

BEFORE THE FACT FINDING TASK FORCE
OF THE NUCLEAR REGULATORY COMMISSION

- - - - -

Re: :
Davis-Besse event :
of June 9, 1985 :

- - - - -

INTERVIEW OF WILLIAM O'CONNOR

- - - - -

Interview of WILLIAM O'CONNOR by the
Nuclear Regulatory Commission Fact Finding Task
Force, taken before me, Anne I. McBrayer, a Notary
Public in and for the State of Ohio, at the Site
Emergency Operations Center, Davis-Besse Nuclear
Plant, Oak Harbor, Ohio, on Wednesday, June 12, 1985,
at 1:45 o'clock p.m.

- - - - -

8507290056 850612
PDR ADOCK 05000346
T PDR

ACE FEDERAL REPORTERS INC.
(202) 347-3700

1 APPEARANCES:

2 U.S. Nuclear Regulatory Commission
3 4340 East West Highway
4 Bethesda, Maryland 20814
5 By Mr. Steve Burns,

6 On behalf of the Nuclear Regulatory
7 Commission.

8 Shaw, Pittman, Potts & Trowbridge
9 1800 M Street, N.W.
10 Washington, D.C. 20036
11 By Mr. Jay E. Silberg,

12 On behalf of the Davis-Besse Nuclear
13 Plant.

14 Members of the Team:

15 Wayne Lanning
16 Larry Bell
17 J. T. Beard
18 Ernie Rossi
19
20
21
22
23
24

1 WILLIAM O'CONNOR
2 being called as a witness, was interviewed as
3 follows:

4 EXAMINATION

5 BY MR. ROSSI:

6 Q. Bill O'Connor?

7 A. Sir.

8 Q. Why don't you start by telling us what
9 your position is with the company?

10 A. I'm the Davis-Besse operations
11 superintendent.

12 BY MR. BURNS:

13 Q. Did you ask Mr. Silberg be with you during
14 this interview?

15 A. Yes, I did.

16 BY MR. ROSSI:

17 Q. Okay. Could you maybe tell us a little
18 bit more about how long you've been with the company
19 and --

20 A. Okay. I hired into the company in 1974 as
21 a plant auxiliary operator. I've held various
22 positions since then as an equipment operator,
23 reactor operator, training instructor, training
24 supervisor, operations engineering supervisor, and I

1 had a title change recently. I used to be the
2 operations engineer. Now I'm the operations
3 superintendent. I have a senior operator's license
4 also.

5 Q. Okay. Why don't you now start on the
6 night of the event and tell us when -- you were not
7 here when it happened.

8 A. Correct.

9 Q. Okay. And when is the last time you'd
10 been in the control room or associated with the
11 plant operations before the event?

12 A. Friday -- the previous Friday, which was
13 the day before that. It was Sunday in the morning
14 when the event occurred, which was Saturday night.
15 Friday afternoon when I left here was the last that
16 I had been in contact with the plant. I left around
17 six or seven o'clock on Friday afternoon. After I
18 wrote the night PM notes and around all the weekend
19 activities, I went home.

20 Q. And you didn't have discussions with them
21 then?

22 A. I had not spoken to anyone in the plant.

23 Q. In the control room?

24 A. No.

1 Q. Until the event occurred?

2 A. No, sir.

3 Q. Okay. Then why don't you start with the
4 event and tell us when you first found out about it
5 and just describe what you were told, what you did,
6 and we'll go from there and ask questions as you go
7 along.

8 Does that sound reasonable to everyone
9 else that we start that way?

10 MR. BEARD: I think that's fine.

11 A. I was sound asleep. At approximately 1:40
12 in the morning, seems to me that's what the time was
13 on the clock when the phone rang. That's usually
14 what I do is I open my eyes and look at the clock
15 and think what did they do now. I answered the
16 phone, and Ted Lehman, the shift supervisor,
17 informed me that the reactor had tripped. And
18 following the reactor trip, the main steam isolation
19 valves had gone shut, and the aux. feed pumps were
20 not running at the time.

21 Q. So you got the information that the
22 reactor tripped, the MSIVs were closed and the aux.
23 feed pumps were not running?

24 A. Were not running, yes.

1 Q. And you were also told that they are made
2 aware that they had no main feedwater too?

3 A. Yes.

4 Q. Which is almost self-evident?

5 A. When he told me the MSIVs had gone shut, I
6 knew that.

7 Q. You knew.

8 A. I asked him what the subcooling margin was
9 and whether he had indications of overheating at
10 that time. And he said he did not. He said that he
11 had operators on the way to both the auxiliary feed
12 pumps and the start-up feed pump to restart the aux.
13 feed pumps and line up the start-up pump. I said
14 okay. And I said let me call you back in one minute.

15 I hung up the phone. Called Louie Simon,
16 the op supervisor, since he lives relatively close
17 to the plant, and he answered the phone. I said,
18 Louie, we've lost feedwater. The reactors tripped.
19 I want you to get there immediately. He said all
20 right. Hung up the phone.

21 I called Steve Quennoz and told him that
22 the reactor had tripped. We'd lost feedwater. That
23 I had Louie going in, and I'd call him back in just
24 a minute as soon as I got back with the plant to see

1 what the status was. I did those two calls just to
2 get those guys out of bed and get Louie on his way
3 in here because I know Louie can make it in, you
4 know, 20 minutes or so. I then called the plant
5 back. This was probably five minutes later at the
6 most, maybe six minutes.

7 BY MR. BEARD:

8 Q. You got a direct number into the
9 supervisor's --

10 A. Yes, I can dial direct into the shift
11 supervisor or the control room. I called the
12 control room. There is a four digit number where I
13 can call the control room. It's not a public number
14 or anything, but I called into the control room.

15 At this time Ted said -- I asked him for
16 plant conditions. I said what's subcooling margin,
17 what's pressure, what's temperature, and where you
18 at. He told me subcooling margin was 90 degrees.
19 He told me that he had 970 -- or it seemed -- the
20 number I've gotten written here is 970 but, you know,
21 that's what I remember.

22 He said he had like 970 in the steam
23 generators and level was about 15 inches. I said
24 what's the status of the aux. feedwater. He said we

1 have No. 1 starting up. It's at 2,000 rpm, but he
2 can't get good control of it. I said do you have
3 any flow to any steam generators. He said not at
4 the present time, but we're opening the start-up
5 valve right now.

6 I said do you have any flow? He was
7 talking to the operators and talking to me at the
8 same time, and I could hear other conversations in
9 the background. He said we do have flow to No. 1
10 steam generator.

11 Q. And the start-up valve you're referring to
12 would be the one that feeds from the start-up pump?

13 A. Yes, SP7V. He said he had reestablished
14 flow to the No. 1 steam generator. I said do you
15 have anything on No. 2. He said No. 2 aux. feed
16 pump is coming up. I said, are you cooling yet? He
17 said wait a minute. And he -- there was some other
18 conversations. He set the phone down for a second
19 and came back. And he said -- I'm trying to
20 remember his exact words.

21 He says it looks like we're starting to
22 cool. I said do you have aux. feed pump 2 running.
23 And he said it's not running yet. And I told him,
24 if you don't have aux. feed pump 2 with flow in a

1 minute, establish make-up cooling.

2 Q. Make-up cooling being feed and bleed?

3 A. Feed and bleed.

4 Q. Okay.

5 A. He said, after that -- it was a couple
6 second delay, and he said No. 2 aux. feed pump's
7 rolling. So at this point, you know, we had No. 2
8 rolling, you know. There was some other words back
9 and forth like I was asking whether he had flow
10 indication yet.

11 I asked him subcool margin again. And he
12 told -- it seems to me he told me 90 or 95 degrees
13 at that time. It was a little bit more subcooled
14 than when I asked him a few minutes before which
15 told me we were cooling even though it had only been
16 a minute or so since I asked him for the other one.

17 He then said I've got good flow on No. 2
18 aux. feed pump. Level's increasing. So that meant
19 at that time we had both aux. feed pumps running --
20 I mean, flow to both steam generators, one from the
21 start-up pump and one from the No. 2 aux. feed pump.

22 At that time I said does it seem like it's
23 going to stay? And he said from what I can tell,
24 flows look all right. We still don't have No. 1

1 aux. feed pump running, but we do have flow down
2 both sides, one from the start-up and one from the
3 aux. feed pump. I said, all right. I'll call you
4 back in a few minutes. At this time I hung up.

5 Q. Can I interrupt you at this point?

6 A. Yes.

7 Q. The first phone call from the shift
8 supervisor to you, you were probably on the phone
9 for how long?

10 A. Maybe --

11 Q. A minute?

12 A. Two minutes.

13 Q. Two minutes?

14 A. Two to three minutes at the most.

15 Q. Then you made the other notifications call
16 and dispatched the operations supervisor?

17 A. Yes.

18 Q. When you got back on the phone, can you
19 tell us roughly how long you were on the phone, do
20 you know?

21 A. I was trying to figure that out, and it
22 seems to me I was back on the phone at about 1:48.
23 Seems like it was -- I talked to Louie. I talked to
24 Steve. Maybe 1:46, somewhere in that time frame,

1 like six minutes or so before I got back to Ted.

2 BY MR. ROSSI:

3 Q. Are you basing those statements on what
4 they told you compared to when those things happened
5 in the events or are you --

6 A. I just know when -- you know, what was
7 going on at the time and --

8 Q. What they were -- you could tell --

9 A. Right.

10 Q. -- about how long you were on the phone at
11 different times from what was going on at the plant
12 at that time?

13 A. Yeah. I didn't look at my clock other
14 than the first phone call. And trying to
15 reconstruct it, I'm just listening 'cause I heard
16 him say things like FW 601 is going open and things
17 like that in the background and looking at the alarm
18 time, those are the times, you know, approximately
19 put me in the ballpark of when I called back.

20 BY MR. BEARD:

21 Q. So what I'm trying to focus on, Bill, is
22 in the second phone call, near as we can recollect,
23 you called back around 1:46. And what I'm trying to
24 get to is how long were you and Ted -- is it Ted?

1 A. On the phone?

2 Q. Yes. How long were you on the phone?

3 A. On the second one, I'd say ten minutes.

4 Q. Ten minutes.

5 BY MR. BELL:

6 Q. Normal steam generator trips what, 1010
7 pounds?

8 A. 1010 to 1015 yes.

9 Q. And this steam generator pressure had
10 dropped from 1010, it's normal value, down to 970
11 PSIG.

12 A. He told me that he had a safety valve blow
13 excessively on the trip. So, you know, attributed
14 that to the safety valve blow.

15 Q. You didn't think the steam generators were
16 dry?

17 A. I knew the ATOG procedure says as long as
18 you're above 90 you're not considered dry. And I
19 asked him what the level was twice, and he said --
20 the first time we talked, he said he still had -- it
21 seemed to me like 15 or 20 inches. The second time
22 he said it was indicating about 10 or 12, but --

23 Q. Regardless of the ATOG procedures, do you
24 personally think the steam generators were dry?

1 A. Do I personally think it was dry? I think
2 that we had bottled the generator up. There was
3 water and steam pressure in there. And by the
4 technical definition of dry, I don't think they were
5 dry.

6 Q. But only one -- even if there was
7 excessive lifting of the safety, that would effect
8 only one steam generator's pressure, right?

9 A. That's true.

10 Q. So what about the other steam generator,
11 the steam generator that the safety wasn't stuck on?

12 A. Our safeties typically blow us down to 960,
13 980. And then we recover them.

14 Q. But as soon as they seat, then the decay
15 heat and pump heat brings you back up to 1010, right?

16 A. Pretty rapidly.

17 Q. Close?

18 A. Yes.

19 Q. And pretty fast?

20 A. Yes.

21 Q. So even on the steam generator --

22 A. In my mind, I think that we were probably
23 overheating at that particular time, but --

24 Q. So even if you were overheating and even

1 if there was some small quantity of water in there,
2 it wasn't sufficient for decay heat removal?

3 A. Correct.

4 BY MR. BEARD:

5 Q. I'd like to understand better a concept
6 term I've heard mentioned out here a number of times.
7 Maybe you can help me. It's the term you asked him
8 were you overheating. Now, when you use that term,
9 what are you talking about?

10 A. What we mean is is the plant heating back
11 up. And at the first call, we weren't. We were
12 still at, I'd think it was, like 560 or something at
13 the time, which, you know, is less than the normal
14 temperature. It's a little above where post trip T
15 ave should be.

16 BY MR. ROSSI:

17 Q. What should post trip be at?

18 A. 555, 557.

19 BY MR. BEARD:

20 Q. So when you use the term or make the
21 question are you overheating, you would expect the
22 operator, if I can use the term loosely, to look at
23 T ave?

24 A. I might have said are you heating up, not

1 necessarily overheating, but, you know --

2 Q. All right. But to get the answer you
3 were trying to get to, you would have expected the
4 person to understand your comment to say is T ave
5 abnormally high?

6 A. Yes.

7 Q. Okay.

8 BY MR. BELL:

9 Q. And by overheating, you mean inadequate --
10 is the air condition of inadequate core?

11 A. Not inadequate core cooling in the pure
12 definition of inadequate core cooling, no. Is T ave
13 going up uncontrollably or something like that, in
14 other words, if it was just sitting there cooking at
15 565, 570 and slowly increasing, that's not
16 necessarily, you know, gross overheating or anything
17 like that.

18 BY MR. BEARD:

19 Q. But I think the point I'm trying to get to
20 is that you're relating an indication of T ave with
21 overheating?

22 A. Yes.

23 Q. Okay.

24 BY MR. BELL:

1 Q. But you were concerned enough to tell him
2 if he couldn't get the core cooling, to tell him if
3 he don't get any feedwater cooling --

4 A. In one minute I told him.

5 Q. -- to line up the low pressure injection
6 to the high pressure injection to get a path of
7 cooling water to the core?

8 A. Yes. I told him, when I was on the phone
9 and we only had the start-up pump on that second
10 phone call, I ordered him, I said in one minute if
11 you don't have cooling on the other steam generator,
12 to line up for make-up high pressure injection
13 cooling.

14 Q. You can't have adequate decay heat removal
15 with just one steam generator?

16 A. With only the start-up pump by itself,
17 according to the B&W topical report with no other
18 core cooling methods, it seems to me it was like a
19 fifty-fifty chance by their probabilistic risk
20 analysis that if we didn't get it established in a
21 half an hour, we may not have enough in the start-up.

22 There was analysis we had B&W do after TMI
23 as an addendum since we don't have the highest pumps,
24 and on certain small breaks, we cannot manage alone

1 with make-up cooling. We need feedwater cooling
2 also. So there is a break spectrum in there that we
3 do need feedwater cooling.

4 And they analyzed these small breaks with
5 only feedwater cooling and not make-up cooling in
6 addition to it. And with only start-up pump cooling,
7 there's like a fifty-fifty chance on a certain size
8 break that you won't make it before -- before you
9 boil down enough that you can get high pressure
10 injection in.

11 BY MR. BEARD:

12 Q. Okay. You said -- you asked B&W to do
13 some plant specific analysis because you have the
14 high pressure injection pumps with a relatively low
15 heat?

16 A. Yes, sir.

17 Q. Is this -- what form does this report take?

18 A. It's either an addendum to our small break
19 analysis or a special topical report. I'm sure we
20 could get a copy from engineering.

21 Q. Would it be possible -- I really would
22 like to see a copy of that.

23 A. If we -- do you want me to try and get it?
24 If you just ask Jacque Lingenfelter, I'm sure he can

1 get it for you or John Wood.

2 MR. BELL: Since he's not going to be here.

3 BY MR. BEARD:

4 Q. We'll ask somebody, but you think it's
5 available here at the site?

6 A. Oh, I'm sure it is. I'm sure it is.

7 BY MR. ROSSI:

8 Q. Okay. So now I think we left you either
9 on the phone or just getting off the phone?

10 A. All right. Once Ted had told me we had
11 flow to both steam generators and that he was
12 cooling off, I said all right, I'm going to hang up.
13 I want to make a few more phone calls. At that time,
14 I called back Steve Quennoz. Informed him of the
15 situation. Told him that we had steam generator
16 water level restored with the start-up pump and
17 auxiliary feed pump on the other side.

18 That we had encountered some problems with
19 the No. 1 auxiliary feed pump. That it was not
20 controlling normally, but we did have the start-up
21 pumps supplying flow to that one. He said that he
22 was dressed and would be leaving for the plant
23 shortly. He wanted me to call Terry Murray to
24 inform him of the plant status since I was more up

1 on it than he was.

2 We also discussed whether we thought we
3 were in an emergency action level at the time, and I
4 said I don't have a book with me. I'm sure that for
5 the time we were without feedwater we were probably
6 in something, but I did not know the level.

7 Steve said, you're right, we probably were.
8 He had an old set of them, he said, an older set of
9 books. But he said they weren't up to date. And I
10 said even if we were, Louie's going to be at the
11 plant in about ten more minutes, and I'm going to be
12 there in about 20 more minutes, so we can sort that
13 out when we get there.

14 It isn't going to be like nothing's going
15 to happen for the next few minutes on an EAL, and we
16 do have adequate cooling at this time, so nothing,
17 you know, nothing more serious was going on that
18 couldn't wait the few minutes for Louie to arrive
19 and me to arrive at the control room.

20 I then hung up from Steve and called Terry
21 Murray. Told him of the plant status. Told him
22 that I was on my way to the plant. I was getting
23 dressed while I'm talking on the phone all this time.
24 He said that he would call Mr. Crouse and then get

1 back in touch with us at the plant. So I left right
2 after that. I hung up the phone and left for the
3 plant.

4 BY MR. BEARD:

5 Q. Okay. But this is maybe the time to ask
6 this question then. I gather you're at the point of
7 finishing up the phone calls you made at home.
8 You're departing for the plant?

9 A. Yes.

10 Q. In the various phone calls that you'd had,
11 what information did the plant give you with regard
12 to the primary side of the plant?

13 A. I asked -- I've got a few things here.

14 Q. Particularly trying to focus on the PORV?

15 A. I was given nothing on the PORV.

16 Q. Nothing on the PORV?

17 A. No. I had no information on the PORV.

18 Steve did tell me that primary system parameters
19 were returning to normal after he got aux. feedwater
20 back. They said pressure was high. I figured the
21 PORV had opened just due to the loss of feedwater,
22 but I also figured they didn't say anything about it,
23 so the PORV must be okay.

24 Q. Okay.

1 A. You know, they weren't in any trouble on
2 it.

3 Q. Did they give you any information about
4 the lowest that the reactor cooling system pressure
5 had fallen to?

6 A. No, sir. At the times that I asked for
7 pressure, it was within a band that I would have
8 expected, and I don't remember the numbers, but at
9 the times I asked him for subcooling margin, T ave
10 and reactor coolant pressure, they all made sense
11 based on what they had told me.

12 Q. Right. But at that time, not subsequently,
13 but at that time, did you have any feeling that the
14 reactor coolant pressure had fallen to as low as
15 something of value approaching the actuation set
16 points?

17 A. I would have expected when they turned on
18 auxiliary feedwater at full flow to be a fifty-fifty
19 chance of us buying an SFAS trip.

20 Q. SFAS is ESF actuation on low pressure?

21 A. On low reactor coolant pressure due to the
22 overcooling you get. By our procedure you have to
23 leave full flow on until you restore the required
24 levels in the steam generators, and that does put a

1 real big cooldown on you, and could be enough to dip
2 you blow 1650.

3 They did line up high pressure injection
4 on piggyback, but at the time it -- doesn't seem to
5 me that I knew that at the time. Personal opinion,
6 I think we'd have made it on the make-up pumps. I
7 don't think we needed HPI, the little bit of HPI we
8 piddled in there.

9 BY MR. ROSSI:

10 Q. The make-up pumps are your normal charging
11 pumps, is that what you mean by make-up?

12 A. They're centrifugal high pressure pumps.
13 I'm pretty confident we would have made it on the
14 make-up pumps, but they did with HPI.

15 Q. With low feed you think that?

16 A. What do you mean?

17 Q. Could you have cooled the core with the
18 make-up pumps?

19 A. With the make-up alone?

20 Q. Yes.

21 A. No, that's another one of those
22 fifty-fifties in the topical report. No, you're
23 supposed to put HPI on with it.

24 BY MR. BELL:

1 Q. By making it with the make-up pumps,
2 you're talking about restoring pressure at a level
3 in RCS pressure, so turning the pressure decay on?

4 A. Yeah. What I meant was when the cooldown
5 occurred when they restored feedwater and T ave,
6 when it's from 590 back down to its 555, it's 35
7 inches per degree in the pressurizer, which meant
8 that the pressurizer level is dropping like a rock
9 and the heaters can't keep up obviously so that
10 shrink has got to be made up with something.

11 And I think that make-up pumps alone would
12 have been able to catch that to prevent an SFAS trip.
13 They did put a little bit of HPI in. They didn't
14 see anything on their flow meters I later found out.
15 But looking at the indicators, a few gallons went in
16 through the nozzles.

17 BY MR. BEARD:

18 Q. Really trying to focus what information
19 you gained before you left home. We talked about
20 the PORV and the reactor coolant pressure. Were you
21 given any information regarding the peak temperature,
22 either T hots or T aves that they had reached?

23 A. Yes.

24 Q. Rather than the values that happened to be

1 at a particular time?

2 A. Ted said the highest T ave he saw was
3 about 592 degrees, and that it was turned around and
4 headed down after they put the feedwater back in the
5 steam generators. He did not tell me how high the
6 reactor coolant system pressure was, but, like I say,
7 when I left, it seems to me it was -- I don't want
8 to guess. It was above 2,000 pounds when I left
9 home. And he said it was controlling.

10 Q. All right. So I interrupt your story
11 quite a bit. But at this point if we return, you're
12 in the process of putting your trousers on and going
13 out to the car?

14 A. Yes, and I had made the phone calls to
15 Steve and Terry. That's Steve Quennoz. I don't
16 know if --

17 MR. BURNS: Who was Terry?

18 A. Terry Murray, assistant vice president of
19 operations.

20 I wasn't sure exactly what time I arrived,
21 so I called the guardhouse yesterday to see the
22 exact time I got to the control room. It was at 2:46
23 is when I arrived. So from the original call, which
24 was at about 1:40, it was about an hour for me to

1 get here including the phone calls and everything.

2 Louie arrived on site about 2:25.

3 BY MR. BELL:

4 Q. Is this a good breaking point, I mean, for
5 your scenario right now?

6 A. Sure.

7 Q. We've got you on site, so let's just leave
8 you at the front gate a moment.

9 A. Okay.

10 Q. You have a -- is there anybody on the
11 plant management staff that's -- that has him do the
12 emergency responsibilities?

13 A. We don't have what you -- what you might
14 consider duty emergency responsibilities. I carry a
15 pager, and anything that goes wrong with the plant,
16 our administrative procedures require the control
17 room to call me. If I'm not available, then I turn
18 my pager over to either Louie Simon or John Johnson,
19 the operations engineering supervisor. That's the
20 only two people that I can delegate my authority to.

21 BY MR. ROSSI:

22 Q. They work for you?

23 A. They work for me, yes. Louie is the
24 operations supervisor and John's the ops engineering

1 supervisor.

2 BY MR. BELL:

3 Q. Well, who would come in to man the
4 technical support center to make the notifications
5 to the --

6 A. They all have pagers too. When we
7 activate the emergency plan, there is a duty --
8 emergency duty officer for that type thing. And
9 those -- the technical engineer goes to the
10 technical support center, and there's -- 13 of us
11 have these pagers that we wear all the time. I
12 don't have mine today because I gave it away because
13 I'm going out of town. But we do have -- in that
14 light, yes, we have a duty staff. And there's a
15 roster and everything for it.

16 Q. But since the emergency plan wasn't
17 implemented per se?

18 A. At this point, yes.

19 Q. Then none of those individuals were
20 notified?

21 A. At this point.

22 Q. Now, you're back at the front gate?

23 A. Back at the front gate. As I'm pulling
24 around the corner, I'm breathing a sigh of relief

1 because I still see steam coming off the roof and
2 out the aux. feed pump exhaust. And guards had my
3 badge waiting for me. So as I walked in, they just
4 you know, handed me my badge, went on through and
5 got to the control room.
6 As I came into the control room, Louie was
7 in there -- well, all the key players. Louie Simon,
8 Ted, Steve Reasel, the reactor operators, a couple
9 of equipment operators. And I asked Louie to get me
10 up to speed as to where they were.

11 We went around the control room, checked
12 all the indications. Everything was essentially
13 drawing a straight line at this point. They'd
14 leveled off pressure in the normal operating band.
15 Temperature was leveled off after a little below 550,
16 around 548,550 range from what I remember.
17 Reactor coolant flow was normal.

18 Subcooling margin was normal. Steam generator
19 levels, they were controlling them manually at about
20 50 inches. The plant was essentially stable. They
21 had some problems. The main turbine had stopped,
22 and they weren't able to put it on gear. And there
23 was some other things going on, but as far as
24 overall heat transfer and the primary, secondary

1 situation, it was quite stable.

2 They were in the process of initiating the
3 emergency call system when I walked in. They had
4 made a tape to declare the unusual event. It had
5 been declared officially at, I think it was, 2:25 or
6 something like that, the official declaration.
7 Louie had made up the tape message to go over the
8 system.

9 What we have is a Dictaphone type
10 arrangement where when you call in, the operator
11 puts you onto a tape and it gives a message. It
12 says the -- basically the plant, the condition it's
13 in, what went on, who we want to respond and all
14 that.

15 They -- the tape had been inserted in the
16 machine, and Rebecca, administrative assistant,
17 Rebecca Osborn was in the process of paging the key
18 responsibility personnel. Now, at this time -- let
19 me get my --

20 BY MR. BEARD:

21 Q. You're referring to some notes there, Bill?

22 A. Yes.

23 Q. Could you tell us where these notes come
24 from?

1 A. What this is, whenever we have an event, a
2 reactor trip or some transient, what we do is tell
3 the administrative assistant to sit at the control
4 room desk and write down everything they hear out
5 loud, so -- and put times in where appropriate. So
6 this is just Rebecca's notes of who was being talked
7 to, what was going on, and just big picture items of
8 the sequence.

9 Q. Okay.

10 A. If you'd like a copy of this, I'd be glad
11 to make one for you.

12 MR. BURNS: Why don't -- yeah, you --

13 MR. BEARD: I think it would be nice to
14 have that.

15 MR. BURNS: Why don't we take a copy.
16 We'll mark it as Exhibit 1 for your interview.

17 A. Remember that this thing was written by
18 an administrative assistant and a lot of words are
19 not -- you have to understand the plant to know
20 what's going on.

21 BY MR. BEARD:

22 Q. I think I understand. She was acting as a
23 steno for what was going on in the control room for
24 any assessment or knowledge?

1 A. What we do with this, we go back and catch
2 up the reactor operator's logs, you know, because
3 it's got -- you don't have to put all this in there
4 obviously, but it's got the key times and places.

5 BY MR. BELL:

6 Q. This administrative assistant is a normal
7 member of the shift?

8 A. Yes. We have administrative assistants on
9 rotation, and there's always one present except for
10 one eight-hour period on, what is it, Friday night,
11 there's one period in their shift rotation where we
12 don't man it for a couple hours due to there's only
13 four of them. They're on a different rotation than
14 the shifts.

15 BY MR. BEARD:

16 Q. Is the providing of an administrative
17 assistant to the shift super, is that not one of TMI
18 improvements?

19 A. Yes, sir.

20 Q. I think what I'm hearing you saying is
21 that particular individual being there was of some
22 benefit?

23 A. Extreme benefit. They handle all the
24 phone calls. When we need the technical engineer

1 called, I just say get Jacque Lingenfelter on the
2 phone for me, and they'll do that and hand me the
3 phone. They're sitting there jotting all this
4 information down.

5 When you need check lists out of the
6 procedure, you say give me a check list for the
7 decay heat pump, and they go grab it and give it to
8 you so you're not over there digging through the
9 files. They maintain all the procedures updated in
10 the control room so they know exactly where all
11 these things are, and it's just a few seconds to get
12 one from the administrative assistants.

13 I also, in addition to Louie taking me
14 around the control room, I told the STA, Ted Lang,
15 to start generating a list of anything that did not
16 seem to go right, and that's the list Steve Peasel
17 gave you. So he went around the control room, and
18 based on things that didn't seem right, I said just
19 write them down even if you're not sure.

20 So all he did was just write down no SPDS.
21 MSIV closed. Just things that didn't seem right.
22 That's where this list came from. It was generated
23 that evening. The --

24 BY MR. ROSSI:

1 Q. Now, is that the best list that you have
2 in terms of an updated list of all the things that
3 went wrong during the event?

4 A. All I can tell you is on the night of the
5 event, this is the list that we generated of things
6 that did not go right.

7 Q. Okay.

8 A. So I would say, that, yeah, this is
9 probably the best list as of that time. After that,
10 we had some other minor things go wrong, but none of
11 them that would have contributed in any way to the
12 event. I mean, we found some things when we were
13 putting the boiler on and things like that, but --

14 Q. You didn't then come back later and have
15 an update to that list of things that --

16 A. This thing was being updated all along
17 because this -- the last item on here is the turbine
18 bypass valve and we actually didn't find that until
19 four or five hours later. So this was a dynamic
20 list. In other words, we kept adding to it as we
21 got into things.

22 BY MR. BEARD:

23 Q. But I guess part of what Ernie's question
24 is, and I had the same thought, is that we're now,

1 if I haven't lost total track of time, more than 48
2 hours away from the event, since the event?

3 A. Um-hmm.

4 Q. And I guess the question is have you in
5 that period of time gone back and revised that list?

6 A. Yes.

7 Q. So there is a more updated one?

8 A. We had a meeting the next day of all the
9 key players, including -- and we also brought in
10 licensing. And there was like 35 people in the
11 conference room. And we went over everything that
12 we knew that was not correct at the time and
13 assigned a responsible individual to be the lead
14 person to go start chasing that down.

15 That was before we were allowed to -- or
16 told not to touch anything. But that -- Steve
17 Wideman, if you'd like that particular -- the list
18 that was generated that day, he would be the person
19 to see.

20 Q. But that not only had the administrative
21 assistant notes on it, it was included to make the
22 list as update and complete as possible?

23 A. Yes.

24 BY MR. ROSSI:

1 Q. Yes, we would --

2 A. For -- for key safety things that were
3 wrong. It did not include like the aux. boiler fuel
4 oil flow chart that didn't work, things like that.

5 Q. Includes the major items then?

6 A. Yes.

7 Q. We do need to get that list at some point.

8 A. Like I say, Steve Wideman can give you the
9 list.

10 MR. BEARD: That's two items we've got on
11 our shopping list to get after this interview.

12 MR. BURNS: Just so it's clear, the list
13 Mr. O'Connor's referred to is Exhibit 1 to Mr.
14 Feasel's interview.

15 BY MR. BEARD:

16 Q. You say this list we just got through
17 talking about, not Mr. Feasel's list but the update
18 the next day, that would have been -- the event took
19 place on the 9th. That would have been generated on
20 the 10th or later --

21 A. I think that was actually on the -- the
22 days are running together. I was here all day the
23 next day. I didn't go home until about seven at
24 night. So it would have been Monday morning, not

1 Sunday.

2 Q. So this update we're talking about was
3 generated Monday morning?

4 A. Yes, sir.

5 Q. Which would have been the 10th?

6 A. Right.

7 Q. Okay. This is now Wednesday the 12th, I
8 believe?

9 A. Yes.

10 Q. Has the list been revised or updated since
11 then?

12 A. I have no idea. I have no idea. I've
13 been over here the last two days.

14 MR. ROSSI: Okay.

15 BY MR. BEARD:

16 Q. It would be interesting to know if someone
17 has gone back on your staff, and I'm certainly not
18 critizing you for not knowing, but it would be
19 interesting to find out if there's been an attempt
20 made to update it again to include even the minor
21 items that had misbehaved during the event.

22 A. I'm sure that I can tell you all of them
23 by -- I have an operations coordinator, Vern Opfer,
24 who maintains the list of everything that is out of

1 service right now. And I'm sure that his list is
2 current. And I'm sure that it includes everything
3 that is not correct. He's the man that gets all the
4 work requests in the morning that are written by the
5 operators and keeps us up to date on all the
6 equipment that is not up to date or in service.

7 MR. ROSSI: Are you keeping track of the
8 things that we want to ask for?

9 MR. LANNING: All right. I'll do it.

10 MR. ROSSI: We need Steve Wideman's
11 list of all malfunctions that was updated. And you
12 had --

13 BY MR. BURNS:

14 Q. The topical report or addendum. And you
15 said Mr. Opfer?

16 A. Vern Opfer, O-p-f-e-r. Would be able to
17 provide a list of anything that's got a work request
18 or work order generated on it.

19 BY MR. BEARD:

20 Q. Okay. So --

21 A. I think where I was before, we had just
22 made the message on the emergency paging system.
23 Just prior to that, after I got to the control room,
24 we received a boron calculation from the Chem Lab.

1 And the operators had completed a shutdown margin
2 calculations to -- based on the nuclear
3 instrumentation that did not function in the source
4 range, and we had -- our shutdown margin was
5 adequate for the number but --

6 BY MR. ROSSI:

7 Q. This was done after it was known that the
8 source range instrumentation was not working?

9 A. Yes.

10 BY MR. BELL:

11 Q. The time period right now is somewhere
12 between 3 a.m. and 3:30 I take it?

13 A. 2:50.

14 Q. Okay.

15 A. Four minutes after I got there. A boron
16 calculation was called up by the Chem Lab to the
17 control room. They had just finished emergency
18 boration. They chunked in an extra 50 or 60 PPM of
19 boron, which normally you don't do after a trip
20 because the Xenon takes care of you anyhow.

21 But without the NIs, you go conservative
22 and throw the extra boron in. I was also told that
23 they had verified that there was no secondary
24 activity and no increase in any containment activity,

1 so that all -- those three reports came from the
2 Chem Lab at 02:50.

3 BY MR. BEARD:

4 Q. When you arrived in the control room, Bill,
5 you told us earlier who all was there, but just in
6 rough count, would you say what, about eight people
7 in there counting yourself?

8 A. I'd say that there was eight or nine
9 people, yes.

10 Q. Okay. This is a typical awkward question
11 for me to word, but let me try to do it anyway. Can
12 you discuss a minute, you said you met with Louie,
13 the operations supervisor, and he took you around
14 and showed you various instruments and how it was
15 straightlining various things?

16 A. Louie and Ted both.

17 Q. Okay. To what extent --

18 A. And the STA, he was tagging along with us.

19 Q. I'm still grappling with the thought
20 of who's calling the shots in the control room,
21 and in conjunction with that, to what extent
22 getting management -- I'll put you in category of
23 management -- to getting them up to date, up to
24 speed, briefing, change over of information, took

1 time away from this shift supervisor, so the two
2 aspects.

3 A. The plant was stable at this point. The
4 five minutes it took Ted and Louie to tell me where
5 we were at I don't feel took time away from the
6 shift supervisor at that point.

7 Q. I'm not criticizing. I just want to
8 understand what was involved.

9 A. What was involved in the turnover?

10 Q. Yes.

11 A. Just basically where we were now. They
12 told me the status of the aux. feed pumps, the fact
13 that No. 1 was running on the trip throttle valve in
14 manual control. No. 2 was the pistol grip was in
15 manual, and they were controlling the speed from the
16 control room, not in auto essential control.

17 They told me the start-up feed pump was on,
18 feeding steam No. 1 generators, and the levels were
19 being controlled just fine. We looked at the
20 primary plant parameters. Pressurizer level at that
21 time was a little high. It was up over 200 inches
22 if I remember right. But pressure and everything
23 was normal.

24 Typically, post trip pressurizer level

1 would be down around 100 inches, but they had
2 injected acid and water from the BWST to complete
3 their boration, so -- and did not let that water
4 down. They kept the inventory in the system. So
5 the pressurizer level was a little high, but that
6 was to be expected. Like I said, the entire
7 briefing probably took me five to six minutes at the
8 most.

9 Q. To what extent were you giving directives
10 for operation of the plant or systems or people?

11 A. I was given no direction -- I was not
12 giving any direction to the operators at this point.
13 Anything that we needed done by the operators, you
14 know, we'd -- I'd say, Ted, we need to check on this.
15 And, you know, he would direct the -- either Steve
16 or one of the reactor operators to have an EO check
17 on it or get it for me.

18 BY MR. BURNS:

19 Q. Steve is Steve --

20 A. Feasel.

21 Q. Feasel.

22 A. Yeah. We got a couple Steves coming into
23 play here.

24 BY MR. BEARD:

1 Q. I hope you appreciate these questions --

2 A. Yeah.

3 Q. -- about who's running the show. They're
4 sometimes painful.

5 A. Ted was running the show.

6 Q. And the answers --

7 A. As far as --

8 Q. -- seem to be coming out the way you'd
9 want to hear them. But nonetheless, we have to ask.

10 A. Yes. Ted -- you know, Ted was the shift
11 supervisor, and, you know, I don't direct equipment
12 operators to do things, you know. That would really
13 detract from him knowing what's going on. So the
14 next thing I did -- do we want to continue?

15 MR. ROSSI: Yes, continue.

16 A. They had just paged all the key response
17 personnel. In other words, initiated the emergency
18 page system. I didn't wait for Jacque Lingenfelter
19 and Don Lee and Dave Bryden, who was the technical
20 engineer, the maintenance engineer and the chemist
21 and health physicist, to call in.

22 I had the admin assistant get them on the
23 phone for me immediately. And Jacque was the first
24 one I contacted and told him I need he and Stan and

1 Joyce Lingenfelter, which is his wife, she's our
2 computer programmer, to come in immediately to start
3 getting the data out of the computer and start
4 assessing the transient.

5 BY MR. BEARD:

6 Q. This is the DAD system?

7 A. Yes.

8 MR. SILBERG: What does that stand for?

9 A. Data acquisition and display system.
10 That's the -- draws the little fancy graphs and
11 based on what's in the computer. So Jacque said
12 he'd be in momentarily. He only lives down the road
13 in Graytown, Ohio.

14 BY MR. BEARD:

15 Q. But calling him in, Bill, was to assess
16 how -- where you'd been?

17 A. I wanted some -- I wanted the tech section,
18 maintenance and extra C&HP in here right away --

19 Q. But I mean --

20 A. -- to see where I was.

21 Q. Getting back to the DAD system, you wanted
22 to see where you had been?

23 A. Yes. Looking on the control room
24 instruments it's hard to tell because they move so

1 slow. Like on RCS pressure, all you see is this.
2 And on steam generator level, all you see is this.
3 You can't tell in that ten minute time frame where
4 the plant had been because the strip charts move so
5 slow that they just draw all over each other and all
6 you see is lines take over the whole range.

7 Q. Your plant design didn't include a feature
8 on auto trip or ESF evacuation that it slows the
9 recorders down?

10 A. No, sir. I called Don Lee a couple
11 minutes -- well, as soon as I hung up from Jacque
12 and told him that I needed maintenance support in
13 all areas. In other words, I wanted pipe, mechanics,
14 and electricians and INC in addition to the people
15 that we had on site.

16 BY MR. BELL:

17 Q. Pipe is pipefitter?

18 A. Yes.

19 Q. Okay.

20 A. I said, just send me a couple of each just
21 so that I have them here. He said no problem. And
22 he'd be in in a few minutes. He lives down the road
23 this way. I called Dave Bryden. I told him I
24 wanted at least one management health physics person

1 and at least two testers in addition to the ones
2 that they have on site all the time.

3 Knowing that I -- with the extra borations
4 and all that was going on, that I'd need some more
5 samples, and I told them that I would need that
6 immediately. So he sent Dennis Hennen, who's the
7 chemistry foreman, management person, and I don't
8 remember the names of the testers, but several
9 technicians showed up with him.

10 And that -- the next thing I asked the
11 admin assistant to call in the day shift to come in
12 at 4 o'clock. The night --

13 BY MR. ROSSI:

14 Q. This is 4 o'clock in the morning?

15 A. 4 in the morning. That -- the time frame
16 that we're talking about right now is about 10 after
17 3. I told her to call all the night shift -- day
18 shift to tell them to come in at 4 or as soon as
19 they could get there after that. Based on all that
20 the night shift had been through, I wanted some
21 extra people.

22 The fact that we weren't in a normal line
23 up on everything and we'd have to get vacuum
24 reestablished and there was -- you know, just

1 wrapping up the rest of the plant, one shift can do
2 it, but it's a lot better with two. And that was
3 all the people that I really felt I needed at that
4 time to -- for me to get everything, you know, what
5 I considered back to normal.

6 BY MR. BELL:

7 Q. Is your plant manager on site now?

8 A. He arrived -- I've got his time too. He
9 arrived at 3:13, right about now. He walked in the
10 control room. I was just finishing up those calls
11 when he walked in. Dick Crouse, vice president
12 nuclear, came in about 3:04 according to the
13 computer printout for the control room. So now at
14 this time in the control room we've also got plant
15 manager and vice president nuclear.

16 Q. Is it getting crowded up there?

17 A. Not really. They stayed back out of the
18 way. They didn't get up in front of the panels or
19 anything. Dick just stayed back in the back and
20 asked if he could do anything as far as getting
21 anybody else out. I just informed him I called
22 everybody I needed right now. They were all on
23 their way in.

24 He wanted an update on the plant, and I

1 told him I couldn't do it right at that moment. I
2 was busy, and that I'd get back with him in a few
3 minutes, which it was about 10 or 15 minutes before
4 I actually got him updated.

5 Q. Okay. Now, if we're talking in the time
6 frame somewhere after 3 o'clock, that's an hour and
7 a half after the initial event.

8 A. Yes.

9 Q. What's the attitude of the operators? Are
10 they relieved now or --

11 A. The operators are -- they're still on a
12 high.

13 Q. Yeah.

14 A. But they know that they've been drawing
15 straight lines now for over an hour, and they're
16 getting somewhat relieved. In fact, you know, Steve
17 Feasel even said, God, I can eat the rest of my Baby
18 Ruth now. When he walked in the control room he had
19 a half a Baby Ruth candy bar in his mouth and, you
20 know, he just threw it on the desk, and it was
21 laying there.

22 So, you know, you could tell that there
23 was a little bit of -- you know, they were coasting
24 down from where they were. None of them would sit

1 down though. I mean, they were all just, you know,
2 they couldn't come down enough to sit down and drink
3 a cup of coffee or anything.

4 They were standing -- well, Brian had to
5 stay at the panel or one of them with the aux. feed
6 manual, but they were all just back and forth down
7 the panel, so they were -- they still had a lot of
8 adrenaline being pumped. But there was a little bit
9 of a -- you could tell they seemed more relaxed.

10 They knew that I was there, Louie was
11 there, Steve was there, and there was a few more
12 eyes looking over their shoulders to make sure that
13 they hadn't missed anything, that everything looked
14 okay, and there was a lot of people coming in. And
15 the folks started ringing then saying Chem Lab's
16 here, maintenance is here, I&C is here. You know,
17 where do you want us.

18 So we knew that within a few minutes, we
19 had literally 40 or 50 extra people on site from
20 those other disciplines, and I think that gave them
21 some relief, that they knew that if something else
22 broke, at least they had all the mechanics here and
23 all the I&C here.

24 BY MR. BEARD:

1 Q. Did you activate the operations support
2 center?

3 A. No.

4 Q. Did you basically do that function through
5 some other vehicle?

6 A. The vehicle I used was Don Lee who was in
7 his office, the maintenance engineer. So they were
8 all here. And we didn't need to formally activate
9 the op support center and get accountabilities or
10 anything like that. We just used the responsible
11 shop foreman.

12 In other words, if I needed an I&C
13 mechanic for the N1s, all I did was call up Ken
14 Brubaker and say send a guy over here, and he sent a
15 mechanic over. The start-up feed valve, which said
16 indication is not right, send a guy over here.

17 Q. Why wouldn't you have used the op support
18 center? You said something about accountability?

19 A. Well, normally when you man that up on day
20 shift, you have to account for everybody on site and
21 all that. And they get -- there's a lot more people
22 around to worry about where they're at and, you know,
23 who's here from I&C and who's here from tech section
24 and who's here from whatever. And I didn't feel

1 that was necessary.

2 I only asked for a few mechanics and a few
3 I&C, just enough that we had some of each people or
4 some of each type of people. And with the
5 maintenance supervision on site, we could just go
6 through them, and they would send whatever bodies we
7 needed.

8 Q. So in this event, the operations support
9 center may have had a degree of formality that you
10 chose not to use?

11 A. Yes.

12 Q. And you had adequate maintenance
13 supervision?

14 A. Plenty.

15 Q. So -- okay. So that was certainly no
16 advantage to have an operations support system?

17 A. No.

18 Q. What about the tech support center? It
19 seemed like that you did call people to come in and
20 analyze where you'd been?

21 A. Yes.

22 Q. What about the same question with regard
23 to why not activate the tech support center?

24 A. To activate the TSC and the OSC and all

1 these areas is very, very much upgraded from where
2 we were. And I didn't think at the time that we
3 needed all the downtown engineering people showing
4 up and the public relations people and all of that.
5 When you activate these centers, you know, on an
6 alert level, you get an awful lot of people, which I
7 didn't think we needed at the time.

8 Everything was normal. We didn't have any
9 parameters that were, you know, what I considered
10 that we were in grounds that we really didn't know
11 where we were and done a lot of damage. So I felt
12 with what I had, it was plenty at the time.

13 Q. Well, I guess you're saying that for the
14 status the plant had gotten to --

15 A. Yes.

16 Q. -- you didn't need to activate the world.
17 But in terms of looking back to see how bad off
18 you'd been through, that's what you wanted done for
19 you?

20 A. Yes, that's why Jacque and Stan and Joyce
21 and -- I don't know if Jacque called anybody else,
22 but --

23 Q. But that is one of the functions that a
24 tech support center could have served for you?

1 A. Yes.

2 Q. If you had chosen to go with that degree
3 of formality?

4 A. Yes.

5 Q. So again could we say that the tech
6 support center as a organizational entity had a
7 degree of formality or degree of involvement of
8 people that were not needed in this event, that that
9 was not of use to you?

10 A. It was not of use to me to have all the
11 extra people. The people that I needed to get all
12 the data out were the tech -- was the tech section,
13 and they were here.

14 Q. Okay. Do you not have a way of activating
15 some graduated thing or is it an all or nothing
16 situation?

17 A. The way our procedure is, it's essentially
18 all or nothing. You can selectively say I only want
19 certain people, but you spend so much time doing
20 that, calling them, you know, all, all the extra
21 bodies for that normally report to the tech support
22 center like a rad com operations manager and all
23 that that I really didn't think we needed. By the
24 time I had gone down there and marked the list up, I

1 could have beached everybody and said no, I don't
2 need you. It was easier.

3 Q. For this event, both the op support center
4 and tech support center you used, you performed
5 functions that were related to those kinds of
6 concepts, but you did them informally within the
7 regular system rather than the emergency systems?

8 A. Yes, sir.

9 BY MR. LANNING:

10 Q. What outside organizations have been
11 notified at this time?

12 A. At this time?

13 MR. SILBERG: You mean at 3 in the morning
14 or as of today?

15 BY MR. LANNING:

16 Q. 3 in the morning?

17 A. 3 in the morning outside organizations
18 would have only been the sheriff who we call, and he
19 in turn calls the county agents, and they in turn
20 call the state agents. So we notify the sheriff.

21 BY MR. ROSSI:

22 Q. What triggers the notification of the
23 sheriff?

24 A. The usual event. Well, two things. We

1 have a commitment to Ottawa County any time we lift
2 a safety. Any event outside that makes noise we
3 have to call the sheriff within 10 minutes.

4 Q. That's a reactor trip?

5 A. Anything. If I lift the 235 pound relief
6 header due to boiler screw up, I have to call the
7 sheriff. So any time we lift an outside relief, we
8 have to call them, so they get called on every
9 reactor trip. He was called for the reactor trip.
10 He was again called when the unusual event was
11 declared.

12 BY MR. BEARD:

13 Q. And he in turn pyramids out and does the
14 other notifications?

15 A. He pyramids out, notifies the three county
16 commissioners.

17 Q. You notified the NRC by this time?

18 A. Yes.

19 Q. Who else?

20 A. That was all as far as outside people,
21 other than our own management. But outside agencies,
22 that was the extent of the notifications. From here
23 on, it was essentially just tying up loose ends; in
24 other words, getting the turbine on gear so that we

1 could get seals back and getting the ring bus
2 reestablished in the switch yard and all the things
3 you do as part of your normal post trip procedures.
4 I wasn't getting tied down with any of that.

5 Walt Rogers had showed up at this time,
6 and Don Kosloff are our two inspectors, and they
7 wanted an update as they came into the control room.
8 So I spent some time with them and explained what
9 went on where we were now, what we were doing.

10 And I also discussed with Walt the fact
11 that by our emergency action levels for that ten
12 minute time frame, literally we were in a site
13 emergency during that time. And that we did not
14 declare a site emergency because by the time we got
15 into the EALs when it's all over, we were out of it.
16 We had normal feedwater cooling.

17 And he said he didn't expect us to go
18 declare a site emergency, then undeclare it. He
19 said he felt that at the time what we had done was
20 fine. We had all the people we needed. We had the
21 management, the support. So this occurred at 4
22 o'clock in the morning. And it's in our little
23 handwritten log that that was discussed with the
24 resident.

1 Q. Did you have on there what time Walt
2 arrived?

3 A. I don't have the time he arrived, but it
4 was just about before that. It seems to me he came
5 in about 10 minutes before that. I don't have his
6 exact time.

7 Q. Let's see. I'm not sure I remember right.
8 Which was the first resident to arrive?

9 A. Don Kosloff.

10 Q. Don arrived first?

11 A. Yes. And Walt shortly thereafter.

12 Q. Do you have a rough idea, what are you
13 talking, 3:45?

14 A. I'd say like 3:45. And Walt about 4
15 o'clock, somewhere in that time frame. I can get
16 their exact times if you need it. I'll just call
17 the guards and get a computer printout.

18 MR. BEARD: No problem.

19 BY MR. ROSSI:

20 Q. Let's see, why don't you continue then.
21 What happened? What did you do next yourself?

22 A. Essentially from here on, Steve Quennoz
23 and I were going through all of the papers in the
24 control room, making sure that the unusual event

1 check list had been -- everything correctly signed
2 off, the post trip review, making sure the STA had,
3 you know, gotten all of his paperwork done.

4 In other words, I was just checking over
5 to make sure that the -- somebody had all the log
6 sheets there, that the trip recovery procedure was
7 being signed. Kind of an administrative overview to
8 make sure that nobody had anything that fell in a
9 crack that we might have missed.

10 And Steve and I were discussing whether we
11 should downgrade from an unusual event at this time.
12 It was about 4 in the morning. And I said I didn't
13 want to downgrade from the unusual event until I was
14 confident that we had vacuum back, we had turbine
15 bypasses steaming to the condenser. In other words,
16 we'd restored the entire secondary side and gotten
17 off the atmospheric vents and aux. feedwater.

18 So even when I got the boiler back, vacuum
19 back and all of that which was later on in the
20 morning, we let it sit like that for several hours
21 to ensure that we were able to maintain it. Then we
22 downgraded from the unusual event. So there was a
23 lot of discussions went on as to whether we should
24 downgrade or not.

1 And I don't want to say I was the
2 dissenting vote, but I didn't want to downgrade
3 until I was positive that that secondary plant was
4 going to maintain all -- where we wanted to be. We
5 had had a few problems with the boiler. I wanted to
6 make sure that the boiler was up and staying up and,
7 you know -- I don't remember the exact time we
8 downgraded right off the top of my head, but seems
9 to me it was like six hours later; is that right?

10 BY MR. BEARD:

11 Q. It sounds as though, Bill, there was some
12 concern whether some other degradation or problems
13 could --

14 A. Knowing we had two aux. feed pumps that
15 didn't work and some problems with the main feed
16 pump, I wanted to be 100 percent positive that as
17 soon as I transferred over to the condenser cooling,
18 the next thing that happened wasn't the boiler
19 tripped and immediately I'm back on the aux. feed
20 pumps and atmospheric vents.

21 So I, you know, I did maintain us in an
22 unusual event probably longer than necessary, but I
23 felt it was needed due to where we, you know, what
24 we had been through over the night. I was probably

1 taking a much more conservative approach than maybe
2 was necessary, but I felt it was important.

3 BY MR. BELL:

4 Q. Who made the decision to take the unit to
5 mode 5 and when was that decision made?

6 A. The decision to go to mode 5 was made by --
7 we had a -- geez, I'm trying to remember whether it
8 was a full SRB. Later on in the afternoon, on
9 Sunday afternoon, we met with -- Steve Quennoz was
10 there, Jacque Lingenfelter. Steve had been in
11 contact with -- well, Dick Crouse was there. I'm
12 trying to get all the players that were present.
13 There was other people there, but I can't -- I can't
14 get all the phases.

15 And we discussed a lot of things, one of
16 them being if we immediately go off to mode 5, we
17 can't do any testing because we won't have vacuum
18 and steam available for the main feed pumps. We
19 won't have steam available for the aux. feed pumps.

20 I kept saying, yeah, but, we've been here.
21 We're not really -- we'd already declared one aux.
22 feed pump inoperable because of the fact that we
23 couldn't get control of it at all. The other aux.
24 feed pump was shaky at best. In other words, not --

1 when we tried it in auto essential, it didn't work,
2 and we didn't try to put it back.

3 I said aux. feedwater really isn't
4 officially 100 percent operable. I didn't feel
5 comfortable sitting there in the situation we were
6 in, and I wanted to go to mode 5 immediately. But,
7 like I say, there was about an hour's worth of
8 discussion there over it. We tried to weigh all the
9 pros and cons where we wouldn't be able to
10 troubleshoot anything and all these.

11 But I said, yeah, and also we just had a
12 pretty bad event, and we're not sure what caused any
13 of this stuff. If we sit in mode 5, nobody will get
14 on our case. Where if we sit in mode 3, we're
15 liable to get much more than a quarter back.

16 BY MR. BELL:

17 Q. Was there any discussion about the NRC
18 forcing you to cold shutdown and not letting you
19 start back up?

20 A. That subject was brought up saying if we
21 get to mode 5, they're liable to pull the key, but
22 it did not become an overriding factor.

23 BY MR. BEARD:

24 Q. What about your technical specifications?

1 Did you enter any sort of action statements that
2 would cause you to have to go to mode 5?

3 A. There was nothing at the time since we had
4 only declared aux. feed train 1 inoperable. Had I
5 declared aux. train 2 inoperable, that would have
6 been six hours to mode 4, twelve hours the rest of
7 the way to 5.

8 Q. So it was pretty close.

9 A. And that was -- I wasn't comfortable
10 calling it officially operable. It was doing its
11 safety function. It was running just fine pumping
12 water in manual No. 2. And doing a normal cool down
13 is much better than doing a crash down where you
14 have to run the RCPs all the way down where we don't
15 normally do that.

16 We natural circuit rather than degrade our
17 seals. In other words, we take the pumps down.
18 When we get down to -- I forget the exact pressure
19 and temperature -- we turn them off and natural pump
20 the loops and just maintain the decay, and so we
21 don't form bubbles in our hot lakes.

22 We have problems with that at our
23 particular plant. So we opted to do a normal cool
24 down as fast as we could. We didn't want to

1 dillydally around. But we said get to mode 5, and
2 we'll be there in the morning. This is late Sunday
3 afternoon when the decision was made to start the
4 cool down to mode 5.

5 Q. So the final -- we heard some discussion
6 before we left at the office, the final outcome at
7 the plant was the decision was made to go a'. the
8 way to cold shut down rather than stay in some
9 higher mode and do testing?

10 A. Yes. Yes. There's some other -- well, go
11 ahead.

12 MR. BELL: Well, if you want to complete
13 your line of thought, go ahead.

14 A. I want to talk about the tests we ran on
15 the aux. feed pump before that.

16 MR. BELL: My next line of questioning is
17 going to deal with some of the equipment and pretty
18 detailed.

19 A. The -- earlier in the afternoon, one of
20 the things that made our decision to not call No. 2
21 auxiliary feed pump inoperable, we ran the refueling
22 response time test on both pumps. In other words,
23 after we had vacuum back, we had the start-up feed
24 pump carrying both steam generators and the aux.

1 feed pump shut down, steaming to the condenser. We
2 lined up and tested both aux. feed pumps in a -- in
3 the -- a test called the refueling response time
4 test.

5 Now, what this test involves is putting
6 the auxiliary feed pump in its normal emergency
7 standby status except for the valve that feeds the
8 steam generator, the 3869 or 3872, the one that's
9 No. 1 aux. feed pump to No. 1 steam generator. We
10 open the breaker on it so we don't pump any water to
11 the steam generators.

12 Then we trip the steam feed rupture
13 control system on a loss of four reactor coolant
14 pump trip and watch the aux. feed pump start and
15 time its response time to achieve its required tech
16 spec discharge pressure. What we're --

17 BY MR. ROSSI:

18 Q. So this is with no -- with the valves in
19 the feedwater line closed?

20 A. Closed.

21 Q. Okay. So it can't pump flow.

22 A. Can't pump water to the steam generators.

23 Q. And the steam valves left to do what they
24 are supposed to do when you actuate the steam feed

1 rupture control system?

2 A. Yes, sir. It would be an essentially
3 normal start to the aux. feed pump except the valve
4 that feeds the steam generator was closed. Kind of
5 what we had during the transient except it's the
6 next valve upstream that's closed. In other words,
7 instead of the containment isolation shut, it's the
8 next valve back. The only flow the auxiliary feed
9 pump would have at this point was the minimum recirc
10 back to the condensate storage tank.

11 BY MR. BEARD:

12 Q. Is this a tech spec surveillance test?

13 A. Yes. The number is --

14 Q. You're saying that you passed the tech
15 spec surveillance test that you do during normal
16 refueling. But are you telling me that you passed
17 the tech spec test, which success being defined as
18 reaching the appropriate discharge pressure in a
19 certain time, but there were still questions about
20 whether the thing could be controlled in a stable
21 manner in automatic or manual mode from the control
22 room?

23 A. Yes. And we did not declare it operable
24 based on this test.

1 BY MR. ROSSI:

2 Q. Yes, I'm not sure I understand now. You
3 actuated the steam feed rupture control system for
4 both steam generators or both --

5 A. For one.

6 Q. For one steam generator?

7 A. Yeah. You do one pump at a time. You
8 don't do both of them.

9 Q. And which pump did you do?

10 A. We did No. 1 first.

11 Q. No. 1. And --

12 A. Let me back up here. We might have done --
13 I got to think which one we had done here. There
14 was some discussion as to which one we wanted to do
15 first.

16 Q. If you can't remember.

17 A. I can't remember whether it was one or two.
18 We may have done two. If we did one, then we did
19 the other one right after it.

20 Q. Okay. But what were the results?

21 A. The results were the aux. feed pumps ran
22 perfectly normal.

23 Q. So they both came up to speed?

24 A. In auto essential.

1 Q. Auto essential within the required time
2 and they could control on their speed --

3 A. Yes.

4 Q. Fine. Both of them. So both pumps passed
5 that test?

6 A. Yes.

7 BY MR. LANNING:

8 Q. Is this after maintenance had been
9 performed?

10 A. Nothing had been performed.

11 BY MR. BEARD:

12 Q. Let me go back and follow-up this thing.
13 When you ran the test, the controls for the pumps
14 were in auto essential?

15 A. Yes.

16 Q. And you say that it not only came up to
17 proper speed and discharge pressure, but it
18 controlled all right?

19 A. When you say control in this mode, it
20 doesn't know what level to control. It just comes
21 up and stays on the high speed stop because the
22 circuit breaker that you open for that valve is what
23 tells it what steam generator level to control. So
24 all that this test does by disabling that, it tells

1 the auxiliary feed pump to go to the high speed stop
2 as fast as you can get there.

3 Q. Okay. But I guess what I'm really trying
4 to understand is that you passed the test?

5 A. Yes.

6 Q. But it still didn't really show that the
7 equipment was functional in the way that it normally
8 does and the way you'd like to see it?

9 A. True. It was not intended to run this
10 test and declare the pumps operable.

11 Q. I'm not questioning that. I really have
12 in the back of my mind a thought of the adequacy of
13 the test itself.

14 A. We only ran one phase of this test. This
15 test has many phases. All I was trying to do was
16 see if I could duplicate that super feed trip. In
17 other words, we ran a section of this test. This is
18 about this thick. It's about this thick.

19 Q. That's about two inches thick.

20 A. And there's many, many phases to this test.
21 We ran the phase that gives the pump a start signal
22 and just measures the response time from stopped to
23 discharge pressure required by the tech specs, which
24 is only one phase of this test. And all I was --

1 that's -- this particular test is the easiest way
2 for me to see if the auxiliary feed pump can start,
3 get up to speed and not trip.

4 Q. Okay.

5 A. In other words, I didn't want to have to
6 write a special addendum to the operating procedure.
7 I knew that this test existed. And I said, let's
8 just run section 6 of the refueling test as a quick
9 and dirty method to see if we can make that aux.
10 feed pump trip again.

11 Q. Okay.

12 A. We wanted to see what its control was. We
13 also wanted to get some confidence in No. 2, since
14 we had not officially declared it inoperable. We
15 wanted to say, yeah, No. 2 aux. feed pumps are right
16 in its present condition, so that we don't have to
17 enter an action statement on loss of both trains and
18 have to do a six hour cooldown.

19 Since we'd already put the plant through a
20 big enough transient, to try and do a rapid cool
21 down and depressurization -- a normal cool down
22 which takes 10 or 12 hours is much more controlled.
23 So we wanted to build a little confidence in No. 2,
24 so that we didn't have to officially declare it

1 inoperable at the time.

2 BY MR. BELL:

3 Q. So by doing this test on No. 2 auxiliary
4 feedwater turbine, you were attempting to stay
5 out of -- not only satisfy in your mind that it
6 would pass some sort of operability test, but it
7 would also keep you out of technical specification
8 3 point --

9 A. 303.

10 Q. Okay.

11 BY MR. ROSSI:

12 Q. Now, did you do any additional testing of
13 either of the pumps at that time?

14 A. No, sir.

15 Q. Or thereafter?

16 A. No, sir.

17 Q. So you ran this test. And what did you do
18 with the pumps?

19 A. We ran them in our normal --

20 Q. Auto essential?

21 A. Auto essential standby condition ready to
22 start automatically.

23 MR. ROSSI: I'd like to go off the record
24 a minute if we could.

1 (Thereupon, a recess was taken.)

2 MR. ROSSI: Why don't we go back on the
3 record, and we'll continue with Mr. O'Connor. I
4 don't know who -- do you want to go next?

5 MR. BELL: Yes, if you don't mind.

6 MR. ROSSI: That's fine.

7 MR. BELL: Hopefully my questions will be
8 short.

9 BY MR. BELL:

10 Q. During any time in the event, did you have
11 to install any electrical jumpers to get equipment
12 to operate correctly?

13 A. Not that I'm aware of.

14 Q. All right, sir. We were told earlier this
15 morning that the turbine bypass valve failed because
16 a portion of the main steam header had been filled
17 with desuperheating spray from the feed system, I
18 think, the gentleman told us. However, that seems --
19 seems to be a little funny since both feed pumps
20 were tripped. He mentioned values of 1100 pounds
21 per square inch. And you had no pumps operable
22 that has that high of a discharge pressure.

23 A. Start-up feed pump was running. As soon
24 as the start-up feed pump was running, the system

1 depressurized. The desuperheating valve control
2 was -- the automatic portion was out of service, and
3 it was being controlled on a bypass valve.

4 Q. Yes, we got that part. Okay. I inferred
5 that. I don't think I'll take this any further.
6 I'd forgotten about that start-up of the start-up
7 feed pump. Do you think if the operators had the
8 SPDS display available, it would have been easier
9 for them to ascertain plant conditions?

10 A. Yes, sir, very much so. I don't think
11 that they had any trouble ascertaining what they
12 were in. But the SPDS is a great machine when it's
13 working.

14 Q. I would think that you'd want that
15 operable at all times or as a high availability as
16 possible not only because your operators are trained
17 on that at the B&W simulators, but is it not also
18 listed in your emergency procedures?

19 A. Yes.

20 Q. The pressure regulator on the discharge of
21 the feed pump oil pumps that supplies control oil
22 pressure, if that valve did not move quickly enough
23 on a feed -- a rapid feedwater reduction signal,
24 would it be possible that you could drop oil

1 pressure low enough to pick up the thrust bearing
2 wear trip on the feed pumps?

3 A. That is one of the possibilities that
4 General Electric has come up with that on a
5 extremely rapid move with the oil system, it may be
6 able to get a thrust wear trip. We did try and
7 duplicate that with up to 6 and 7 hundred rpm step
8 changes during the testing before the last start-up.
9 In other words, we dialed in a signal as big as we
10 could get between the ICS and manual and then put it
11 into automatic and watched the pump step change and
12 speed to try and force it to do that. And we were
13 not able to.

14 Q. Okay.

15 A. It is a possibility though.

16 Q. Last question. Why wasn't start-up range
17 number -- the inoperable start-up range fixed prior
18 to restarting up on the second of June?

19 MR. ROSSI: That's on the nuclear
20 instrumentation?

21 Q. Yes. Source range. Excuse me, source
22 range, NI-2.

23 A. Both NIs had to be operable to take the
24 reactor critical. It had to be operable. It

1 malfunctioned after that. I'm not sure the exact
2 day.

3 Q. Had it malfunctioned previously?

4 A. Then you cannot start the reactor up.

5 Q. No, previously to the trip on June the 2nd?

6 A. Had it malfunctioned previous to that?

7 Q. Yes, sir.

8 A. Yes.

9 Q. Okay. I'm through, sir.

10 BY MR. BEARD:

11 Q. Okay. I'd like to ask a question if I may.

12 I guess I'll take the next turn.

13 Bill, I'm trying to nail down in my mind
14 the situation on the behavior of the PORV, okay?
15 From the information I think we've heard, the
16 operator, for seat of the pants reasons or whatever
17 other reasons, he elected to close the block valve.
18 He didn't like the way things were going apparently.
19 Okay. And then I understand subsequently the valve
20 appears to have been closed, the PORV was closed.
21 And then the block valve was reopened later.

22 Could you give us your assessment as to
23 whether or not you believe that the PORV was open on
24 that third operation when it should have been closed

1 or this -- I'm calling for an assessment on your
2 part as to whether it misbehaved during this event?

3 A. Looking at the data, it appears that on
4 the third lift it may not have closed as rapidly as
5 it should have. In other words, it was not the same
6 as the first two lifts. There may have been other
7 things that entered into that though. They were a
8 little hotter at the time. In other words, there
9 was probably a little more energy being put in. The
10 PORV may have, you know, stayed open for that reason.

11 It still should have closed when the
12 pressure dropped below 2350, you know, on its normal
13 reset set point. I still, not having all the
14 information, I still, looking at it, I think that it
15 was not normal though. I think that it stayed open
16 too long.

17 Typically what, you know, we haven't
18 lifted a PORV since our September '77 incident,
19 but when we did stick one, it usually just draws a
20 sawtooth when you're sitting on the PORV. And it
21 doesn't -- you know, the sawtooth sizes don't
22 usually change. So looking at the data and not
23 knowing anything else, it appears that on the third
24 lift it blew down too far.

1 Q. Okay. Following --

2 A. Which does concern me.

3 Q. Yes. Me too. There are other people that
4 are concerned also.

5 Following that, when the PORV block valve
6 was closed, the PORV apparently was believed to
7 have closed, and I'm not sure the source of that
8 information, but at least it was believed to have
9 closed. And then it -- somebody made the decision
10 to reopen the block valve. Could you describe
11 what the basis for that decision was, who made it,
12 and what the intended purpose of that opening was?

13 A. I do not know the answer to any of those
14 questions. When I came in, it was unisolated. And
15 I was not aware until much, much later in the day
16 that they'd even had a problem with the third
17 blowdown.

18 Q. Okay. Thank you.

19 MR. BEARD: That's the end of the
20 questions I have at this time.

21 MR. ROSSI: Okay. What we're going to do
22 is stop now with the interview with you because we
23 want to talk to other people about the plant
24 equipment, and we recognize that you have to leave

1 also. We're going to come back and talk to you some
2 more. And what we'll be talking to you about then
3 is, you know, things that were done in the later
4 hours and days after the event with equipment,
5 decisions that were made and that sort of thing.

6 BY MR. BEARD:

7 Q. Could I ask, Bill, you're leaving to go
8 down to Lynchburg?

9 A. Yes.

10 Q. When are you scheduled to return?

11 A. I have a flight back Saturday morning.

12 I'll be back around noon on Saturday.

13 Q. Are you planning to come back to the plant
14 then or are you taking the day off or what? Are you
15 scheduled to come back on duty?

16 A. I'm not scheduled -- I'm not planning to
17 come back until Monday.

18 Q. Monday.

19 A. But, you know, if you guys are -- or if
20 you want me to come in so that you can get back to
21 Washington Monday, then, you know, I can come in and
22 finish our interview. Like I said, it's important
23 that you finish your interviews, and, you know, I
24 will come in if you want me to.

1 MR. ROSSI: We'll have to see where we are
2 and, you know, how our schedule is because that's
3 premature now to try to decide when the best time to
4 talk to you again is.

5 A. I have no objections to coming in. I know
6 how important this is to get resolved.

7 MR. ROSSI: Okay. Then why don't we agree
8 to stop with the interview now, and we'll take
9 another short break. And then at 4 o'clock, I guess,
10 we'll have this other meeting. And we're going to
11 have that upstairs, I believe, are we not?

12 MR. BEARD: This is a meeting to talk
13 about the quarantine?

14 MR. ROSSI: Yes. Okay. We can go off the
15 record now.

16 - - - - -

17 Thereupon, the interview was
18 concluded at 3:51 o'clock p.m.

19 - - - - -

20

21

22

23

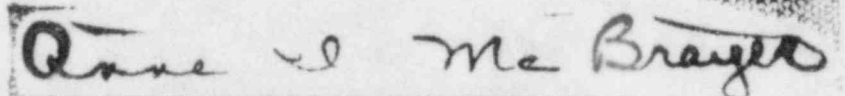
24

CERTIFICATE

I, Anne I. McBrayer, a Registered Professional Reporter and Notary Public in and for the State of Ohio, do hereby certify that I took the interview of William O'Connor 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 Court 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 14th day of June, 1985.



ANNE I. MCBRAYER, RPR and
Notary Public in and for the
State of Ohio.

My Commission expires February 3, 1988.

EXHIBIT

0133-

O'Connor - 1

Sheriff Office called
0145

St. 2 d/ make up pump
All rods on bottom
All sub plus skirt

Stone Verified 0200

#1 conds pump
Verify fw response
" SFARS not actuated
" " is not act.

SFARS not actuated

Verify
Above 950 lb.
Code safety lighted
#2 side opening
Curt boiler going
SFARS -

? M-skirt vents

Need help on secondary side
Trip on SFARS stm gen. low level
Bill O'Connor called 0140
Ck stm iso at Curt 7. Pump.
Tripped over to BUST

~~Reset A 7. P. - Let St up 7. pump.~~
Block Atmos Vent plus (open)
7 Pumps in manual (Have one)
~~599~~ 599 open
Use #1 pump - cannot get nothing
out of it

0147

going high on temp -

Need Aux 7. pump

608 going open - no ~~the~~ speed for
Aux pump -

Overheating

Queenroy called.

Loosing Header pressure (overheating)

601 - 612 coming open

Nothing on aux 7.P.s

Overheating -

106 - 107 open

Still have sub-cool.

Eng. plan - to verify lossy main
& Aux 7.P. wtr

Cooling off -

#1 Aux 7.P.m.p on

losing vacuum

~~5715-~~

~~5~~

Aux 7 pmp back -

Cooling fast - 800 on 1 - 700 on other

* Site Eng -

Declare Unusual? Event -

peggy - back on train 1 - HPI

40 inches on both steam gen.

Throttle back on #1 side

Aux 7. P. tripped -

~~Peggy~~

Service Utr. - swap section on AFP one side

~~Service Utr.~~

0200 - Good sub cool margin all time
Reestablishing levels

recovering pressure

Got Heat transfer

Open throttle Vlv - all way #2 side

601 - 612 both open

leave Aux 7. pmp idle

~~Break~~ Break vacuum 603 level ~~0205~~

primary pressure 2050 - time 0205

235 lb. Header back on

Verify G-5-13 is open -

Steve ^{request} Request TSC & ECC

Shut down piggy back HPI - LPI

~~Handwritten text crossed out~~

~~Shut down~~

~~Handwritten text crossed out~~

NRC called 0212 by Ted Long
Dan Markson

Walt Rogers - 0219

240 counts NI #1 NI 2 not reading
wt all

Shift MV Rap back -

Cycle between B.

- C & HP called by Steve F. for RCS boron
sample.

0225 Unusual event declared

Initiated boron

All Control Rods on Bottom

0227 → Ted Long notified Sherriff - unusual
event dec - 6/9 ~~at 0225~~ at
0225 -
verified 0239

FW 104 needs opened -

Emergency message received & verified at
0250

0250 - RCS Boron 861

No Secondary activity - no increase in Cmt
- + +

0300 SDM > 1% with No Xenon

0300 Notified J. Lingelatter for Transit Response
people (5 BATCH)

0305 Notified D. Lee - asked for mtn support

0313 Notified D. BRIDEN - asked for 1mnt, several
techs

0320 - all day shift called in at this time.

0328 - D. Hennen & C4HP tester on way

0332 - Stop Emg location.

0343 - Turbine on gear.

0350 Lost Vent. (4th time today)

0351 922 Boron

0358 - Close on Outside air dampers -

0400 - Load Dispatcher - called - ^{to} ~~re~~ establish
34620 - fuses pulled

0404 - 0057 Idoline

0405 - Lube oil temp coming back up

0407 - Chem vent: again - dumped

0409 - C+HP called - instructed to continue hourly checks - boron -

0414 #2 ^{7. Pump} working

0450 Discussed with W. Rogers the EAL for site emergency. He said we have enough people & man T here and was not necessary to declare site emerg then downgrade.

0423 Closed fuses pulled on 34620 re-establish ring bus

0427 - Re-set lock-out - per load dispatcher anti mtr - circuit defeated re-establish ring bus. 34560 & 61 are closed.

Readings $\begin{array}{r} 5401750 \\ \hline 30624 \text{ on } 01 \end{array}$ $\begin{array}{r} 2014227 \\ \hline 93741 \text{ on } 02 \end{array}$

0430 - Gland Steam
Gland sph. on

0431 - Have pegging steam.

0443 - NI #2 back on

0444 - First hit on turbine was customer trip.

0445- Steam gen. less than 18 in.

0445 - 045 boron 1028

0447 - Check Atlas - per TL.

0450 - Close 106A & 107A

0516 - Provide NRC plant status over RED PHONE

0530 Reset SFRCS

0535 RCS BORON 1040

0545 open 100A & 101A

0554 SSAR on HOGGER OFF

0605 Mr. STM NRVs Chain failed green

0609 Mech lagged in STBY

0620 WOL. #1 Purif Dmin

0625 NH 1+2 operable

0640 Reopened MSIU's

0645 RCS boron @ 1044

0250 RCS boron 861

No Secondary activity

No Increase in Ctmt activity

0300 SDM \geq 19% with no Xenon

Res mu from DW; CWMT 6' DW; open WC 1713

MU 23 closed

RE 5327 + I/C cal

2 SAC 50% LOADED

2 MFD IN MANUAL

4 MP Room deluge is available

SFAS 4 RE 2007 tripped timer! reset

2 SW states on trend, Cse states high

RE 1003A flow alarms: 1 set on, after condenser to condense
trap bypassed 1 turn; ^{AIR VAPOR AT} off ~~5.5"~~ 5.5" vs 10" (with 1.5 gpm in 1.5 gpm) (if trap closed)

1 screen wash bin open

4598 BA spiked timer - 4°F temperature inversion (459886 no flow alarm)

CLT 3 no response

Redt luk ↑ ↓ 4597 AA spiked SFAS 4 spiked

Atlas full but tank ~ empty

1715

0133 MPT 1 MPD A/CRT Pumping 500ct
0134 noted msv closed
0141 manually msv SACS both MPTs
0151 SURF ON
0225 UNDER EJECT
0300 50M > 178 w/o XENON D 933/1.0
0343 TURE 6 w/ 6.0 42
0357 422 Bored 92
~~0427 REESTABLISHED ring bus~~
0425 NE 1 & 2 are able
0442 msv's open
0710 SP100A Broken yoke
0816 270 gal benin water
3494 Acid
400 gal Tenix
400 gal skid
700 gal Acid

6/9/85

Shift Supervisor T. Selman Mode 1, Rx @ 90.01%, 817 Mw
Assistant Shift Supervisor J. Havel T.S. Action: Seismic Equip (3.3.3)
Reviewed Safety Tagging Log TH 1 SA CV5005 thru CV5008 (3.4.1.1); Fire
Reviewed Jumper and Lifted Wire Log TH 1 SA
Reviewed D-B Daily Status TH 1 SA Barriers per status board (3.7.10)
Reviewed Unit Log TH 1 SA 2 Doc 50-346; Run's 324 & 501, Rx
Reviewed Reactor Operator's Log TH 1 SA 318, FD 4 1138, 1177 (3.7.10); C3S20
Reviewed Alarms TH 1 SA Fire Panel (3.3.3.8); NI 1 (3.3.1.1)
Reviewed Clue Status Lights TH 1 SA Equip 005; RE's per status board
Reviewed Locked Valve Log TH 1 SA RW Enh Fan #1; SAC #1 & 2;
Reviewed Capped Valve Log TH 1 SA Htr Dm Pump 2; SFP Shimmer
Reviewed Passive Valve Log TH 1 SA
RCS Temperature 582°F Pressure 2155 psig Flow 143 gpm Pump
See Technical Specifications for Limits

0125 F. Moss, duty Appendix "R" electrician is on site.

0133 MEPT #1 trip, plant running back.

0135 Rx trip. MSTV's went closed.

0141 Manually tripped SFRCs, both AFP's tripped.

0151 SUFP on.

0225 Declared unusual event.

0300 Verified SDM > 1% Δk taking no credit for Xenon.

0545 RE 4598 BA inoperable.

0625 NI 1 & 2 operable. Out of TS. 3.3.1.1

0642 MSTV's open.

0710 Discovered SP13 A2 to have a broken yoke.

0625 Reviewed 3T5091.01 for NI 1 & 2.

0212 Called NRC by Red Phone. Talked to Dan Marksberry.

Y1

6/9/85

0800 Reviewed ST5099.01, 5099.02 & 5099.05.

Relieved by: S. WISE

T. Selman

Shift 123-1600 Shift Supervisor Eastman Mode 3, Rx @ 0%, 0 MW
Assistant Shift Supervisor Don H. H. H. T.S. Actions: Seismic Equip (3.3.3);
Reviewed Safety Tagging Log SW 1 SH CV5005 Hbr CV5009 (3.6.1); Fire
Reviewed Jumper and Lifted Wire Log SW 1 SH barriers per status board (3.7.10 +
Reviewed D.B. Daily Status SW 1 SH Doc 50-346); Rms 324+501, Rr 318,
Reviewed Unit Log SW 1 SH FNs 1138, 1177 (3.7.10); C 3520 Fire
Reviewed Reactor Operator's Log SW 1 SH Panel (3.3.3.9); TIT 1 (2-sec AFW train
Reviewed Alarms SW 1 SH #1 (3.7.1.2)
Reviewed Valve Status Lights SW 1 SH Equip 005: RF's per status board, RW
Reviewed Locked Valve Log SW 1 SH Exh fan #1, SAC 1+2, HTR Drain
Reviewed Capped Valve Log SW 1 SH pump #2, SFP Skimmer Pump
Reviewed Passive Valve Log SW 1 SH
CS Temperature 542°F Pressure 2155 Flow 140 MPEH
Technical Specifications for Limits

0840 Downgraded from Unusual Event per Plant Manager

0840 AFW train #1 is inoperable entered T.S. 3.7.1.2

LE.0720 During the transient of the previous shift
the following Tech Spec actions were
entered: T.S. 3.4.5b for both OTSG's; T.S. 3.3.1.1
for NIZ

1000 T+C Starting ST5031.14, S-G level in SFRCS CH2

1130 Performing ST5071.02 Phase I on AFW train #2

1245 Reviewed ST5099.01 and ST5099.05

1315 Notified by NRC Region III via ENS that we are not to start
up without adequate discussions of the incident

1400 I+C Completed ST5031.14 for SGLIC CH2, this was
test for the SRA, Does not meet T.S. Requirements

1445 Reviewed ST5071.02 Phase I, for both Trains

6/9/85

No. 9331

Straked AF 599 and AF 603, both valves passed their stroke times per ST 5071.02

Since AFW testing is complete and passed all Surveillance Requirements, the SRB has decided to proceed to Mode 5 until safety concerns are resolved

REVIEWED BY J. MICHAELIS

Scott Wise

2400 Shift Supervisor	J. Michaelis	Mode 3, R/S, Starting Plant S/O
1st Shift Supervisor	R. Michaelis	TS Actions: Seismic Equip (3.3.3.3);
2nd Safety Tagging Log	J. Michaelis	CV5005 thru CV5008 (3.6.1.1); Fire
2nd Jumper and Lifted Wire Log	J. Michaelis	barriers per status board (3.7.10
2nd S/D Daily Status	J. Michaelis	+ Cal 50-346); Rms 324 & 301,
2nd Shift Log	J. Michaelis	Dr 318, FD's 1138, 1177 (3.7.10);
2nd Reactor Operator's Log	J. Michaelis	C 3520 Fire Panel (3.3.3.8); AFW
2nd Alarms	J. Michaelis	Train 7 (3.7.1.2)
2nd Blue Status Lights	J. Michaelis	Equip 005: RE's per status
2nd Locked Valve Log	J. Michaelis	board; RW EXH Fan #1, SMC 142;
2nd Capped Valve Log	J. Michaelis	Htr Den Rmp #2; SFP Skimmer Rmp
2nd Passive Valve Log	J. Michaelis	
Temperature 50°F	Pressure 2155 psig	Flow 1490 GPM
Technical Specifications for Limits		

- 2400 CED Gpt pulled, Commenced RCS Cool-down
- Completed ST 5099.01 (Mode 3) & ST 5099.05
- Backup RCS Boron Sample indicates RCS @ 7 Cold Shutdown boron Conc, repairs to CED Sinc Confirm Logic complete
- Aux B/R trip, apparently on Low Level
- SFPCS Blocked on Low Mn Strm Press
- ITC Completed IC 2000.03 reset RPS Hi Flux trips to 4.75%, paperwork to follow
- Fixed all four RPS Channels in S/O by pass
- Reviewed IC 2000.03 Setting of RPS Over Power trip bistables
- Set all four channels @ 4.75%

1102.03

List of problems

page 1

~~1102.03~~ MFP 1 trip — post trip review 7253 rpm ^{prior to trip?}
runback
RCS hi press trip

anomalies:

No SPOS

MSIVs closed before SFRCs? per T. L. ...

POBV lifted on high RC press

AFP didn't initiate, both tripped after ~15 sec

AFP 1-1 controlled only local ^{via TTV} pistol grip

AFW transfer to SW

ineffective

AFPT-2 - pistol grip manual

2 oil pumps running on 1-1 MFP

→ No NIS

→ CTRM vent (RE4598 BA spiking) trip, 4th time in 24 hours.

Deaerator high level trip

AFG08, 599 handcranked open

(AF599 AFG08 may have been on seat-torsion switch 1990 or -)

R11 AFPT steam supplies open

→ SU FW vlv 1-2 won't open SPTA

→ Piggiey stn

T-G didn't go on gear. Fuses blow

MS 840 stuck open - can't move with bar

OTSG evaluation (T.S.?)

HPI injection while piggybacked? No one saw flow

Trip throttle vlv wouldn't hold reset - kept tripping

Most Aux boiler indication oos

Safety on SG-1 stuck down to 900 #

Errors in M050 and M-050A

List of problems page 2

ICS increased Fw demand and caused MFP 1-1 to trip

(with 1-2 in manual, MFP 1-1 tried to carry everything)

SP13A2 positioner broken (TPV) — also yoke broken

[illegible]