17 MR. YOUNG: No.

18 MR. BEARD: I was trying to understand.  
19 You said the first one you have experienced. Are  
20 you aware that the plant has experienced other  
21 trips of the aux feedwater on overspeed?

22 MR. YOUNG: No.

23 MR. LANNING: Are there actions that you  
24 must complete at the panel before this overspeed

1 trip can be reset locally?

2 MR. YOUNG: No.

3 MR. LANNING: No. When there are  
4 problems with equipment on the secondary side, do  
5 you initiate the work request?

6 MR. YOUNG: Yes. But not just myself.  
7 All the operators can initiate a work request.

8 MR. LANNING: What has been your  
9 experience with getting those work requests  
10 completed?

11 MR. YOUNG: My experience? It depends on  
12 the priority of the work request.

13 MR. ROSSI: Do you give a priority of a  
14 work request when you make one or does somebody  
15 else assign the priority to it?

16 MR. YOUNG: My foreman does or shift  
17 supervisor.

18 MR. ROSSI: Your shift supervisor assigns  
19 the priority of work requests?

20 MR. YOUNG: Yes.

21 MR. LANNING: Does your name go on that  
22 work request as having requested it?

23 MR. YOUNG: Yes.

24 MR. LANNING: How many of those have you

1 done recently?

2 MR. YOUNG: Recently? Within the last  
3 month, probably twenty.

4 MR. LANNING: Is that about an average  
5 number per month, twenty?

6 MR. YOUNG: Yes.

7 MR. LANNING: How many of those twenty  
8 would you guesstimate have been acted on by  
9 maintenance or whomever is necessary to fulfill  
10 that work request?

11 MR. YOUNG: That would be hard to say.

12 MR. LANNING: Let me ask --

13 MR. YOUNG: I get no real response on  
14 when I turn work requests in. I may get out of a  
15 hundred that I write, 5 percent or five of them  
16 have been returned from the engineer,  
17 acknowledgment of some sort.

18 MR. ROSSI: What happens to the other 95?  
19 Are they carried out or do they decide not to do  
20 them or --

21 MR. YOUNG: That I do not know fully. It  
22 may be they are working on FCRs for them.

23 MR. BEARD: FCR would be what?

24 MR. YOUNG: Field change request.

1 MR. BEARD: That's like a design change?

2 MR. YOUNG: Yes. Work is in progress  
3 still, engineer neglected to turn an answer on it.

4 MR. LANNING: Do you recall any specific  
5 problems that you had identified in the plant that  
6 have come back to mind subsequent to your  
7 submitting the work request and you have asked  
8 yourself, Hey, I put a work request in, why hasn't  
9 it been down?

10 MR. YOUNG: No, not offhand I can't think  
11 of any.

12 MR. LANNING: Okay.

13 MR. ROSSI: Well, the 5 percent that you  
14 get back results on work request, you get the work  
15 request back indicating the disposition of it or  
16 what they have done or what?

17 MR. YOUNG: Yes. Whether there has been  
18 an FCR issued, or they will say this MWO number has  
19 been written on it, some MWO, maintenance work  
20 order with a number behind it, they are working on  
21 it, so I can track it if I choose to.

22 MR. BEARD: So that of the 5 percent  
23 roughly you hear back on, the nearback may only  
24 mean, Okay, we have assigned a priority and we have



1 told the people to go work on it as contrasted to  
2 the work that's complete?

3 MR. YOUNG: Yes.

4 MR. BEARD: Okay. While Wayne is looking  
5 for his next question, let me ask you a different  
6 one. I was particularly intrigued with -- maybe  
7 intrigued is a poor choice of words. I was  
8 particularly interested in the description of the  
9 activities you went through to this event.

10 You were very busy. You were trying to  
11 do a number of important things simultaneously  
12 and I think at one point, I have forgotten both  
13 manipulations, you had both hands busy and you  
14 actually had lifted up your knee to use it on one  
15 of the controls. I think it was on the governor?

16 MR. YOUNG: No. I aux feed governor  
17 pistol grip.

18 MR. BEARD: I'm mentioning this in point  
19 of view on reflection, do you think the event or  
20 you would have been substantially assisted or needed  
21 an additional person in there like yourself for  
22 assistance? I don't mean that it just would have  
23 been nice. To do it right, you ought to have had  
24 another man?

1 MR. YOUNG: For that event, yes.

2 MR. BEARD: For this particular event?

3 MR. YOUNG: Yes.

4 MR. BEARD: I realize everybody who was  
5 at the site at that moment was very busy.

6 MR. YOUNG: Yes.

7 MR. BELL: Can you see the SPDS display  
8 from your station?

9 MR. YOUNG: It was behind me at that time.  
10 Along with the TSat meters.

11 MR. BELL: Was it working?

12 MR. YOUNG: The SPDS, one monitor was not  
13 working at all, the other monitor had garbage on it.

14 MR. BELL: Would those two monitors have  
15 helped you during the event had they been operable?

16 MR. YOUNG: I believe for myself, things  
17 were happening too fast for me to use them  
18 effectively. I could not tell you if it would have  
19 been even any help to Ted Lehman or the other RO.

20 MR. BEARD: That would be speculation on  
21 your part at any rate?

22 MR. YOUNG: Yes, it would.

23 MR. ROSSI: Could we go off the record a  
24 minute?

(Thereupon, a recess was taken.)

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Thursday Afternoon Session

June 13, 1985

12:30 o'clock p.m.

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MR. LANNING: I would like to discuss what alternate approaches were available to you to restore feedwater of any kind. For example, could you have performed any actions to recover the main feedwater pumps?

MR. YOUNG: Yes, there was. At that time, there was an operator that I knew of that was down at the boiler getting that brought up to pressure. We could have lined up aux steam to our main pumps at that time if the aux steam pumps efforts failed. I had been considering that and I was going to suggest that if those aux feedpumps did fail and we could not get them to stay on line.

MR. ROSSI: What sort of time frame would that have taken?

MR. YOUNG: Once the boiler was on up to pressure.

MR. ROSSI: Well, including getting the boiler up to pressure, I guess, after you actually sent somebody there to start that whole process,

1 roughly what time would it have taken?

2 MR. YOUNG: I cannot give you -- I hadn't  
3 been able to look at the header pressure of the aux  
4 steam system, which I did not know at that time, to  
5 give you a better estimate, but apparently the guy  
6 at the boiler was working on it. But as to how far  
7 it was up, I could not tell you, and the fact that  
8 to get the feedpump on itself would have only taken  
9 a matter of opening up two valves.

10 MR. LANNING: After the auxiliary boiler --

11 MR. YOUNG: No, my mistake. I forgot, we  
12 had lost vacuum at that time. It would have been  
13 considerable time. My mistake. The fact we had  
14 lost vacuum, to regain vacuum you would have had  
15 gone through quite an evolution, and there would  
16 have been considerable time frame.

17 MR. BELL: You are talking in excess of  
18 one hour probably, aren't you?

19 MR. YOUNG: Yes.

20 MR. BEARD: That was based, in other  
21 words, if I understand the way you are putting it,  
22 if we talked about the time from which the aux  
23 boiler is ready to when you could put the main feed  
24 on, it would have been a very brief period of time,

1 I gather, if vacuum was still available. But  
2 because the decision had been made to break vacuum  
3 and therefore it was no longer available, there  
4 would be some assessment --

5 MR. YOUNG: There are still other options  
6 with the main feedpumps. We can reset them without  
7 vacuum. We still had circ water flow available to  
8 cool the condenser. It would have been quite an  
9 effort and would have been quite an evolution to do  
10 it that way and would have been taking a chance,  
11 but that was also possible if we deemed it  
12 necessary.

13 MR. BEARD: Do you have a feel for what  
14 sort of time would have been involved in that sort  
15 of approach?

16 MR. YOUNG: It was just a matter of me  
17 hitting a button to block the vacuum trip and  
18 resetting the turbine and opening up the or the  
19 local operator opening up the steam supply once the  
20 boiler was available.

21 MR. BEARD: So you are still talking a  
22 few minutes after the boiler was available?

23 MR. YOUNG: Yes. That would be a  
24 decision made not by me, though.



1 MR. BEARD: I understand.

2 MR. ROSSI: The boiler, is this something  
3 that was -- I mean, could you give us a little more  
4 description of the boiler? Like what was its  
5 status before the event ever started, or do you  
6 know?

7 MR. YOUNG: The status of it was it was  
8 being banked at that time.

9 MR. ROSSI: Before the event?

10 MR. YOUNG: Yes. That there was quite a  
11 few controls and gauges down there not operable.  
12 It would have made it very difficult to operate,  
13 but it was still operable.

14 MR. BEARD: So in this particular  
15 situation, it would have taken a little time to get  
16 the boiler up?

17 MR. YOUNG: I cannot make that estimation  
18 with any kind of -- how do you put it? To be sure  
19 that it was an accurate estimate, I cannot make  
20 that.

21 MR. BEARD: I don't think we are trying  
22 to pin you down for an accurate estimate, Brian. I  
23 think we are trying to get some feel. Are we talking  
24 a few minutes, are we talking something an hour or

1 longer?

2 MR. YOUNG: I couldn't even tell you that,  
3 because I did not know the extent of the other  
4 service.

5 MR. BELL: When you regain vacuum, did  
6 you use the auxiliary turbine to seal the turbine  
7 and drive the air ejectors?

8 MR. YOUNG: Yes.

9 MR. BELL: So it was fired then?

10 MR. YOUNG: Yes.

11 MR. BEARD: But the vacuum was not  
12 regained for many hours afterwards.

13 MR. BELL: I realize that, but that means  
14 to me that the auxiliary boiler was capable of  
15 being used.

16 MR. ROSSI: What's the source of fuel for  
17 the aux boiler?

18 MR. YOUNG: It's the fuel oil.

19 MR. ROSSI: Fuel oil?

20 MR. YOUNG: Another case in point was the  
21 aux boiler was brought on -- brought up, and I  
22 don't know -- I can't remember what time frame it  
23 was brought up. I believe it was after we had  
24 stabilized. But we didn't have enough loads at

1 that time to maintain it on the header because we  
2 didn't have the personnel there available at the  
3 time, because the aux feedpump was running down  
4 there and then have the personnel available to put  
5 vacuum back in service.

6 MR. LANNING: Is it practical to have  
7 opened the Main Steam Isolation Valves?

8 MR. YOUNG: Practical? At that time?  
9 You could have opened up the MSIVs.

10 MR. LANNING: That would have given steam  
11 motive power to the main feedwater pumps.

12 MR. YOUNG: Yes. I have got to make sure  
13 I think of all the possibilities.

14 MR. ROSSI: Let me point one thing out.  
15 At the time we are talking where they didn't have  
16 any feed to the steam generators, they were very  
17 near to empty anyway. So, you know, opening up the  
18 main steamline isolation valves may not have gotten  
19 you the main feedwater pumps back if the steam  
20 generators were essentially empty at that point.

21 MR. YOUNG: But another case in point, it  
22 takes over a half hour to equalize pressure around  
23 them.

24 MR. LANNING: That's what I was getting

1 at. So really it would have taken at least a half  
2 an hour to open those MSIVs if there was adequate  
3 steam available to drive the pumps?

4 MR. YOUNG: Yes.

5 MR. BEARD: Brian, in the follow-up after  
6 the event, did you become aware of any subsequent  
7 damage to other plant equipment further down the  
8 road?

9 MR. YOUNG: I believe what you are trying  
10 to get at is the turbine bypass valves; correct?  
11 There was a water slug that hit that. We heard it  
12 quite well when we opened up the MSIVs.

13 MR. BEARD: Do you recall the time frame?

14 MR. YOUNG: That was after we had  
15 established vacuum. I would say that occurred  
16 right about 7:00 -- 6:30, 7:00 in the morning.

17 MR. BEARD: 6:30 or 7:00. So you are  
18 talking about five hours or more after the start of  
19 the event?

20 MR. YOUNG: Yes.

21 MR. ROSSI: But you did hear this water  
22 slug when you opened the MSIVs?

23 MR. YOUNG: Yes.

24 MR. BEARD: Does the effect of the damage

1 to that valve, did that have any bearing on the  
2 safety of the plant at that point in time?

3 MR. YOUNG: No. The only thing that  
4 happened was the atmospheric vent valve had reopened.

5 MR. BEARD: Because of the failure?

6 MR. YOUNG: Yes.

7 MR. BEARD: Okay. So the atmospheric  
8 dump popped one more time. I'm just trying to get  
9 from an operator's perspective some assessment of  
10 the significance of that failure. I get the feeling  
11 maybe it happened, yes, there's going to be plant  
12 damage, yes, it's going to have to be repaired, but  
13 from a safety viewpoint it might not be very  
14 significant?

15 MR. YOUNG: No. It was not very  
16 significant because of the fact that the  
17 atmospheric vent valve did respond and it was  
18 quickly caught. It had just popped and I took  
19 manual control of it and brought header pressure  
20 down.

21 MR. BEARD: If you exclude just for a  
22 moment this turbine bypass valve we just spoke of,  
23 would you characterize the rest of the cool down  
24 process -- in other words, that would be the first

1 half hour or so into the event for the next say six  
2 to eight hours -- as relatively normal?

3 MR. YOUNG: Yes.

4 MR. BEARD: Okay.

5 MR. YOUNG: It was.

6 MR. BEARD: So the event was basically  
7 over thirty minutes or an hour into it?

8 MR. YOUNG: Yes.

9 MR. BEARD: Okay. I believe or it's my  
10 understanding that the B & W owners group, all the  
11 owners, got together and developed what's called  
12 ATOG, Anticipated Transient, what is it, Operators  
13 Guidance?

14 MR. BELL: Operational.

15 MR. BEARD: Operational Guidance, and  
16 after that generic guidance was developed, your  
17 company developed procedures which would be  
18 appropriate for local implementation at this  
19 particular plant. Are you familiar with what I'm  
20 referring to?

21 MR. YOUNG: EP 1202.01.

22 MR. BEARD: That's your number for it?

23 MR. YOUNG: Yes.

24 MR. BEARD: If I refer to it as the ATOP



1 or ATOG, would that be what you are talking about?

2 MR. YOUNG: Emergency procedure would be  
3 adequate.

4 MR. BEARD: I understand you only have  
5 one emergency procedure at this plant?

6 MR. YOUNG: Yes.

7 MR. BEARD: Is that the red book we saw,  
8 like a three-ring binder that was two to three  
9 inches thick?

10 MR. YOUNG: Yes.

11 MR. BEARD: Okay. Because I did see one  
12 around here, and I just wanted to state for the  
13 record it's one procedure, but it's still two or  
14 three inches thick. It's a looseleaf binder?

15 MR. YOUNG: Yes.

16 MR. BEARD: So it's voluminous.

17 MR. BURNS: I think the number may be  
18 1202.01?

19 MR. YOUNG: 1202.01.

20 MR. BEARD: 1202.01, right.

21 In your assessment with these procedures  
22 in mind, would you feel like that the control room  
23 staff, not just you, but the other operator, in  
24 other words, the way the control room was run,

1 would you say that that was in line with the  
2 procedures, or do you have any idea of any  
3 deviations, no matter how significant or major  
4 deviations? I'm just trying to get an assessment.

5 MR. YOUNG: Okay. The procedure when it  
6 was originally brought out during the initial steps  
7 or initial phases of the transient, it was -- we  
8 were going through the supplementary actions, you  
9 know. It was in my opinion a very good aid,  
10 because once we got to the overheating transient  
11 part of it, we were able to -- right at that point  
12 is when we started to get into trouble and realized  
13 that something was amiss.

14 MR. BEARD: Could you give me an example?  
15 I'm not sure what you are you referring to.

16 MR. YOUNG: Like not right away we were  
17 able to determine that the MSIVs went closed or we  
18 had no -- we had no reason to believe that the MSIVs  
19 went closed until the pump speed started  
20 decreasing --

21 MR. BEARD: Okay.

22 MR. YOUNG: -- then on the No. 2 main  
23 feedpump.

24 At that time is when we got into the

1 overheating transient aspect of it, and we went  
2 right to it.

3 MR. BEARD: Right to the emergency  
4 procedure, you mean?

5 MR. YOUNG: In the emergency procedure.  
6 There has a direction to a section of overheating.

7 MR. BEARD: Right.

8 MR. YOUNG: Because when Steve Feasel had  
9 stopped at that point, that's when he started doing  
10 other things, and then we went back to that step.  
11 And we did have that occurring because we had both  
12 aux feedpumps tripped, and we went to that section  
13 and determined that 601 I think it is or whatever  
14 section it is to determine if you have availability  
15 of main feeder or aux feed.

16 MR. BEARD: So I guess I hear you saying  
17 a couple things. One is the procedure as a  
18 document was very useful, and I think I hear you  
19 saying that generally the procedure was followed?

20 MR. YOUNG: Yes.

21 MR. BEARD: Okay. I'm concerned -- and  
22 the reason for bringing up this line of questioning  
23 is with regard to the feed and bleed mode of  
24 cooling, as to -- I guess I should say the

1 procedure does include or does specify certain  
2 plant conditions for which when you reach those  
3 trigger values, as I said earlier, the procedures  
4 would direct you to enter the feed and bleed mode?

5 MR. YOUNG: Yes.

6 MR. BEARD: So that we understand. Okay.  
7 But during this event that did not occur.

8 MR. YOUNG: Yes.

9 MR. BEARD: You did not enter that. I'm  
10 trying to come to grips with why. And one of the  
11 possibilities is for the condition the plant was in,  
12 maybe that was not the appropriate way to go; okay?  
13 That's a possibility. But I'm trying to understand  
14 why it didn't happen.

15 MR. YOUNG: I guess it would be best put  
16 by saying that we are right at the point of going  
17 on HPI PORV cooling. Like I had stated earlier, I  
18 had told Ted Lehman that we better be ready to go  
19 on HPI PORV cooling. Th was up to 590.

20 And then it was at that time the startup  
21 feedpump became available and we started feeding it  
22 with startup feedwater for the No. 1 steam  
23 generator. At that point, I had to start working  
24 with the aux feedpumps, and so I was not able to

1 say whether, you know, what decisions were made on  
2 the primary side at that point.

3 MR. BEARD: Okay. Well, the decision to  
4 start that feed and bleed, as I call it, or makeup  
5 PORV mode as it's been called, that would have been  
6 made by the shift supervisor at any rate. This was  
7 not a decision that an operator would make on his  
8 own?

9 MR. YOUNG: That would not be my decision.

10 MR. BEARD: Okay. Help me understand  
11 your procedures a little bit. If you are in a  
12 position where you have reached trigger values, as  
13 I called them, you should do certain actions in  
14 your procedures, but you basically have an  
15 alternative or alternate arises, which in this case  
16 would be the operation of the electric startup  
17 feedpump. From a procedural viewpoint, does that  
18 allow you not to comply or from a procedural  
19 viewpoint does the procedure say you ought to go  
20 ahead and comply with what the procedures say?

21 MR. YOUNG: I believe it says to my best  
22 knowledge that if aux feedwater is not attained,  
23 then you only have startup feedwater, you would  
24 have to go on PORV cooling, HPI PORV cooling.

1 MR. BEARD: Are you saying that the  
2 procedures say even with the startup pump running,  
3 you would still be -- the procedures would direct  
4 you toward the PORV cooling?

5 MR. YOUNG: I can't state that for a fact.

6 MR. BEARD: I'm not, you know -- we are  
7 just talking about your memory of it, which may be  
8 wrong. It could be inaccurate. But your memory is  
9 even with that pump running, procedures would have  
10 directed you to it?

11 MR. YOUNG: Yes.

12 MR. BEARD: Do you remember the general  
13 things that are in that emergency procedure? For  
14 example, the going to the feed and bleed mode, as I  
15 call it, general major characteristics of your  
16 emergency procedure, let me just define it that way  
17 for a moment.

18 MR. YOUNG: Excuse me? Could you repeat  
19 that?

20 MR. BEARD: On this emergency procedure,  
21 the ATOG type considerations, the entry to the feed  
22 and bleed mode is what I would characterize or  
23 choose to characterize right now as the major part  
24 of the emergency procedures. That would be a major



1 activity, a significant activity?

2 MR. YOUNG: A significant activity, yes.

3 MR. BEARD: Okay. Do you remember any  
4 other significant activities that are in the  
5 emergency procedures that for one reason or another  
6 did not occur, maybe because of alternatives or the  
7 uniqueness of the plant situation, but the general  
8 thrust of the question is was there anything else,  
9 a comparable level of activity that it was decided  
10 not to do or didn't occur?

11 MR. YOUNG: I can't think of any offhand.

12 MR. BEARD: Okay. So if that's the case,  
13 then would it be a reasonable summary then to say  
14 the AFOG-type procedures were generally complied  
15 with? And I'm not concerned about minor deviations,  
16 but generally complied with with the one possible  
17 question about the feed and bleed or PORV mode of  
18 cooling? Would that be a fair summary? I'm just  
19 saying that's a question area. I'm not saying  
20 that's wrong or right. I'm saying that's the  
21 question area?

22 MR. YOUNG: See, now, again, I cannot  
23 second guess what occurred there.

24 MR. BEARD: I'm not asking you to

1 second guess. I'm saying you are a reactor  
2 operator, you have experience behind you, you have  
3 training behind you, and you know this plant and  
4 you know what happened during this event?

5 MR. YOUNG: Yes.

6 MR. BEARD: I'm just asking for an  
7 overall assessment as to would you agree that a  
8 proper assessment might be that the ATOG-type  
9 emergency procedures would be generally followed  
10 with the one question area of the feed and bleed  
11 mode of cooling?

12 MR. YOUNG: Yes.

13 MR. BEARD: I'm not asking details at all.

14 MR. YOUNG: But there is also -- there  
15 was a hard determination on how close you were to  
16 that step.

17 MR. BEARD: This is related to feed and  
18 bleed?

19 MR. YOUNG: Yes.

20 MR. BEARD: Yes.

21 MR. YOUNG: To that trigger spot.

22 MR. BEARD: I'm not trying to pin you  
23 down at all. I'm trying to set that there is one  
24 area we may want to explore more, but there are not

1 other areas?

2 MR. YOUNG: That is correct.

3 MR. BEARD: Thank you very much.

4 MR. BELL: You stated that Steve was reading  
5 this procedure to you?

6 MR. YOUNG: Yes.

7 MR. BURNS: That's Steve Feasel?

8 MR. YOUNG: Yes.

9 MR. BELL: Yes, excuse me.

10 MR. BEARD: That was the supplementary  
11 actions, I believe.

12 MR. BELL: Or was he using the flow chart  
13 that is in the back of the supplementary actions?

14 MR. YOUNG: I did not turn around to look.  
15 All I heard was his voice calling out steps, and I  
16 answered yes or no if they were on my side of the  
17 board; or if I heard no answer, I gave an answer  
18 for the other side.

19 MR. BELL: And as a result of using these  
20 supplementary actions, you were directed to the  
21 overheating tab of the procedure that's numbered  
22 EP 1202.01?

23 MR. YOUNG: Yes.

24 MR. BELL: When you got to that tab, you

1 took appropriate actions as outlined in that  
2 section?

3 MR. YOUNG: Yes.

4 MR. BELL: With the one possible  
5 exception that JT -- one possible question area  
6 that JT has brought up?

7 MR. YOUNG: Yes.

8 MR. BELL: Okay. Thank you very much.

9 MR. LANNING: Since the accident at Three  
10 Mile Island, do you know of any changes that have  
11 been made to the aux feedwater system here at  
12 Davis-Besse?

13 MR. YOUNG: Yes. There has been an  
14 attempt to eliminate as many valves as possible  
15 that are closed between the aux feedpumps steam  
16 side and feedwater side. They opened up a pump  
17 discharge valve that's directly on the discharge of  
18 the pump. They made that an open valve instead of  
19 an auto open valve at twenty-eight hundred rpm.

20 MR. BELL: Is this 599 or 608?

21 MR. YOUNG: No, it is not.

22 MR. LANNING: It's another valve?

23 MR. YOUNG: No.

24 MR. LANNING: Go ahead.

1 MR. YOUNG: Any other changes to the aux  
2 feedwater? Other than when I came to the company,  
3 that's the only other change I have -- or have  
4 really any knowledge of.

5 MR. LANNING: In other words, they have  
6 changed the design of the aux feedwater system to  
7 reduce the number of valves that must open to  
8 actuate aux feedwater system?

9 MR. YOUNG: Yes. That's the only thing I  
10 am aware of. As I said, I came there in '80, five  
11 years ago. And what they did before that or up to  
12 probably a year that I was there I would not have  
13 been aware of.

14 MR. LANNING: Okay.

15 MR. BEARD: Are you through with that  
16 topic, Wayne?

17 I would like to follow up on the same  
18 subject of TMI improvements. Are you familiar  
19 generally with the types of improvements that were  
20 implemented at most of the plants for TMI-type  
21 fixes, such things as the saturation meters?

22 MR. YOUNG: TSat meters, yes. And what  
23 do you call them, at our plant the SPDS system.

24 MR. BEARD: There were a number of them;



1 right? As a result of this event, do you remember  
2 anything that was particularly helpful of those  
3 improvements?

4 Let me give you an example of what I am  
5 saying. Maybe it's the other operator instead of  
6 you, but maybe you found the TSat meter was very  
7 handy and very useful and that made the situation  
8 go better? That's the kind of thing I'm asking  
9 about.

10 MR. YOUNG: For myself, it was not very  
11 handy to use for myself. For the other operators,  
12 if I was standing over there, it would have been  
13 very helpful knowing, not having to plot out on a  
14 saturation curve exactly where I was on it.

15 MR. BEARD: I didn't mean to focus you on  
16 that particular improvement. I'm saying of the  
17 TMI-type improvements, do you remember anything  
18 that was a TMI-type improvement you found useful,  
19 made things go better or easier for you?

20 MR. YOUNG: I'm trying to think of all  
21 the TMI improvements that I know of. Other than  
22 the ATOG procedure, I cannot say that the post-TMI  
23 improvements that I am aware of were of any greater  
24 advantage or any advantage to me.



1 MR. BEARD: Were there any that you can  
2 remember that were a particular danger or made it  
3 more awkward?

4 MR. YOUNG: No.

5 MR. BEARD: Okay. I have to admit that's  
6 a tough question because you have to scan in your  
7 mind what were all the TMI improvements and that's  
8 not a small chore; it's a difficult question.

9 But one of the things that I remember as  
10 a TMI improvement was upgrades in the operator's  
11 training, particularly with regard to transients.  
12 And I'm wondering if -- you went through that kind  
13 of training, didn't you, transient drills, casualty  
14 drills, whatever you want to call them?

15 MR. YOUNG: I was post-TMI trained.

16 MR. BEARD: So you went through them?

17 MR. YOUNG: I went through them. And I  
18 was not aware of any difference from preTMI, so I  
19 could not make a judgment on that.

20 MR. BEARD: Okay. What I'm trying to  
21 focus on or get toward is in your casualty drills  
22 on the simulator -- did you have training or  
23 complete loss of feedwater transients?

24 MR. YOUNG: Yes, I did.

1 MR. BEARD: You went through some of  
2 those?

3 MR. YOUNG: Yes.

4 MR. BEARD: Okay. Did you find that  
5 going through that training assisted you in this  
6 particular event?

7 MR. YOUNG: Yes, I did feel it was very  
8 helpful that the simulator itself -- but there  
9 is a lot of things that could have been of greater  
10 advantage I feel if we had a more plant specific  
11 simulator.

12 MR. BEARD: You went through at Lynchburg?

13 MR. YOUNG: Yes.

14 MR. BEARD: Okay. In this particular  
15 event, just in a general sense, how would you  
16 compare or contrast the event you went through here  
17 at this plant with the loss of feedwater transients  
18 casualty drills you went through in the Lynchburg  
19 simulator? Were they quite similar, generally the  
20 same but a lot of differences, or just not similar  
21 at all? Or how would you characterize that?

22 MR. YOUNG: Okay. As far as actual  
23 equipment, working with an aux feed pump of our  
24 type, it was not very useful. Even tripping an

1 SFRCS system is not, you know -- I had absolutely  
2 no training or simulated training on that.

3 MR. BEARD: Your SFRCS system is  
4 significantly different from the one simulator in  
5 terms of the buttons you would use and indications  
6 it provides and things of that nature?

7 MR. YOUNG: Yes. But as far as actually  
8 seeing with the indications and being able to --  
9 the way I approach it is to think it through as to  
10 what would happen at our -- at Davis-Besse. It was  
11 very helpful being able to see things move and be  
12 able to picture in my mind what would be happening  
13 with our equipment at each particular step.

14 MR. BEARD: Okay. So it was helpful?

15 MR. YOUNG: Yes.

16 MR. BEARD: Do you think that the  
17 transient that you folks just went through was very  
18 closely simulated in your training or it was quite  
19 different?

20 MR. YOUNG: Yes, it was very closely  
21 simulated.

22 MR. BEARD: Okay. With regard to the  
23 total number of failures that the plant experienced  
24 or malfunctions of equipment, depending on who does

1 the counting, one could come up that you had a  
2 transient initiator and maybe fourteen or fifteen  
3 complicating occurrences, such as the tripping of  
4 both aux feedpumps, you know. Did you ever have  
5 casualty training with that number of malfunctions  
6 involved, a number greater than ten?

7 MR. YOUNG: I could not tell you and be  
8 positive of an answer like that. At the simulator,  
9 they put multiple failures on you at times as well  
10 as single failures.

11 MR. BEARD: Were there multiple failures  
12 usually in the two or three failure category or  
13 were they like a dozen?

14 MR. YOUNG: I could not tell you. My  
15 memory would not be able to recall that.

16 MR. BEARD: So it sounds like in summary  
17 along the line of TMI improvements as it relates to  
18 this event, some of the things like the SPDS would  
19 probably not have been of great value in the haste  
20 of the things coming down, I think you said earlier?

21 MR. YOUNG: Yes.

22 MR. BEARD: Some of them were not in your  
23 jurisdiction. It sounds like what you are saying,  
24 the training on transients was probably helpful?

1 MR. YOUNG: Yes.

2 MR. BEARD: Okay.

3 MR. LANNING: Do the operators stay with  
4 the same shift? How long have you been with Ted  
5 Lehman's shift?

6 MR. YOUNG: I have always been on that  
7 shift since I came with the company. I was not  
8 always under the same foreman, but basically the  
9 same shift.

10 MR. LANNING: Now, how many operators are  
11 on this shift?

12 MR. YOUNG: Total of nine or, excuse me,  
13 yeah, nine operators.

14 MR. LANNING: Now, has most of those nine  
15 operators been on this shift since you have?

16 MR. YOUNG: I think the least senior man  
17 is three years.

18 MR. LANNING: My question is has this --  
19 have these nine people been together as a group for  
20 a long period of time?

21 MR. YOUNG: Yes.

22 MR. LANNING: At least three years you  
23 are saying?

24 MR. YOUNG: Yes.

1 MR. LANNING: Are you guys pretty  
2 successful at maintaining the unit on line?

3 MR. YOUNG: Yes, sir. Ourselves, yes.

4 MR. LANNING: Has there been much  
5 opportunity or has there been many reactor trips on  
6 your shift?

7 MR. YOUNG: No, not very many on our  
8 shift. I have been involved in one trip on another  
9 shift and only three on our shift.

10 MR. LANNING: So in five years, this  
11 shift has experienced only four reactor trips?

12 MR. YOUNG: Yes.

13 MR. ROSSI: Let me see. You said you had  
14 been involved on one trip on another shift and  
15 three on this shift.

16 MR. YOUNG: Yes.

17 MR. ROSSI: So this shift has been  
18 involved in three.

19 MR. YOUNG: Three actually.

20 MR. LANNING: But it's the same people?

21 MR. YOUNG: No. We were split. We were  
22 not really split, but there was like two operators  
23 from my shift working on another shift to cover  
24 manning because of people being off for vacation.



1 MR. LANNING: Okay.

2 MR. ROSSI: That's the forth trip I think  
3 he was talking about.

4 MR. YOUNG: In actuality, my shift alone  
5 has only been involved in three trips.

6 MR. ROSSI: Over what time period?

7 MR. YOUNG: Five years. But during that  
8 five years, I was in training for a year and a half.

9 MR. LANNING: So how many trips have you  
10 gone through that you have been stationed at the  
11 secondary panel?

12 MR. YOUNG: That was my first one.

13 MR. LANNING: First one, okay.

14 MR. ROSSI: How many -- you had nine  
15 operators on your shift?

16 MR. YOUNG: Yes.

17 MR. ROSSI: Were all nine of those in the  
18 control room on -- during this event?

19 MR. YOUNG: No.

20 MR. ROSSI: How many of them were in the  
21 control room on this event?

22 MR. YOUNG: Immediately at the start of  
23 the events, all four senior licenses and three of  
24 the equipment operators.

1 MR. BELL: Excuse me. I didn't hear.

2 All four?

3 MR. YOUNG: Licensees.

4 MR. ROSSI: And that includes the shift  
5 supervisor. So there were four licenses and three  
6 equipment operators at the start of the event?

7 MR. YOUNG: Yes.

8 MR. ROSSI: And were there -- where are  
9 the other two out of the nine?

10 MR. YOUNG: That I do not know. I didn't  
11 know at that time. I do know they were only a  
12 phone call away on the Gaitronics.

13 MR. ROSSI: Both of them?

14 MR. BURNS: They were the two other  
15 equipment operators?

16 MR. YOUNG: Yes.

17 MR. ROSSI: The other two, the two other  
18 equipment operators, then they took part in actions  
19 associated with the event?

20 MR. YOUNG: Yes.

21 MR. ROSSI: Off the record.

22 (Discussion held off the record.)

23 MR. ROSSI: Back on the record.

24 MR. BEARD: How about if I ask my last

1 question, Brian? For this particular question, if  
2 you choose to have your supervisor leave the room,  
3 we can ask him to, I'm sure. I just have a general  
4 question.

5 Is there anything about this event or  
6 about your shift or anything that occurred that you  
7 would like to tell us of any nature whatsoever? It  
8 could be from equipment problems, people problems,  
9 morale problems, anything that you think you would  
10 like for us to know. If it would make you feel  
11 more comfortable, I'm sure --

12 MR. SIMON: I can leave.

13 MR. YOUNG: No, that's fine.

14 As far as our shift goes, I think the  
15 equipment operators did the best job I have ever  
16 seen a group of equipment operators do. Their  
17 speed at doing these things was unbelievable.

18 Steve Feasel, he did a superb job. It  
19 was through his efforts alone that we got the  
20 startup feedpump available so quickly.

21 Ted Lehman, he was very helpful. He made  
22 good decisions, he made quick and proper decisions.  
23 He aided in overview also.

24 Rick Walleman, the other equipment

1 operator or, excuse me, the other RO did an  
2 excellent job. He knew exactly what to do and he  
3 did it right.

4 Through the transient, everybody  
5 performed beautifully together. You know, not to  
6 toot my own horn, but it was like clockwork.

7 As far as morale goes on the shift, I  
8 don't think it was all that great, but that would  
9 be my own personal opinion.

10 MR. ROSSI: Could you tell us --

11 MR. YOUNG: I could not make a statement  
12 for the whole plant, just for myself.

13 MR. BEARD: Is there anything besides the  
14 morale aspects? I think that there are a lot of  
15 indications that people who were on shift this  
16 night really did a lot of good things fast and  
17 everybody was really going at it. That's my own  
18 personal view. Do you want to add something?  
19 That's what I was going to say.

20 MR. YOUNG: Yeah. I think also with  
21 Louis Simon showing up so quickly afterwards, with  
22 Bill O'Connor coming, it was great they showed up  
23 so quickly, because they really helped in efforts  
24 of getting the vacuum back and getting to a more

1     stable, secure position at the plant.

2             Steve Quennoz showed up as well as Dick  
3     Crouse did. I think their efforts were very  
4     commendable.

5             MR. LANNING: Would you care to elaborate  
6     on the potential morale problem? Is it just  
7     specific to the shift or is it plant wide or to  
8     what extent and what's the primary reason?

9             MR. YOUNG: Plant morale? It would be my  
10    own personal opinion, nobody's else to state this.

11            MR. LANNING: That's fine.

12            MR. YOUNG: I think it was low.

13            MR. LANNING: Why do you think it was low?

14            MR. YOUNG: We are having hard times with  
15    negotiations in the contracts. I don't think that  
16    fact of the morale being low affects anybody's  
17    abilities nor their willingness to do a job right.

18            I think that everybody that works there  
19    are very professional. They know they have got a  
20    job to do, they do it honestly and they do it  
21    correct. The fact that negotiations are going  
22    poorly between the company and the union, I don't  
23    think they allow that to affect their job.

24            To point out a case in point, you know,

1 at one point they had First Aid brigade volunteers  
2 resign from that position. When we had an injury  
3 on-site, that didn't slow them down from being  
4 there. They still did their job, and they did a  
5 good job.

6 MR. ROSSI: The morale being low, is that  
7 something that has occurred, like, recently? Could  
8 you give a time frame over which the low morale may  
9 have existed, or is it lower now than it was a year  
10 ago? Would you characterize that in some way?

11 MR. YOUNG: I would just say that it is  
12 lower than it was a year ago.

13 MR. ROSSI: Lower than it was a year ago.

14 How about the general quality of  
15 maintenance work at the plant, maintenance work  
16 orders and keeping equipment in good repair? Could  
17 you make any comments on your feelings on that?

18 MR. YOUNG: Maintenance work orders, I do  
19 not deal directly in those. The only thing I know  
20 as far as maintenance work orders coming through is  
21 that the person that has it assigned to them shows  
22 who writes it, reviews it, he sends them over to me  
23 to tell me what exactly they are doing. That's the  
24 only involvement I have in that process.



1           And then I give -- I let them know it's  
2   okay or I'll say, wait, let me discuss it with the  
3   shift supervisor. That's the only thing I have  
4   involvement in.

5           As far as equipment goes, there are some  
6   systems that do lack maintenance, but that's  
7   because they are always doing maintenance on other  
8   systems that may incur PMS, calibrations, other  
9   things.

10          MR. BEARD: Do you feel there are enough  
11   maintenance people here to get the job done in a  
12   timely manner?

13          MR. YOUNG: Yes.

14          MR. ROSSI: You do feel there are enough?  
15   Is that what you said?

16          MR. YOUNG: Yes.

17          MR. BEARD: Do you feel they are used in  
18   the priority that you feel as an operator is the  
19   appropriate priority?

20          MR. YOUNG: I don't think I have a right  
21   to say that because I do not know all the details  
22   that go on.

23          MR. BEARD: Well, I appreciate where you  
24   are coming from, Brian. I am only asking for your

1 personal view as an RO, because you are the  
2 individual that would report troubles on the  
3 reactor systems.

4 MR. YOUNG: Yes.

5 MR. BEARD: And maintenance people do a  
6 lot of things from repair actions for equipment  
7 that's under your technical specifications or  
8 repair actions for other equipment that's not under  
9 technical specifications but still important to the  
10 plant availability or whatever, equipment that is  
11 nice to have fixed but no problem if it doesn't get  
12 fixed right away, to things such as painting the  
13 floor.

14 MR. YOUNG: Yes.

15 MR. BEARD: And I guess I was trying to  
16 solicit from you some general assessment as a  
17 reactor operator, your training and experience, do  
18 you feel, if the company has enough of them, that  
19 they are putting them to work on the right priority  
20 in a sense, or are they out painting the hatches,  
21 so to speak?

22 MR. YOUNG: I would say that they are not  
23 using them as effectively, from my point of view  
24 only, as they could.

1 MR. BEARD: This is your personal opinion,  
2 right. We are not asking you to judge the company.  
3 As a reactor operator, that's all.

4 MR. YOUNG: I only see a few of the  
5 details. And from my point, from that viewpoint, I  
6 can only say that they don't use them as  
7 effectively as they can.

8 MR. BEARD: Okay. Was there anything  
9 else you would like to tell us or you felt like we  
10 needed to know in terms of understanding what  
11 happened during this transient or why it happened?

12 MR. YOUNG: I think we pretty well went  
13 through a lot.

14 MR. BEARD: Do you have any feelings on  
15 the actuation on the low pressure, the Rupture  
16 Control System, as to what that means in terms of  
17 why it happened or -- do you have any comments you  
18 would like to make on that area?

19 MR. YOUNG: Why it happened? I knew what  
20 I wanted to trip it on. I discussed it with Ted  
21 Lehman beforehand. Other than unfamiliarity with  
22 actually tripping those buttons, and due to the  
23 fact that there is other -- there have already been  
24 pointed out control room design errors associated

1 with the fact they are so low on the panel and they  
2 have such little lettering.

3 I knew what I wanted to trip it on, but  
4 it just didn't happen. And even after I had  
5 tripped it on the wrong parameter, I even thought  
6 after that that I had done it right until things  
7 weren't looking right, then right away we corrected  
8 it. But it was already too late; the pumps had  
9 already tripped.

10 MR. BEARD: Would you characterize it as,  
11 what I might call it, just a plain honest mistake?

12 MR. YOUNG: Yes. There was no intention  
13 of tripping it on anything else but low level. Our  
14 procedures state that if you manually trip SFRCS,  
15 it will be tripped on low levels. And as far as  
16 affecting the feedwater, it had a bearing on 599  
17 and 608, but as far as the aux feedpumps tripping,  
18 I don't think it had a bearing at all.

19 MR. BEARD: I meant, Brian, by the  
20 question, what I meant was there was no -- it was  
21 an honest error in the sense there is an array of  
22 buttons there to be pushed, you went there knowing  
23 which parameter you wanted it actuated on, you  
24 happened to hit a button very similar to it and

1 very close in proximity, but you weren't like in a  
2 set-up situation that caused you to make that  
3 mistake other than things were happening pretty  
4 fast at the plant, it was in the heat of battle, so  
5 to speak, et cetera, et cetera, and it was just a  
6 plain honest mistake?

7 MR. YOUNG: Yes.

8 MR. BEARD: Okay.

9 MR. ROSSI: Anybody have anything else?

10 MR. BURNS: I just want to ask a couple  
11 questions. Brian, in preparing for this interview,  
12 did you discuss this interview with anyone?

13 MR. YOUNG: Discuss this interview?

14 MR. BURNS: Yeah, discuss what's going on  
15 in this interview with anyone prior to the interview?

16 MR. YOUNG: I don't follow your train of  
17 thought here.

18 MR. BURNS: Before being interviewed, did  
19 you discuss the interview or what would be happening  
20 or what you should say with anyone?

21 MR. YOUNG: No.

22 MR. BURNS: For example, from the company  
23 or --

24 MR. YOUNG: Other than I was told to be

1 honest and, you know, try to do the best of your  
2 knowledge to recall all the events and if you don't  
3 know something, say you don't know. It was just be  
4 truthful. That was the only thing said to me.

5 MR. BURNS: Thanks.

6 MR. ROSSI: Anybody else have anything?

7 MR. BEARD: I just would like to thank  
8 Brian. I think he has been here for -- it's 1:25  
9 now, we started this exercise at 9:00 in the  
10 morning, and he has been through a lot after  
11 working an all-night shift. And I thank you.

12 MR. ROSSI: Off the record now.

13 - - - - -

14 Thereupon, the interview was  
15 concluded at 1:25 o'clock p.m.

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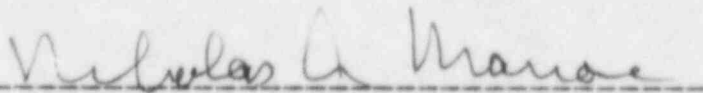


## CERTIFICATE

I, Nicholas Marrone, a Registered Professional Reporter and Notary Public in and for the State of Ohio, do hereby certify that I took the aforementioned interview and that the foregoing transcript of such proceedings is a full, true and correct transcript of my stenotypy notes as so taken.

I do further certify that I was called there in the capacity of a Registered Professional Reporter, and am not otherwise interested in this proceeding.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Columbus, Ohio, on this 14<sup>th</sup> day of June, 1985.

  
NICHOLAS A. MARRONE, Registered  
Professional Reporter, Notary Public  
in and for the State of Ohio.

My Commission expires November 1, 1987.

