

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 RICHARD WALLEMAN

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Interview of Richard Wallemann by the
Nuclear Regulatory Commission Fact Finding Task
Force, taken before me, Kim E. Snyder, 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 Friday, June 14, 1985, at 9:12 o'clock a.m.

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1 APPEARANCES:

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

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8 On behalf of the Commission.
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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
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Friday Morning Session

June 14, 1985

9:12 o'clock a.m.

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MR. BEARD: Okay. This is a meeting of the NRC Fact Finding Team. My name is J. T. Beard. Dr. Rossi is not with us at the moment, but we expect that he may be able to join us in a few minutes.

The other people in the room are Larry Bell of the Fact Finding Team, Wayne Lanning on the Fact Finding Team, and Steve Burns, who is supporting the Team.

We have with us also in the room Rick Walleman, Richard Walleman, and he has asked to have present Mr. Louis Simon. And here we are.

The purpose of this meeting is to talk to Rick and have him explain from his perspective as a reactor operator who was in the control room on the night of the event here at Davis-Besse on June 9 what he saw, what he did and things of that nature.

This is a fact finding trip. We are not focusing on any compliance-type matters. We are just looking for facts so we can understand what

1 happened, and, secondly, and later we are looking to
2 why things happened.

3 I guess I should mention that with regard
4 to the transcript and your presence, our plans and
5 intent at the moment are that sometime later when
6 they are available, you will be allowed to review
7 the transcript to identify things where maybe the
8 transcript is inaccurate from what you said in an
9 addendum fashion.

10 Then there will be a revised document
11 available, and we intend at this time to make that
12 document available to you for a period of days if
13 you should want to refer back to it for some reason.

14 You could come, contact the Team, let us
15 know you would like to see something for whatever
16 reason, and we will make it available to you.

17 We intend to retain all the copies of all
18 the transcripts until such time as we have completed
19 all of our interviews with the operating staff as a
20 package and gone through this process of review and
21 corrections, and then we would intend when they are
22 there to release those transcripts so that for your
23 interview you would get a copy directly for your use.

24 And they will be available to the Toledo

1 Edison Company and the general public at that time
2 as a package, okay. Do you understand that?

3 MR. WALLEMAN: Yes.

4 MR. BEARD: Do you have any questions?

5 MR. WALLEMAN: No. A little nervous but
6 no.

7 MR. BEARD: That's perfectly normal. I
8 think, for the record, we should say that Rick is
9 here without notes, diagrams, et cetera, so he will
10 be speaking from memory. Okay.

11 Maybe we should start, Rick, as we have
12 with the other folks, with you introducing yourself,
13 tell us what your present function is, things like
14 how long you have been with the company and a minute
15 or two about background.

16 MR. WALLEMAN: Okay. My name is Richard
17 Walleman. I have been with Toledo Edison for
18 approximately five years. I have been licensed
19 since January.

20 MR. BEARD: January of this year?

21 MR. WALLEMAN: Of this year. This was my
22 first trip and unfortunately it was rather difficult,
23 but I work in a control room with Brian Young, and
24 we worked together since I have been qualified.

1 I was in the Navy eight years before I
2 came here at nuclear power.

3 MR. BELL: Rick, did you come up through
4 the operator ranks? Were you an equipment operator?

5 MR. WALLEMAN: Yes, sir.

6 MR. BELL: And you worked in both the
7 turbine building and the auxiliary building so you
8 were very familiar with the units before you
9 qualified as a reactor operator in January?

10 MR. WALLEMAN: Yes, sir.

11 MR. BURNS: Can we go off the record.

12 (Discussion held off the record.)

13 MR. BURNS: Back on the record.

14 MR. BEARD: We apologize for the
15 interruption. Go ahead with what you were saying.
16 Did you have any more to add?

17 MR. WALLEMAN: No.

18 MR. BEARD: Okay. The way we have done it
19 with the other folks that we have interviewed is
20 sort of say you came on shift at a certain time and
21 when you arrived there were certain plant conditions
22 and if you could elaborate on those and then I guess
23 if nothing unusual happened then we can jump in time
24 to about the time the transient started and pick up

1 with the first things you became aware of something
2 unusual was beginning to happen and just sort of go
3 through it. Is that okay?

4 MR. WALLEMAN: Okay. The when I came in
5 we were working midnights. This was our second
6 midnight.

7 When I came in on midnight, part of our
8 procedure is to walk around the panels and look at
9 the alarms that we have in and review the logs and
10 then get a turnover from the reactor operator that
11 was on shift at the time.

12 And when we came in, the plant was at 90
13 percent power, which is mode one, and the -- we had
14 a restriction in power to 90 percent so we wouldn't
15 be changing power that night.

16 And no other important things stick out in
17 my mind at the moment.

18 MR. BEARD: Did you have any, I don't want
19 to say abnormal, but special conditions related to
20 the control of the main feed pumps?

21 MR. WALLEMAN: Yes, we had two main feed
22 pumps and one of them was in automatic mode, number
23 two, or number one was in automatic mode and number
24 two was in manual mode. And we had special

1 instructions regarding if we had a trip what we were
2 supposed to do with the one that was in the manual
3 mode.

4 MR. BEARD: Could you describe generally
5 what those instruction were or the essence of them?

6 MR. WALLEMAN: Yes, what it was was they
7 were supposed to perform the same functions as the
8 rapid feedwater auxiliary does and that is to
9 increase the main speed of the feed pump turbine
10 trip.

11 MR. BEARD: So when you came in, you
12 really didn't have that many unusual conditions,
13 things were running pretty straight and normal.

14 I guess there is one item might be worth
15 documenting, do you remember what the reason for the
16 restriction of 90 percent related to?

17 MR. WALLEMAN: That the restrictions for
18 90 percent was due to we had had -- earlier we had
19 had some problems with our flow transmitters for our
20 reactor coolant system flow, and they had determined
21 that it was a problem with the transmitter itself.

22 And they had gone through and put some
23 filters on the power supply the transmitters but
24 until they had done that with the other power

1 supplies, we were not going to go above 90 percent
2 power, which is where they figured that was the
3 problem area could lie.

4 MR. BEARD: Was the problem of a noisy
5 channel, was that the general nature?

6 MR. WALLEMAN: Yes, fluctuation in the
7 signal transmitter from the flow detector.

8 MR. BEARD: Would it be a problem
9 statement to say you were just operating a little
10 lower than a hundred percent power in order that
11 that noise wouldn't cause an inadvertent plant trip?

12 MR. WALLEMAN: Yes.

13 MR. LANNING: Were you assigned specific
14 responsibilities for this shift?

15 MR. WALLEMAN: Yes, sir. Having worked
16 with Brian Young before, we have a -- kind of split
17 the control room into certain areas.

18 And he normally monitors feedwater flow
19 and that particular side of plant where I monitor
20 the primary system or the perimeters involved with
21 the reactor coolant systems such as pressure and
22 makeup flow.

23 MR. LANNING: Who decides who monitors
24 which panels?

1 MR. WALLEMAN: Well, that was something
2 that was just decided between the two of us.

3 MR. BEARD: Is it a general approach that
4 the two licensed reactor operators would -- one or
5 the other would be each at those duty stations and
6 shift supervisor didn't specifically designate which
7 one. They just left it up to you --

8 MR. WALLEMAN: Yes, that was --

9 MR. BEARD: -- as long as the two
10 stations were covered?

11 MR. WALLEMAN: Yes, we are essentially
12 responsible for the whole control room, but in a
13 transient type of situation normally he would go to
14 that area and I would go to the other area.

15 MR. BELL: Was there any equipment that
16 was out of service in your area of responsibility
17 when you came on shift, any of your normal equipment
18 that was removed from service?

19 MR. BEARD: Either control systems or
20 safety related systems?

21 MR. WALLEMAN: I don't remember anything
22 as having been out of service that would effect my
23 function of working in that area.

24 MR. BEARD: Were you in any type of action

1 statement with regard to the plant's tech
2 specifications?

3 MR. WALLEMAN: Yes, we were in several
4 action statements. One concerning fire barriers,
5 one concerning seismic instruments. We were in an
6 action statement concerning one of our nuclear
7 instruments. And in order to remember the rest, I
8 would have to look at the turnover.

9 MR. BEARD: Would you consider that the
10 number of action statements that you were in for the
11 plant's conditions was a typical number or more than
12 usual or less than usual?

13 MR. WALLEMAN: I would say it was probably
14 a typical number.

15 MR. BEARD: Could you describe the action
16 statement related to the nuclear instruments that
17 you referred to?

18 MR. WALLEMAN: Yes, one of our source
19 range instruments was not working properly in the
20 fact that it was giving a level of source range
21 counts were up with the power, and it should not be
22 doing that because the high voltages cutoff the
23 detector.

24 MR. BEARD: Are you aware of when the

1 situation developed on that instrument?

2 MR. WALLEMAN: The situation seemed to
3 develop about approximately the day after power
4 operation. It kind of just seemed the type to
5 appear.

6 MR. BEARD: So the instrument was operable
7 for the start-up and getting the power, and roughly
8 a day later it started misbehaving?

9 MR. WALLEMAN: Yes, as I remember it.

10 MR. BEARD: How long had you -- I am
11 trying to get a feel for the time frame because I
12 don't remember off the top of my head exactly when
13 you restarted, but how many days had it been since
14 the plant had done its last restart roughly? Two
15 days, a week, a month?

16 MR. WALLEMAN: Well, we had tripped about
17 a week before that, and then we had been down for a
18 couple of days. If I could ask.

19 MR. BEARD: Sure.

20 MR. SIMON: I think it was somewhere
21 around June 2 that we had tripped, and I don't
22 remember the exact time. I got it in my notes, but
23 we weren't down very long.

24 MR. BEARD: I am really trying to focus on

1 now long the nuclear instrument that we are talking
2 about was in this inoperable state, one day, one
3 week?

4 MR. SIMON: Nearly a week. It had been
5 declared inoperable shortly after start-up.

6 MR. WALLEMAN: As a matter of fact, I was
7 the one to notice during my reading that the counts
8 were up on it and had informed the shift supervisor.

9 MR. BEARD: Was this an unusual failure or
10 is this what one might call a repeat occurrence on
11 this your start-up or source range channel nuclear
12 instrumentation?

13 MR. WALLEMAN: This has happened before on
14 that particular channel. When it had been shutdown
15 to where they could test it with the voltage on the
16 detector, they could find no anomalies with it.
17 From what I understand all the troubleshooting they
18 haven't been able to find a problem.

19 MR. BEARD: Is it a situation that has
20 happened some number of times in the past and
21 troubleshooting efforts but really haven't been able
22 to nail down the cause of the misbehavior?

23 MR. WALLEMAN: Yes, as far as I can tell,
24 they haven't been able to determine what it is.

1 Although when we were shutdown, it doesn't seem to
2 appear on the shutdown.

3 MR. BEARD: Does that cover pretty much
4 the initial conditions when you came on shift? Did
5 anything unusual happen between those initial
6 conditions and the onset of the transient that are
7 worth mentioning?

8 MR. WALLEMAN: No, we had done our normal
9 surveillance testing doing the ST's that you have to
10 do on midnights, and everything was pretty much
11 state in the plant.

12 At the time that the event happened, I was
13 sitting in the control room at the control room desk,
14 and I was reviewing one of the procedures we are
15 currently studying for our requal exam.

16 And I was sitting there reviewing the
17 procedure, and Brian Young had exited to the kitchen,
18 which is just behind the control room, and was
19 fixing something to eat.

20 And the SRO was in the control room, and
21 he was walking around the panels looking at some of
22 indications.

23 MR. BEARD: Who was the SRO you are
24 referring to?

1 MR. WALLEMAN: Steve Feasel.

2 MR. BEARD: And he was serving the role of
3 what in your organization structure, what title
4 would he have besides senior reactor operator?

5 MR. WALLEMAN: He was assistant shift
6 supervisor. And essentially nothing was out of the
7 ordinary.

8 MR. BEARD: Things pretty quiet then?

9 MR. WALLEMAN: Yes, it was relatively
10 quiet.

11 MR. BEARD: What was the, as you remember
12 it, the first thing that called your attention to
13 something going astray or unusual or --

14 MR. WALLEMAN: The first thing that called
15 my attention to the fact that something was out of
16 the ordinary was Steve Feasel saying, and I am not
17 sure if this is his exact words, but that the feed
18 pump had tripped or it was malfunctioning. I am not
19 sure how he --

20 MR. BEARD: This is one of the two turbine
21 driven main feed pumps?

22 MR. WALLEMAN: Yes. And right after he
23 said that, I looked up and saw he was looking over
24 at that. Right at that time after about within two

1 seconds of him saying that, I started hearing the
2 plant flow noises changing out in the plant.

3 MR. BEARD: Had the reactor tripped at
4 this time?

5 MR. WALLEMAN: No, sir.

6 MR. BEARD: How would you describe the
7 behavior or the mode of control or what was going on
8 in the primary system that you were trying to keep
9 an eye on?

10 MR. WALLEMAN: Well, after I heard this
11 noise I immediately exited the chair, and as I
12 headed towards the panel, I called towards the
13 kitchen for Brian Young to come out because you can
14 hear from the kitchen from the control room, but
15 just as I called he came in.

16 He had heard the flow noises also and
17 Steve was at the -- Steve Feasel, the assistant
18 shift supervisor, was at the main feed pump turbine
19 controls.

20 And I went over to the primary system to
21 monitor what was going on there, and within a couple
22 of seconds Brian Young was over at the main feed
23 pump turbine controls, and Steve kind of just backed
24 away and started looking around the whole plant.

1 As Brian started to try to increase the
2 speed of the number two main feed -- I don't know
3 how far I should go on.

4 MR. BEARD: Go ahead. We would like to
5 hear your understanding of what happened. That's
6 what we are here for.

7 MR. WALLEMAN: As Brian started increasing
8 the speed of number two main feed pump, I was
9 watching the pressure in the primary system and
10 noticed that there was a slight mismatch with the
11 feed pump having cut -- with the one feed pump
12 having tripped and the other one not supplying the
13 amount of feedwater required for the conditions in
14 the primary system.

15 Pressure was going up there. There
16 in-surgings the pressure, pressurized level was going
17 on and primary system was going up.

18 I did notice that the plant was running
19 back, and that the control rods were driving it.

20 MR. BEARD: That's a normal expected
21 function for this kind of situation through the
22 integrated control system?

23 MR. WALLEMAN: Yes, the integrated control
24 system tries to drive the whole plant back at the

1 same time. It would try to drive the plant back to
2 55 percent power, which is the one main feed pump.
3 It would be able to control the amount of flow
4 required for the primary system.

5 MR. BEARD: Did that run back sort of kind
6 of seem to be going fairly smoothly, not only was it
7 trying to do it, it seemed to be doing it okay or
8 was it having problems?

9 MR. WALLEMAN: Yes, as a matter of fact,
10 it seemed to be going fairly well with the exception
11 of RCS pressure started to increase. I kind of
12 expected that because it is just pretty hard for a
13 plant to reduce in power the amount of flow that it
14 dropped off.

15 So as I saw pressure start to increase, I
16 took manual control of pressurizer spray and opened
17 the valve all the way.

18 MR. BELL: What made you do that? Is that
19 an action that is recommended in some emergency or
20 off normal operating procedure?

21 MR. WALLEMAN: No, the reason I did that,
22 it has an automatic function to open with a
23 transient, but I had expected this transient to go
24 beyond the normal design capability of the normal

1 pressurizer control system just knowing that the
2 feed pump had tripped.

3 So when the spray cycles, it cycles at a
4 lower value than what you can by taking manual
5 control induced in the pressurizer.

6 MR. BELL: Have you had this transient
7 occur before while you were the reactor up there?

8 MR. WALLEMAN: No, sir.

9 MR. BELL: Have you seen this transient at
10 the simulator or been involved with this transient
11 during your training?

12 MR. WALLEMAN: Yes, sir, I had seen
13 transient of this sort several times.

14 MR. BEARD: So would it be a fair
15 statement to say that you took manual control in
16 order to sort of get a jump on the spray system in
17 order to get the pressure back to where you would
18 like to see it?

19 MR. WALLEMAN: Yes, sir, I was trying to
20 reduce or keep the pressure below the high pressure
21 trip set point.

22 MR. BEARD: Why don't you just continue
23 then. You got the spray turned on.

24 MR. WALLEMAN: Yes, sir. It appeared that

1 it might be with the spray on all the way, and Brian
2 Young trying to control the main feed pump turbine
3 speed.

4 It appeared that we might be able to make
5 the run back without experiencing a trip, but the
6 pressure crept up a little beyond what I had
7 wanted it to and ended up by causing a high pressure
8 trip.

9 MR. BELL: But you had done all you could
10 to prevent that occurrence?

11 MR. WALLEMAN: Yes, sir.

12 MR. BEARD: So at the point the reactor
13 tripped, the only action that you had taken besides
14 monitoring the primary to make sure there were no
15 additional actions were the more or less
16 anticipatory move of helping get the pressure down a
17 little bit?

18 MR. WALLEMAN: Yes, sir.

19 MR. BELL: I would like Rick to describe
20 the actions he would perform should a reactor trip
21 occur now or I guess the actions he did --

22 MR. BEARD: In a hypothetical situation?

23 MR. BELL: No, sir, the actions he did
24 perform in a reactor trip. We have gotten to the

1 reactor trip stage. We will go into the post trip
2 actions.

3 MR. WALLEMAN: Okay. The post trip
4 actions, I looked at the control rods to make sure
5 that they were on the bottom. And in order to do
6 that, you look over the panel and there is on the
7 back panel where you have the indication for the
8 control rods there is absolute position indication
9 which gives good indication of where the rods
10 actually where. And that indicated that all the
11 rods were on the bottom.

12 I isolated let down from the reactor
13 coolant system. I started a second makeup pump. I
14 hit the reactor trip button, and I then at that
15 point I waited and start watching where pressure was
16 going.

17 Brian was on the main feed pump turbine at
18 the time, and Steve Feasel had brought out the EP
19 1202, which is our emergency procedure, and started
20 going through the actions for reactor trip.

21 MR. BEARD: These actions in your
22 emergency procedure are both actions that an
23 operator might take manually and verification or
24 confirmation of the actions that should occur

1 automatically? Is that a general --

2 MR. WALLEMAN: Yes, sir.

3 MR. BEARD: So I guess having the
4 procedure out, you would go through and confirm the
5 automatic actions and then take those manual actions
6 that were prescribed?

7 MR. WALLEMAN: Yes, sir.

8 MR. BEARD: Fine. Go right ahead.

9 MR. BELL: Excuse me, Rick, why did you
10 start the second makeup pump?

11 MR. WALLEMAN: I started the second makeup
12 pump because on a reactor trip you find that you end
13 up losing inventory in the pressurizer, and I wanted
14 the second makeup pump available and running to
15 increase the amount of inventory supplied. And that
16 is also an action through EP 1202.

17 MR. BELL: Your pressurizer level at this
18 time was probably higher than normal pressurizer
19 level; was it not?

20 MR. WALLEMAN: Yes, sir.

21 MR. BELL: And you felt you still needed
22 this additional makeup pump because the pressurizer
23 level there it would require additional makeup?

24 MR. WALLEMAN: Yes, sir.

1 MR. BELL: My second question is when did
2 you close the spray valve?

3 MR. WALLEMAN: I will have to think about
4 this for a minute.

5 MR. BEARD: Maybe it would help you to, in
6 the thinking process, to say did you close it right
7 away, after a couple of minutes or a long time later?

8 MR. WALLEMAN: I believe that I went to
9 automatic on it as soon as I saw the pressure start
10 to come down in the reactor coolant system.

11 MR. BEARD: What sort of pressure value
12 are we talking about that it rose to, do you
13 remember a value?

14 MR. WALLEMAN: Approximately 2300 pounds.

15 MR. BEARD: How does that correspond to
16 the pressure you had been at at 90 percent or the
17 pressure that, say, your first system relief would
18 come in?

19 MR. WALLEMAN: The normal system pressure
20 is 2150 pounds and the relief set point for our
21 first relief, which is the PORV, is at approximately
22 2400 pounds. I believe it is set at 24, 25.

23 MR. BEARD: And the plant had gotten up to
24 2300?

1 MR. WALLEMAN: Yes, sir.

2 MR. BEARD: And then it turned around
3 somewhere in that area?

4 MR. WALLEMAN: Yes, sir, it started coming
5 down.

6 MR. BEARD: On the isolation of the let
7 down, was the reason for that similar to the reason
8 for starting the second makeup?

9 MR. WALLEMAN: No, sir, that let down is
10 the makeup pump starting is part of a supplementary
11 action for a reactor trip. The isolating the let
12 down is part for immediate action for reactor trip.

13 MR. BEARD: Why isolated let down?

14 MR. WALLEMAN: Just to reduce the amount
15 of inventory on the reactor coolant system.

16 MR. BEARD: In that sense it is comparable
17 to cutting in the second makeup?

18 MR. WALLEMAN: Yes, sir.

19 MR. BEARD: So I guess before we
20 interrupted you with those questions, you were at
21 the point where the assistant super was opening up
22 the emergency procedures.

23 MR. WALLEMAN: Yes, sir. He had gone
24 through the immediate actions to make sure that you

1 are supposed to reverify the immediate actions as
2 part of the trip, and then he went into the
3 supplementary actions.

4 And he was asking several questions
5 concerning enunciators and indications that we have
6 as part of the supplementary actions to make --

7 MR. BEARD: Are these question
8 confirmatory questions like --

9 MR. WALLEMAN: Yes, sir.

10 MR. BEARD: Did you receive that or did
11 that do that, those kinds of questions?

12 MR. WALLEMAN: Yes, sir.

13 MR. BEARD: Go ahead.

14 MR. WALLEMAN: The conditions in the RCS
15 appeared to be approximately normal for post trip
16 action. It seemed like everything was going pretty
17 well until it got to the point where Brian Young
18 said, I am losing control of the --

19 MR. BEARD: Let me interrupt you a minute,
20 Rick. I don't like to interrupt you. I think we
21 should say for the record that Dr. Rossi has arrived
22 now and turn the leadership of the meeting over to
23 him.

24 MR. ROSSI: I would like to go off the

1 record.

2 (Discussion held off the record.)

3 MR. BEARD: Back on the record.

4 MR. ROSSI: We are going to take a recess
5 for 15 minutes.

6 (Thereupon, a recess was taken.)

7 MR. BEARD: We would like now to resume
8 our interview with Mr. Walleman. For the record, it
9 should be stated that Dr. Rossi is absent from this
10 session, and the other people attending the
11 interview are the same as previously were here
12 before we took a recess.

13 Rick, maybe you can sort of catch us up
14 where you think we left off, and we can try to
15 resume a normal type interview without any more
16 interruptions than we can.

17 MR. BURNS: She can read it back.

18 (Record read as requested.)

19 MR. WALLEMAN: As I said before,
20 everything seemed to be going pretty well post trip.
21 Then at that point Brian Young stated that he was
22 losing control of the main feed pump turbine. And I
23 looked over at him. And he was still using the
24 controls.

1 And at that point I believe it was the
2 shift supervisor who had come in during this event
3 looked up and said that the MSIV's were closed. And
4 so then we all noticed that and then the -- I went
5 back to looking to see what was going to happen to
6 RCS pressure.

7 And at this point we still had level left
8 in the steam generator. Okay. We looked up for
9 signs of a safety steam feed rupture control system
10 actuation, and we didn't have the signs of a normal
11 steam feed rupture control system actuation. So we
12 didn't understand why the MSIV's had gone closed.

13 At that point we were losing level in the
14 steam generators, and the shift supervisor decided
15 that we should probably trip the steam feed rupture
16 control system on low level.

17 So he informed Brian Young to go over and
18 trip it before we got to the point where it would
19 trip automatically, which if you feel that a system
20 is going to trip automatically that is an action
21 that you are supposed to do.

22 MR. BEARD: Could I explore that area with
23 you a minute, Rick.

24 Every utility trains their operators in a

1 way they think best, and sometimes the normal thing
2 is that there is a little variation here and there,
3 and every company has their own policy with regard
4 to safety and plant operations and other matters.

5 I have heard it mentioned several times
6 that it is a good idea to go ahead and trip it
7 manually if you know the automatic is going to get
8 you.

9 Could you tell me a little bit about
10 whether this comes out as a part of your training or
11 some policy or just general guidance or maybe comes
12 back from your Navy days or where does this type of
13 thinking originate in your view?

14 MR. WALLEMAN: In my view, well, this is
15 not from my Navy training. This is something that
16 has been brought out in training with us that you
17 should, if you are going to get the actuation, go
18 ahead and actuate it.

19 And I believe that that's just like a kind
20 of a preventative medicine. If you know you are
21 going to get the trip, why not trip it earlier so
22 you have the actions of the safety system before it
23 is going to take place.

24 MR. BEARD: Would there be any advantage

1 in terms of the way the reactor systems would
2 respond to do that or is it just almost like a
3 philosophical thing of go ahead and get a jump on it?

4 MR. WALLEMAN: Well, it wouldn't be
5 philosophical. It is go ahead and get a jump on it
6 because once you have -- we had lost all feed pumps,
7 and we didn't consider that we would be able to get
8 that back so you want to feed the generators. You
9 don't want the generators boiling dry. And so that
10 is a next line of defense.

11 MR. BEARD: I guess the big thing I am
12 hearing you say is the training you received from
13 the company at Toledo Edison is that where you
14 receive the advice that if it is inevitable it is
15 going to you ought to go ahead?

16 MR. WALLEMAN: Yes.

17 MR. LANNING: Why would actuating the
18 rupture control system prevent the steam generators
19 from boiling dry?

20 MR. WALLEMAN: Well, an actuation would
21 automatically start the aux feed pumps and target
22 them for a level in the steam generator. Since we
23 didn't have the normal feed steam generator, this is
24 a desired situation.

1 MR. BEARD: Do you think it would have
2 prevented, the aux feed pumps coming on so fast, it
3 would have prevented a boil out or boil dry?

4 MR. WALLEMAN: Yes, sir. Not that I think
5 we boiled dry.

6 MR. BEARD: No, that's generally what you
7 are saying if you can get the aux feed pumps running,
8 the desire would be to avoid actually boiling it dry.

9 MR. WALLEMAN: Yes, sir.

10 MR. LANNING: Did the generators boil dry?

11 MR. WALLEMAN: No, sir, I don't believe
12 they did. Again, I was not on that side of the
13 plant. I cannot make a judgment. You would have to
14 talk to Brian Young.

15 As I noted it from the indications we had,
16 it didn't indicate that it was boiled dry.

17 MR. LANNING: This is based on
18 conversations with the other reactor operator?

19 MR. WALLEMAN: Yes, sir.

20 MR. BELL: Is it not a fact that this
21 actuating this steam and feedwater rupture control
22 system manually would have maintained a higher level
23 in the steam generators because we were probably
24 greater than its actuation set point if it were to

1 be actuated manually, is that a correct assumption
2 on my part?

3 MR. WALLEMAN: No, sir. I believe it was
4 below the level of where it would have gone for
5 actuation, but I am not sure.

6 MR. BEARD: Should we continue then.

7 MR. WALLEMAN: Yes, sir. At this point
8 Brian had gone around to the panel where you can
9 actuate the SFRCS from the control room.

10 And before he actuated, he looked up at
11 the shift supervisor and said, Do you want to
12 actuate then on low level, and as near as I can
13 remember this was his words.

14 And the shift supervisor said yes, actuate
15 SFRCS on low level. And then he actuated it. He
16 came back around to the front of the panel and
17 started looking at the aux feed pump turbines now
18 and then.

19 At that point he said, I have lost control
20 of the aux feed pumps. I looked up and saw that we
21 had the aux feed pump turbine over tripped --
22 overspeed trip enunciator alarms.

23 MR. BEARD: This is one pump or both?

24 MR. WALLEMAN: Both pumps. And then I

1 turned around, and he was still watching his aux
2 feed pump turbine indications. And I turned around
3 and noticed that we had two equipment operators
4 standing in the control room watching the event.

5 So while he was still looking at his
6 indications, I told them to expedite going to the
7 aux feed pump room. I am not sure if those were the
8 words, but I told them to hurry up and go to the aux
9 feed pump room and determine what was wrong. And so
10 they immediately left. *

11 Then I turned back around and started
12 monitoring my indications again. At this time, the
13 assistant and the shift supervisor were both in the
14 control room along with Brian Young and myself.

15 MR. BEARD: What were the conditions on
16 the primary side of the plant at the point in the
17 scenario you are in, the point now where the plant
18 has lost both aux feed pumps and you have returned
19 more careful attention to your duty stations rather
20 than the control room in general.

21 Can you give us a feel for what were the
22 conditions that you saw at that time on the primary
23 side of the system?

24 MR. WALLEMAN: Okay. After the aux feed

1 pump turbines did not respond and I had sent the
2 people down to the aux feed pump room, I started
3 watching pressure in the RCS and noticed that it was
4 starting to increase.

5 MR. BEARD: Did you notice where it was at
6 that time besides starting to increase?

7 MR. WALLEMAN: No, sir, I couldn't say
8 exactly. It was the RCS was heating up and as
9 pressure started increasing, I went ahead and opened
10 the spray valve full, all the way again.

11 MR. BEARD: This is the second actuation
12 of the spray valve?

13 MR. WALLEMAN: Yes, sir.

14 MR. BELL: And it is in manual?

15 MR. WALLEMAN: Yes, sir.

16 And spray valve was opened all the way.
17 Sometime during the event, I am not sure if it was
18 just -- I would have to refer to my -- I would have
19 to refer to some graphs to be sure, but I know that
20 I had stopped and started the makeup pump.

21 I am not sure if it was at this point or
22 not, but I -- if it wasn't started, I indeed made
23 sure that the second makeup -- wait a minute. Let
24 me think.

1 MR. BEARD: We will go off the record for
2 a moment and let Mr. Wallemann gather his thoughts
3 again.

4 (Off the record.)

5 MR. WALLEMAN: No, I did not start the
6 makeup pump at this time. Pressure was going up,
7 and I was trying to minimize the pressure increase
8 by having the spray valve opened. RCS temperature
9 was going up.

10 Brian Young, the other reactor operator,
11 said that he noticed it was getting close to 590
12 degrees in the RCS.

13 MR. BELL: Why is this temperature in the
14 reactor coolant system increased?

15 MR. WALLEMAN: Because whenever you
16 tripped the plant you have a -- from decayed heat
17 it would tend to heat up the reactor coolant with no
18 heat sink.

19 MR. BEARD: The normal heat sink that you
20 don't have is what?

21 MR. WALLEMAN: The steam generators.

22 MR. BEARD: Which are going low?

23 MR. WALLEMAN: Which are going low.

24 MR. LANNING: Now, is the indicator for

1 the primary system temperature on the panel that the
2 other reactor operator is monitoring and it is not
3 on your panel?

4 MR. WALLEMAN: I have indication of
5 temperature of Th on the panel I was at, but I was
6 not -- I was more involved with watching what the
7 pressure exertion was doing than what RCS
8 temperature was at the time.

9 MR. BEARD: When you use the term "RCS
10 temperature," are you talking about T hots, T colds,
11 T aves or what are you generally referring to?

12 MR. WALLEMAN: T ave.

13 MR. BEARD: And where is that meter
14 located?

15 MR. WALLEMAN: We have a meter on the back
16 panel. It is a large meter with a T ave.

17 MR. BEARD: In the control room if I
18 remember right, it seems like your duty station is
19 where on the main control desk area?

20 MR. WALLEMAN: On the left-hand side.

21 MR. BEARD: And the T ave meter is
22 generally on the back panel where?

23 MR. WALLEMAN: In the middle.

24 MR. LANNING: When you say the back panel,

1 you can view this panel from the control desk?

2 MR. WALLEMAN: Yes, sir. Not the whole
3 panel. There are certain indications that are down
4 low that you can't see.

5 MR. LANNING: You do not have to
6 physically leave the control panel to see the
7 average temperature indicator?

8 MR. WALLEMAN: No, sir.

9 MR. BEARD: So T ave was going up, and I
10 think you said somebody either you or someone else
11 noticed that you were approaching 590?

12 MR. WALLEMAN: Yes, sir.

13 MR. BEARD: Can you give me some feel for
14 the significance of that in terms of what would, on
15 a normal trip situation, the temperature be and what
16 sort of a significance would you associate with
17 being at 590?

18 MR. WALLEMAN: This type of incident when
19 post trip -- your normal post trip temperature is
20 550 degrees.

21 MR. BEARD: So you are coming on 40
22 degrees higher than usual?

23 MR. WALLEMAN: Yes, sir.

24 MR. BEARD: What sort of significance do

1 you attach to being 40 degrees higher than usual, is
2 that a little bit, medium, a whole lot?

3 MR. WALLEMAN: That's a lot because for
4 every degree of temperature change in the RCS, you
5 have approximately five inch change in the reactor
6 level. This type of occurrence would cause a rapid
7 pressure increase.

8 MR. BEARD: I think I would like to record
9 to show that Dr. Rossi has joined us again.

10 MR. ROSSI: Yes, I am here and hope to
11 take part in the remaining part of the interview.

12 Why don't you just continue with what you
13 were doing.

14 MR. BELL: Rick, were you successful in
15 reducing reactor coolant system pressure by taking
16 manual control of the spray valve?

17 MR. WALLEMAN: At this point, pressure was
18 still going up, and I am not sure at which rate it
19 was going up, but it was still increasing.

20 MR. BELL: Did you look at the pressurizer
21 level indication at this time?

22 MR. WALLEMAN: Yes, sir, it was high. It
23 was getting up towards 280 inches in the pressurizer.

24 MR. BELL: Pressurizer was 280 inches.

1 What is normal?

2 MR. WALLEMAN: 200 inches.

3 MR. BEARD: What would be -- I am trying
4 to understand the instrumentation and your
5 pressurizer design. What would be the highest
6 reading you could read on your instruments in the
7 control room for pressurizer level?

8 MR. WALLEMAN: About 320.

9 MR. BEARD: If it were to read 320, does
10 that mean the plant is solid or where does that --
11 what does that correspond to?

12 MR. WALLEMAN: That's where the instrument
13 tap comes out at 320 to -- for what the actual top
14 of the pressurizer is, I am not sure. I would ask
15 Louie.

16 MR. BEARD: This is a technical question.
17 I think it is fine that Louie can give us some
18 answer.

19 MR. SIMON: I don't know the exact value.
20 There is some steam space. I would guess at least a
21 couple feet and maybe several feet.

22 MR. BELL: The high level tap then is
23 below the upper hemisphere of the head?

24 MR. SIMON: Yes.

1 MR. ROSSI: During the transient did the
2 level ever reach -- do you remember what the highest
3 level was that you got to in the pressurizer?

4 MR. WALLEMAN: Yes, sir, I think the
5 highest level I ever got to was 300.

6 MR. ROSSI: So you did not go up to the --

7 MR. WALLEMAN: High level tack, no, sir.

8 MR. BELL: Spray valve is opening and it
9 is not reducing pressure?

10 MR. WALLEMAN: No, sir, pressure was still
11 going up.

12 MR. BELL: What happened next?

13 MR. WALLEMAN: At this point, and I am not
14 sure at what temperature it was, but Steve Feasel,
15 the assistant shift supervisor, decided he was going
16 to leave the control room and go down and get the
17 start-up feed pump running.

18 MR. BELL: I was more interested in
19 reactor coolant system pressure. What happens next
20 if the spray valve is fully open and pressure is not
21 being reduced, what should happen next?

22 MR. WALLEMAN: Once it gets to the -- to
23 that approximately 2400 pounds, 24, 25, the PORV
24 opens.

1 MR. BELL: Did the PORV open?

2 MR. WALLEMAN: Yes, sir, it did.

3 MR. BELL: How did you know that the PORV
4 was open?

5 MR. WALLEMAN: Okay, sir, about this time,
6 we were having trouble with the -- one of the SP7A
7 and 7B reset in the back so that Brian Young could
8 control them from the front. They are the start-up
9 feeds for the steam generators.

10 They had to be reset, and we didn't have
11 anybody available so I -- he asked me to go reset
12 the steam valves. I reset those, came back into the
13 control room and started monitoring pressurizer
14 pressure again.

15 It looked like it had settled off close to
16 2400 pounds. And I did not -- I had found out later
17 that the PORV had lifted twice, but I did not know
18 this fact at that time.

19 MR. BELL: All right. SP7A and 7B are the
20 supplies to the OTSG's from the normal feedwater
21 system?

22 MR. WALLEMAN: Yes, sir.

23 MR. BELL: And the reset for those are
24 located on this back panel?

1 MR. WALLEMAN: No, they are located behind
2 the control room where the cabinets are.

3 MR. BELL: What cabinets, sir?

4 MR. WALLEMAN: I am sorry, we have power
5 supplies and cabinets that indicate the conditions
6 of reactor protection system, safety features
7 actuation system, SFRCS system action.

8 They are all in the back, and the resets
9 are on the back wall in the back which is out of the
10 control room proper.

11 MR. BELL: I have not been in your control
12 room at this time so let me try to get some
13 understanding of location of controls. To override
14 this SP7A and 7, you have to go back to the SFRCS
15 panel?

16 MR. WALLEMAN: Yes, sir.

17 MR. BELL: Also to get feed in that steam
18 generator with this start-up feedwater pump, you are
19 going to have to open the main steam -- excuse me,
20 main feed isolation valves?

21 MR. WALLEMAN: No, sir, only start-up
22 isolation.

23 MR. BELL: And the main feed isolation
24 valves the main valves to the generators?

1 MR. WALLEMAN: I am not sure what he means
2 by that.

3 MR. SIMON: Main feedwater stop valves.

4 MR. WALLEMAN: Yes, sir.

5 MR. BELL: Did you reset and open those
6 valves?

7 MR. WALLEMAN: No, sir, I did not. They
8 don't have the resets in the back like the SP7A and
9 7B do.

10 MR. BELL: They are at yet another
11 location?

12 MR. WALLEMAN: Yes, sir.

13 MR. BELL: Do you know if those valves
14 were reset and opened?

15 MR. WALLEMAN: No, sir. I had just done
16 what the other reactor operator asked me to do.

17 MR. BEARD: I would like to sort of review
18 what you said before Larry asked you a couple of
19 questions.

20 I believe what you said was they were
21 having trouble with these two valves, and the other
22 operator apparently was pretty busy, and there
23 weren't other people in the room. So in effect he
24 asked you to go back and do the reset to assist him?

1 MR. WALLEMAN: Yes, sir.

2 MR. BEARD: So you testified the main
3 control board, if I can call it that, went outside
4 behind the, what I call, the back panel, the
5 vertical portion and really away from the control
6 room area proper into the back area where all these
7 racks are?

8 MR. WALLEMAN: Yes, sir.

9 MR. BEARD: And did this function and then
10 when you returned I guess you were gone some period
11 of time?

12 MR. WALLEMAN: About probably maybe about
13 20 seconds, 30 seconds.

14 MR. BEARD: But when you returned --

15 MR. WALLEMAN: I don't know exactly how
16 long it was.

17 MR. BEARD: When you returned to your,
18 quote, normal duty station on the reactor site, the
19 pressure seemed to have settled around 2400 pounds?

20 MR. WALLEMAN: Yes, sir.

21 MR. BEARD: You were not aware that the
22 PORV had actuated twice, and you learned about that
23 later?

24 MR. WALLEMAN: Yes, sir.

1 MR. BEARD: That helps me summarize where
2 we are and maybe we can continue from there.

3 MR. BELL: Were there any other valves
4 that didn't operate correctly that had to be reset?

5 MR. WALLEMAN: Yes, sir. We had to reset
6 599 and 608 to open them up. That was for aux feeds.

7 MR. BEARD: Did you do that?

8 MR. WALLEMAN: It had been done already,
9 and I had been asked to go back and do that. That
10 is inside the control room proper. That is on the
11 back panel in those safety features actuation area.

12 MR. BEARD: That's on the vertical panel
13 in the control room?

14 MR. WALLEMAN: Yes, sir.

15 MR. ROSSI: When you say in the control
16 room proper, the resetting of SP7A and SP7B, is that
17 really outside the control room or just outside of
18 the control board area?

19 MR. WALLEMAN: It is outside of the
20 control board area. The control room or actually
21 the ones that is bounded by the doors in order to go
22 out of doors is the whole area, but what I call the
23 control room proper is where our main instruments
24 are and where we normally stay.

1 MR. ROSSI: So you didn't have to go
2 outside the doors; you had to go out of the control
3 room proper?

4 MR. WALLEMAN: Yes, sir.

5 MR. BEARD: Having seen the control room
6 here before, it is laid out similar to other plants
7 where there is not a wall to divide off the control
8 room from other equipment racks.

9 If you just sort of walk around behind the
10 vertical board, then you come into an area that is
11 not considered, I believe, the control room, but
12 there is -- it is still physically within the walls,
13 but there are a lot of equipment racks and things of
14 this nature just as the integrated control system,
15 the racks are back there?

16 MR. WALLEMAN: Yes, I can draw a picture
17 if you like.

18 MR. ROSSI: We intend to see it later. I
19 just wanted to get a picture of it. Thank you.

20 MR. BEARD: Again, bring us back to where
21 we were. You had returned, and the pressure was
22 around 2400 pounds, and apparently I think you said
23 it was pretty steady.

24 MR. WALLEMAN: Yes, it seemed -- I knew

1 it was around the PORV set point. So then I started
2 monitoring that and, indeed, the PORV did open. I
3 saw pressure start to come down and then the
4 indication in front of me indicated that the PORV
5 was closed.

6 MR. BEARD: I would like to ask you about
7 that. You said you saw the PORV open, and you saw
8 the pressure come down.

9 What indication did you use that would
10 tell you other than reactor coolant system pressure
11 that the PORV had opened?

12 MR. WALLEMAN: Well, the opening you have
13 two indications on the front. One just has control
14 available to the PORV solenoid and the other has --
15 and the other indication is what the signal going to
16 those solenoids are.

17 And that is what I based -- we have other
18 indications for the PORV, but I did not even check
19 them at this time.

20 MR. BEARD: So that the indications on
21 your panel, if I remember right, you have got one,
22 like you said, says control power is available to
23 the control system which would operate the PORV?

24 MR. WALLEMAN: Yes.

1 MR. BEARD: Another that says the control
2 system is telling the PORV to open?

3 MR. WALLEMAN: Yes, sir.

4 MR. BEARD: That was your indication that
5 PORV had lifted?

6 MR. WALLEMAN: Yes, sir.

7 MR. ROSSI: And that it was closed also?

8 MR. WALLEMAN: Yes, and pressure started
9 to come down.

10 MR. BEARD: How long a time was it between
11 when you got the signal to open the PORV and
12 subsequently you got the signal to tell the PORV to
13 close, is that one second?

14 MR. WALLEMAN: About three seconds.

15 MR. BEARD: I just want to pursue this one
16 more thing, you got the indication in the PORV
17 closed, what does this tell you about the position
18 of the PORV?

19 MR. WALLEMAN: It tells you what the
20 control signal is going to the PORV. It tells you
21 that it should, in fact, be closed.

22 MR. BEARD: And you didn't use any other
23 instrumentation at this time?

24 MR. WALLEMAN: No, sir.

1 MR. BEARD: What was your feeling as to
2 where the PORV was positioned?

3 MR. WALLEMAN: I had indeed thought it was
4 closed.

5 MR. BEARD: Okay.

6 MR. ROSSI: Was this basically the third,
7 now that you know after the event, was this
8 basically the third time that it lifted?

9 MR. WALLEMAN: Yes, sir.

10 MR. ROSSI: So this was the last time it
11 lifted during the event.

12 MR. WALLEMAN: Yes, sir.

13 MR. ROSSI: Let the record show that I am
14 leaving for a minute.

15 MR. LANNING: What was the reactor system
16 pressure doing after you verified, I assume, that
17 the PORV was closed?

18 MR. WALLEMAN: The reactor system was --
19 the pressure was coming down.

20 MR. LANNING: Why would it be coming down?

21 MR. WALLEMAN: Well, again, I didn't think
22 the PORV was open. I had seen a large increase in
23 pressurizer level and then that seemed to taper off
24 to the point where it was relatively steady.

1 When you in-surge like that you end up
2 in-surfing water that is a lot colder than the water
3 that is in the pressurizer.

4 I had the spray valve open all the time.
5 As pressure, it seemed to me that pressure had been
6 steady around 2400, and when that opened and turned
7 it around, what I thought after the PORV closed and
8 with the amount of water I had in-surfed into the
9 pressurizer from its normal operating level, I did
10 look at the pressurizer temperature and it was well
11 below what the normal temperature would be in the
12 pressurizer.

13 And the fact that I left the spray valve
14 wide open, I thought that I had turned pressure and
15 that the spray valve was bringing pressure back down.

16 MR. LANNING: What pressure are you
17 monitoring?

18 MR. WALLEMAN: Wide range pressure. I
19 mean narrow range pressure.

20 MR. LANNING: And this is -- where is
21 this instrumentation located?

22 MR. WALLEMAN: It is right to the right of
23 the controls for the PORV and the pressurizer.

24 MR. LANNING: But where in the prime

1 cooling system is this instrumentation?

2 MR. WALLEMAN: I believe it is in the --
3 the one I was watching was narrow range for -- it
4 was I think it was the narrow range for the reactor
5 coolant loop. I am not sure which loop it was.

6 MR. ROSSI: It comes off the loop in any
7 event, not off the pressurizer.

8 MR. WALLEMAN: Yes, sir.

9 MR. BEARD: Do you have other indicators
10 for -- the pressure is coming down.

11 MR. WALLEMAN: Yes, sir.

12 MR. BEARD: I think what you said in
13 answer to Mr. Lanning's question was the reason the
14 pressurizer was coming down at least in your
15 understanding was because of the spray and the cold
16 water and temperature and you turned it around?

17 MR. WALLEMAN: Yes, sir.

18 MR. BEARD: Did it seem to be coming down
19 in a way that you would expect for that situation or
20 was it a little slow or a little fast or how would
21 you characterize it?

22 MR. WALLEMAN: Well, it seemed to be
23 coming down a little fast, but not excessively so at
24 least for the conditions I was in. I kind of looked

1 at monitor pressurized level.

2 We had just -- even though I did not
3 think at all that the PORV was open, we had had
4 training in that at the simulator where when the
5 PORV did stick open like that we had oscillation and
6 pressurizer level, and the level seemed relatively
7 steady.

8 So that was one indication that I used
9 just to back up the fact that I, indeed, didn't have
10 the PORV open. I was also paying attention to the
11 fact that it looked like we were getting this
12 feedwater back, and I am not sure at what point we
13 got the feedwater back, but I thought that might
14 have had a bearing also on the fact of the pressure
15 decreasing.

16 MR. BEARD: So you are saying if the
17 feedwater returned, you would expect that to be
18 return of the steam generators become a heat sink
19 and that would bring the pressure down?

20 MR. WALLEMAN: Yes, sir, intense cooling
21 of the RCS. At this point with pressure coming down
22 and it did seem it might be a little excessive, when
23 it got down to the point where the spray valve
24 should be operating, first of all, since it was a

1 little bit excessive or what I thought might be
2 possibly excessive although in those conditions I
3 was not sure, I went ahead and shut the PORV block.

4 MR. BEARD: And this was at the point the
5 pressure had gotten, I think you said, the spray
6 would have normally come on. I don't understand.

7 MR. WALLEMAN: It was about the point
8 where the spray valve would normally close. It was
9 about 21 --

10 MR. BEARD: Normally close?

11 MR. WALLEMAN: Yes, about 2150.

12 MR. LANNING: Had it closed?

13 MR. WALLEMAN: No, sir, I had the spray
14 valve completely open. After I closed the PORV shut,
15 the PORV block, as I shut the PORV block, I also
16 went to auto on the spray valve.

17 MR. LANNING: Are you saying that the
18 reason that you chose to close the PORV block valve
19 was based on the position of the spray valve?

20 MR. WALLEMAN: No, sir, I just -- it was
21 like a back up just in case the PORV had stayed open,
22 which I did not think at all had happened, but it
23 was a back up because I just didn't like how fast
24 the pressure was going down.

1 MR. LANNING: So it was based on the rate
2 of decrease of pressure?

3 MR. WALLEMAN: Yes, sir.

4 MR. BEARD: So you took basically two
5 actions, you closed the block valve on the PORV?

6 MR. WALLEMAN: Yes, sir.

7 MR. BEARD: And you went to auto on the
8 spray valve, but I think it is important to
9 recognize, as Mr. Bell brought up yesterday or the
10 day before or sometime in this business, in manual
11 you had the spray valve open to a hundred percent
12 open and when you went to automatic, the maximum
13 opening would be about 40 percent.

14 And as you indicated that for the pressure
15 you were at when you put it in automatic this would
16 be about the pressure it would tend to close itself?

17 MR. WALLEMAN: Yes, sir.

18 MR. BEARD: By going to automatic had the
19 effect that you realize of closing the spray valve
20 for you?

21 MR. WALLEMAN: Yes, sir.

22 MR. BEARD: Fine.

23 MR. BELL: Do you have acoustical valve
24 monitors installed at Davis-Besse?

1 MR. WALLEMAN: Yes.

2 MR. BELL: Were those monitors used to
3 determine the status of the power operator relief
4 valve?

5 MR. WALLEMAN: No, sir.

6 MR. BEARD: Where are those?

7 MR. WALLEMAN: They are post accident
8 monitoring panel, which is to the left of the panel
9 where I was at.

10 MR. BEARD: How far to the left?

11 MR. WALLEMAN: About seven feet.

12 MR. BELL: Can you see those panels
13 clearly from your watch station?

14 MR. WALLEMAN: Yes, sir. The controls on
15 them are the indication for the type of flow is
16 relatively small.

17 In fact, I had looked at the indications
18 earlier in the event, but I didn't -- the main thing
19 that I was watching on the post accident panel was
20 the subcooling margin.

21 MR. BEARD: What type of subcooling values
22 were you reading at this time?

23 MR. WALLEMAN: At this time, I am not sure
24 what they were. I had monitored several times

1 during the transient that we had, and every time I
2 monitored it we had adequate subcooling margin. In
3 fact, the whole event, as I saw, it was 47 degrees.

4 MR. BEARD: What sort of range does that
5 meter have on it in terms of, I guess it is marked
6 in saturation degrees?

7 MR. WALLEMAN: Above saturation.

8 MR. BEARD: What sort of scale is that?

9 MR. WALLEMAN: It is a digital read out.

10 MR. BEARD: So it can go as high or low as
11 you --

12 MR. WALLEMAN: Yes.

13 MR. ROSSI: That subcooling is located on
14 the post accident panel?

15 MR. WALLEMAN: Yes, sir. There are two
16 indications.

17 MR. BEARD: If you were in this situation
18 that you described of having closed the spray valve
19 by way of putting it in on the auto and having
20 closed the PORV --

21 MR. WALLEMAN: Block.

22 MR. BEARD: Excuse me, PORV block, if you
23 had been -- if you had chosen to look over at the
24 acoustic monitors, what sort of reading would you

1 expect to find there?

2 MR. WALLEMAN: Well, if the PORV had stuck
3 open, which is theorized or at least I have the
4 impression that that is theorized might have
5 happened, if that stuck open, there would have been
6 some flow on the acoustic monitoring system.

7 MR. BEARD: In other words, you are saying
8 that if the PORV had, in fact, not closed, if at
9 this time you looked at the acoustic monitor, you
10 would expect to see a flow type indication which
11 tells you the valve is open?

12 MR. WALLEMAN: Yes, sir.

13 MR. BEARD: What about the effect of the
14 block valve?

15 MR. WALLEMAN: If it was after I closed it,
16 then there would be no flow.

17 MR. BEARD: That's the time frame I was
18 talking about. After you closed the spray valve and
19 the block valve.

20 MR. WALLEMAN: Yes, sir, there would have
21 been no indication of flow.

22 MR. BEARD: Would the acoustic monitor
23 give you -- what information would the acoustic
24 monitor give you with regard to the status of PORV

1 itself?

2 MR. WALLEMAN: It would give you an
3 indication that if I had, indeed, looked at it
4 during the time where the PORV was open, it would
5 give indication of flow.

6 And even when the -- when I had the
7 indication on my panel that the control set for the
8 PORV to close and if it was still open, you would
9 have still read flow there.

10 MR. BEARD: I am sorry, I got confused. I
11 don't want to belabor this point, but I don't
12 understand your answer. Could you just repeat it.

13 MR. WALLEMAN: Okay. On the panel that I
14 was at, that I was monitoring, it showed that the
15 PORV control said for the PORV to be closed. With
16 that control saying that should be closed if, indeed,
17 it was open, you would still have flow on the post
18 accident panel.

19 MR. BEARD: This was before you closed the
20 block valve?

21 MR. WALLEMAN: Right.

22 MR. BEARD: After you closed the block
23 valve?

24 MR. WALLEMAN: Yes, there would be no

1 indication of flow.

2 MR. BEARD: I guess I understand you to be
3 saying that if the PORV were, in fact, still opened
4 at this point in time, the acoustic monitor would
5 not be of great benefit in telling you that?

6 MR. WALLEMAN: No, sir.

7 MR. ROSSI: In any event, you didn't use
8 the acoustic monitor either before you closed the
9 block valve or after you closed the block valve, you
10 didn't note the position of the acoustic monitor?

11 MR. WALLEMAN: No, sir, I didn't. I did
12 not think it had opened, and I was also worried
13 about feedwater even though Brian Young was in that
14 area. I closed that purely as a back up just in
15 case it had opened.

16 MR. BELL: May I pursue this issue of the
17 acoustical valve monitors one step further.

18 This indication that you mentioned to show
19 flow, is it a digital indication or an analogue
20 meter?

21 MR. WALLEMAN: Analogue meter.

22 MR. BELL: How big is this meter?

23 MR. WALLEMAN: About two inches.

24 MR. BELL: Two inches high and a half inch,

1 quarter inch wide?

2 MR. WALLEMAN: Yes, sir.

3 MR. BELL: Can you see that meter from
4 seven feet away, could you even see the needle on
5 that meter from seven feet away?

6 MR. WALLEMAN: No, sir, I would have had
7 to go over there.

8 MR. BELL: You would have to leave your
9 normal control station and go to this post accident
10 monitoring package to see if the PORV had been
11 opened?

12 MR. WALLEMAN: There is indication of the
13 PORV position on that tube that comes off that limit --
14 off the flow, am I correct, so that I could tell,
15 there is a little indicator that tells whether the
16 PORV is open or not.

17 MR. BEARD: Are you talking about like a
18 light such as a limit switch?

19 MR. WALLEMAN: Yes, a small limit --

20 MR. BEARD: That would come on if it was
21 full closed or full open?

22 MR. WALLEMAN: It comes off flow of the
23 acoustic monitor.

24 MR. BEARD: I am trying to understand if

1 the operation of this light is analogous to a motor
2 operated valve where it is really in effect telling
3 you that the valve is in one of the two extremes,
4 full open or full closed, by determining some
5 measure of the flow?

6 MR. WALLEMAN: Yes. It would go by the
7 flow through the acoustic device, and once you get
8 25 percent flow, I believe on that gauge then that
9 light would indicate.

10 MR. BEARD: It would indicate the PORV is
11 open?

12 MR. WALLEMAN: Yes, sir.

13 MR. BEARD: Below that the indication of
14 flow is the light turned off?

15 MR. WALLEMAN: Turning green.

16 MR. BEARD: Changes colors?

17 MR. WALLEMAN: Yes.

18 MR. BEARD: Can you see this light or,
19 from your own experience, can you distinguish the
20 colors from the seven feet distance?

21 MR. WALLEMAN: Yes, sir.

22 MR. BEARD: So I guess, in summary, then
23 you are saying that you may not be able to read the
24 exact position of this thing on the small needle

1 from seven feet but you probably could distinguish
2 the open/close status of it by virtue of the lights
3 from seven feet?

4 MR. WALLEMAN: Yes, sir.

5 MR. ROSSI: But the valve could be, the
6 PORV could be somewhat open like 20 percent or so
7 and the light could show it as being closed?

8 MR. WALLEMAN: Yes, sir.

9 MR. BURNS: Green would indicate the valve
10 is open?

11 MR. WALLEMAN: Yes. No, green would
12 indicate the valve was closed. Red is open I
13 believe.

14 MR. LANNING: After you close the block
15 valve, do you recall what the turn of the pressure
16 was after that?

17 MR. WALLEMAN: After I closed the block
18 valve and at this time I had also gone to automatic
19 on the spray valve, the spray valve closed and I saw
20 pressure seemed to stop decreasing.

21 MR. BELL: Rick, pardon me, what
22 instrumentation is available on your watch station
23 for the quench tank?

24 MR. WALLEMAN: The quench tank is in the

1 back panel and it -- to really determine what the
2 quench tank level and pressure was, you would have
3 to walk around to the back and look at it.

4 MR. BELL: So from your watching station
5 you can't look over the desk section of the panel
6 and quench tank instrumentation?

7 MR. WALLEMAN: I could, but I would have
8 to lean and kind of stand up to look down on it.

9 MR. BEARD: I would like to understand
10 also, and we may be getting into the area of
11 overlapping our trains of thought here, but you
12 mentioned the spray valve was closed.

13 What indication do you have that the spray
14 valve had, in fact -- why do you believe that the
15 spray valve closed?

16 MR. WALLEMAN: For one thing you have
17 indication of spray valve position, and that
18 indicated that the spray valve was closed.

19 MR. BEARD: When you say position, can you
20 elaborate on that?

21 MR. WALLEMAN: That is, again, goes by
22 control power, I believe, to the spray valve; am I
23 right?

24 MR. SIMON: Position indication of the

1 limit switches.

2 MR. BELL: The spray valve is a motor
3 operated valve; is that correct?

4 MR. WALLEMAN: Yes, sir.

5 MR. BELL: So you are talking about the
6 limit switches that are driven by the spray valve
7 motor?

8 MR. SIMON: Yes.

9 MR. BEARD: Are there two sets of
10 indications of spray valve's position?

11 MR. WALLEMAN: No, sir.

12 MR. BEARD: Just one?

13 MR. WALLEMAN: Yes, sir.

14 MR. BEARD: And I guess with Lou's
15 assistance, you are saying that that's the actual
16 position of the valve versus what a control system
17 may have requested it or demanded it to go to?

18 MR. WALLEMAN: No, it is the actual
19 position of what the motor says the valve should be
20 at.

21 MR. BEARD: Okay. But it is not a control
22 system output to tell it to go someplace?

23 MR. WALLEMAN: No, sir.

24 MR. BEARD: It is where you think it went.

1 MR. WALLEMAN: Yes, sir.

2 MR. BEARD: And this is different from the
3 indication you had for the PORV valve?

4 MR. WALLEMAN: Yes, sir. The PORV valve
5 is just solenoid indications.

6 MR. BEARD: The control demands not the
7 actual --

8 MR. WALLEMAN: Yes, sir.

9 MR. BEARD: I don't want to put words in
10 your mouth, it is just my style to say things and
11 hope you will agree with it and see if I am
12 understanding you properly.

13 So at this time, the spray valve's closed;
14 the block valve is closed, and what's going on with
15 the pressure?

16 MR. WALLEMAN: It seems the pressure had
17 kind of leveled off. The spray valve I think cycled
18 in automatic again during this time and then at this
19 point I opened the PORV block.

20 MR. BEARD: Why did you choose to do that?

21 MR. WALLEMAN: I did not think that the
22 PORV had lifted, and I wanted the availability to
23 have the PORV in automatic. I watched --

24 MR. BEARD: Did you consult with anyone

1 else before doing that?

2 MR. WALLEMAN: No, I kept the shift
3 supervisor informed when I isolated it and when I
4 opened it.

5 MR. BELL: Pressure was returning to above
6 its normal value?

7 MR. WALLEMAN: Yes, sir. I believe that
8 the -- that it was at its normal value and that the
9 spray valve cycled once during this event.

10 MR. ROSSI: Now, let me just clarify one
11 thing. I gather that the bottom line on what you
12 could determine when you closed the block valve was
13 that at the time you closed the PORV block valve,
14 the spray at the same time was effectively turned
15 off at about the same time?

16 MR. WALLEMAN: Yes, sir.

17 MR. ROSSI: So you couldn't really
18 distinguish the effect of which of those may have
19 had an effect on the pressure?

20 MR. WALLEMAN: No, sir. As a matter of
21 fact, I was, at this point, I was relatively
22 convinced that I had -- that it was the spray and
23 the effect of the water and the RCS that caused the
24 transient, and that is why I opened the block

1 because if I had had any indication that it had been
2 the PORV, I would not have opened the block valve.

3 MR. BELL: You mentioned earlier that you
4 saw the pressurizer temperature was below a value
5 that you would expect. The normal pressurizer
6 temperature is somewhere around 648 degrees.

7 MR. WALLEMAN: Yeah. 855.

8 MR. BELL: What value was the temperature
9 when you looked and made this determination?

10 MR. WALLEMAN: It was around 630.

11 MR. BELL: So it was 20 degrees below
12 normal?

13 MR. WALLEMAN: Yes, sir.

14 MR. BELL: That is pressurizer water space
15 temperature; is that correct?

16 MR. WALLEMAN: Yes, sir.

17 MR. BEARD: Is that a significant value,
18 20 degrees below?

19 MR. WALLEMAN: Yes, sir. At approximately --
20 well, from a range of like at 600 degrees, you would
21 have around 1600 pounds and then at 650 or so you
22 would have 2150.

23 So it led me to believe that it should be
24 below normal and I would also -- when this had

1 happened and that took place, I had let them know
2 that I did not think that the PORV was stuck.

3 I informed them that I just closed it just
4 to be safe, and then when I opened it back up, I was
5 watching pressure closely, and it did not go down so
6 then --

7 MR. BEARD: The pressure did not decrease?

8 MR. WALLEMAN: No, sir.

9 MR. BEARD: So that would indicate what
10 about the status of the PORV?

11 MR. WALLEMAN: Then I assumed that it was
12 just -- yeah, it was just something that I did that
13 was just being extra safe.

14 MR. BEARD: Because you believed that
15 since the pressure didn't decrease when you opened
16 the block that the PORV was closed and holding the
17 pressure?

18 MR. WALLEMAN: Yes, sir.

19 MR. BEARD: Let me shift your focus a
20 little bit.

21 MR. LANNING: Before we leave the block --

22 MR. BEARD: I am going to pursue that very
23 line, but I think that what you are telling us the
24 general thing, even though we haven't said it, is

1 basically what you did, what you saw, what you
2 thought and the reason behind it as you were going
3 through it.

4 I would like to shift your train of
5 thought in a sense and say a few days have gone by
6 since the event. As you indicated and brought up
7 there is some speculation as to whether PORV did or
8 did not operate properly.

9 MR. WALLEMAN: Yes.

10 MR. BEARD: Having had some days -- I am
11 trying to turn you around to looking back on what
12 happened. That's what I am trying to say.

13 Looking back on what happened, would there
14 be some indication that would put you in the
15 direction of thinking that the PORV did not function
16 properly? What would be the indications that would
17 say it did not function properly?

18 MR. WALLEMAN: Well, the -- you mean the
19 reason that I say that I think it might not have
20 functioned properly?

21 MR. BEARD: Yes.

22 MR. WALLEMAN: I looked at the alarm
23 printer and saw that the valve had actually -- PORV
24 indication that comes off the flow, the acoustic

1 monitor that that closed after I closed block.

2 MR. BEARD: This is the acoustic monitor
3 we spoke about earlier?

4 MR. WALLEMAN: Yes, sir.

5 MR. BEARD: You are saying the alarm
6 printer on that computer point indicates that the
7 acoustic monitor went to zero, unquote, after the
8 block valve was closed in time?

9 MR. WALLEMAN: Yes, sir.

10 MR. BEARD: And from that you are drawing
11 what conclusion?

12 MR. WALLEMAN: And from that, in my own
13 mind at least, I am drawing the conclusion that the
14 PORV had probably been open.

15 MR. LANNING: Why was it you consulted the
16 alarm print-out? Is that part of your post trip
17 review or for what reason?

18 MR. WALLEMAN: The reason I consulted it
19 is because after -- it was about a day later when I
20 consulted it, and after the trip and everything
21 events were starting to become somewhat hazy, and I
22 want to refresh in my mind.

23 As a matter of fact, I don't have -- I
24 wanted to look at the graphs for -- that I had that

1 monitor pressure and several other indications, but
2 they were all gone. I wanted to refresh why I had
3 done what I had did.

4 And there was, indeed, a lot happening and
5 it was hard to tell exactly, you know, at what point
6 I did what, and I wanted to see if I could kind of
7 go over the events in my mind and figure out why I
8 had performed the function I did.

9 MR. LANNING: Had the performance of PORV
10 been questioned by other personnel to you?

11 MR. WALLEMAN: No, sir, I think a day
12 later technical section called up and said something
13 to the effect that they asked why I had closed the
14 block.

15 MR. LANNING: They asked you why you
16 closed the block?

17 MR. WALLEMAN: Yes, sir.

18 MR. LANNING: As you review the alarm
19 print-out and you apparently discovered maybe the
20 PORV was still open when you closed the block valve?

21 MR. WALLEMAN: Yes, sir.

22 MR. LANNING: What did you do with that
23 bit of information? Did you tell anyone that maybe
24 the PORV was open?

1 MR. WALLEMAN: I mentioned it to several
2 people, yes, that, you know, that it might have had
3 indication that the PORV was open. That is not to
4 say that it was, and I did not know if, in fact, it
5 was.

6 MR. LANNING: I understand.

7 MR. BURNS: Who did you discuss it with?

8 MR. WALLEMAN: Some of the operators on my
9 shift.

10 MR. BEARD: Have you finished your line of
11 questions?

12 MR. BELL: I have one more. What's the
13 stroke time of the PORV block valve?

14 MR. WALLEMAN: I could not tell you that.

15 MR. BELL: May I ask Mr. Simon. Is that
16 okay with the Team?

17 MR. SIMON: I don't know. It is not a
18 long, long valve. It is in a matter of second, but
19 I don't know.

20 MR. BEARD: Let me ask a general question,
21 is it like a few seconds or 60 seconds, do you
22 remember that?

23 MR. ROSSI: If you don't remember, just
24 say you don't remember because this is a piece of

1 information that we really don't need from these
2 people because we can go find that out.

3 MR. BELL: But we are going to need it
4 from somebody because I take it that this computer
5 point that told you that the PORV opened and that
6 the PORV closed comes off the same signal source as
7 this light that tells you that the PORV is open and
8 closed?

9 MR. WALLEMAN: It comes off the acoustic
10 monitor.

11 MR. SIMON: I believe that is accurate.

12 MR. BELL: So it is possible that our open
13 indication on the computer actually indicated that
14 the PORV opened, but our closed indication is
15 actually telling us when the PORV block valve is
16 closed.

17 MR. ROSSI: These, I think, are design
18 details that I believe we can get from drawings and
19 design documents, and what we are mainly interested
20 here is finding out observations.

21 Although it is useful if you do know these
22 facts to tell us, but if you don't know them, just
23 say you don't know them because we can find them.
24 We are mostly interested in what you did or saw.

1 MR. BEARD: I would like to ask an
2 operational question if I could.

3 If the plant were in a post trip situation
4 and maybe with an unusually high pressure and at any
5 rate, you open the spray valve -- I am trying to get
6 a feel for operating times and how big effects are.

7 In this kind of situation if you simply
8 open the spray valve to a hundred percent as you did,
9 full spray, just ball park it, what type of -- how
10 big of an effect would you expect that to have on
11 pressure in terms of rate in which the pressure
12 would decrease?

13 MR. WALLEMAN: At normal operating
14 pressure, just opening up the spray valve?

15 MR. BEARD: With the reactor tripped.

16 MR. WALLEMAN: With the reactor tripped.

17 MR. BEARD: We are talking about post trip
18 situation.

19 MR. WALLEMAN: It would depend on what you
20 are doing with the makeup system.

21 MR. BEARD: You had two makeup pumps
22 running?

23 MR. WALLEMAN: Yes, sir.

24 MR. BEARD: Let down close?

1 MR. WALLEMAN: Yes, sir.

2 MR. BEARD: Maybe I am getting so
3 complicated it is going to be impossible to answer.
4 How big of an effect would the spray be?

5 MR. WALLEMAN: At the -- I don't believe,
6 first of all, if you are talking about when I --
7 when I was up in -- when we were up in pressure, I
8 believe at that time I only had one makeup pump on.

9 I think I had turned the other one off,
10 and you do see a definite decrease in spray valve --
11 it is a very noticeable decrease in RCS pressure
12 when you are using the spray valve.

13 As a matter of fact, with all of our
14 heaters on and the spray valve just partially open,
15 you can still decrease pressure.

16 MR. BEARD: So it is a strong effect?

17 MR. WALLEMAN: Yes, sir.

18 MR. BEARD: Different situation,
19 hypothetically or somewhat related to this event,
20 but hypothetically, if the PORV was closed and then
21 it opened and stayed opened, how big of an effect on
22 the pressure would you expect that to give as a
23 single item?

24 MR. WALLEMAN: A large effect, sir.

1 MR. BEARD: Would you compare it smaller
2 or greater than the effect of the spray?

3 MR. WALLEMAN: I would say larger than the
4 effect of the spray. Again, maybe not depending on
5 the situation that you are in.

6 MR. BEARD: I am just trying to get a feel
7 for the operational response.

8 MR. WALLEMAN: Yes, I would say it has a
9 larger effect on RCS pressure than the spray level.

10 MR. BEARD: Now, if they were both on,
11 then I guess from what you said, you are talking
12 about a very rapid decrease in pressure?

13 MR. WALLEMAN: Um-hmm.

14 MR. BEARD: And that's the situation we
15 were in during the event?

16 MR. WALLEMAN: At least that I formulated
17 we were in.

18 MR. BEARD: The pressure decrease that you
19 actually saw in terms of magnitudes of effects, you
20 were there watching the pressurizer, pressure gauges
21 and this, that and the other.

22 In context of how big effects are, do you
23 feel like that was the effect of the spray, do you
24 feel like that the magnitude of the pressure

1 decrease was due to the PORV or -- how would you
2 associate it magnitude-wise?

3 MR. WALLEMAN: Again, I could not make
4 that judgment now. It was in that situation I just
5 felt that it was only due to the spray.

6 MR. BEARD: But I thought you said earlier
7 that the pressure seemed to be coming down a little
8 faster than you were comfortable with or expected?

9 MR. WALLEMAN: Yes, sir.

10 MR. BEARD: So to double-check you decided
11 to close the block?

12 MR. WALLEMAN: Yes, sir.

13 MR. BEARD: Could that magnitude have been
14 about the same magnitude that would have occurred if
15 both the spray was spraying and the PORV were open?

16 MR. WALLEMAN: I have no idea of that
17 magnitude, but to tell you the truth, if both of
18 them were open, I would have thought it would have
19 probably decreased even faster than it did.

20 MR. BEARD: If both were full open?

21 MR. WALLEMAN: Yes, sir.

22 MR. LANNING: Can you tell me what the
23 discussion was about with the shift in your
24 discovery that the PORV may have remained open.

1 MR. WALLEMAN: Just the fact that I
2 discussed it and that, you know, the fact that I had
3 done that even not knowing what the PORV was open
4 may have helped the situation.

5 MR. LANNING: Did you place any particular
6 relevant significance to the fact that the PORV may
7 have stuck open?

8 MR. WALLEMAN: No, no -- it was just
9 possibly something else that had happened in the
10 plant that was unforeseen.

11 If indeed the pressure had gone down with
12 the spray valve having not -- if the spray valve had
13 gone -- is closed and the pressure and I hadn't
14 isolated the PORV, then I would assume that it was
15 the PORV.

16 MR. LANNING: There would have been no
17 question in your mind then?

18 MR. WALLEMAN: None at all.

19 MR. BEARD: So you really had two or three
20 effects going on at one time. It is hard to
21 separate them?

22 MR. WALLEMAN: Yes, sir.

23 MR. BEARD: I would like to understand a
24 little bit better about your experience with the

1 acoustic monitors from an operational viewpoint, not
2 design questions.

3 Do you remember about how long they had
4 been installed in the plant?

5 MR. WALLEMAN: About a year.

6 MR. BEARD: Have you observed in the
7 control room the operation of these things?

8 MR. WALLEMAN: No, sir. I have never
9 observed the monitor either the position indication
10 change or the flow through the monitor.

11 MR. BEARD: Are you aware from other
12 operators the operational experience of these
13 indicators, the acoustic monitors, have you heard
14 that from any of your buddies on this shift or other
15 shifts?

16 MR. WALLEMAN: As an advice or --

17 MR. BEARD: No, just general chit-chat
18 between operators or amongst operators of the PORV
19 acoustic monitors are reliable, hey, I really like
20 them or they operate sporadically or the thing's
21 always inoperable or seems to be a very touchy
22 system or just general operating experience that
23 operators would tend to chat about over a coffee or
24 something.

1 MR. WALLEMAN: No. The reason being is I
2 tend to rely on the equipment, and that is something
3 that you hope to never challenge. You hope to never
4 challenge that system. It is available. It is
5 there if you need it, but it is something that you
6 just never expect to see.

7 You never expect to see the PORV open in
8 the first place and, in fact, that's the first time
9 that I have ever seen the PORV open.

10 It is easy to second guess myself now and
11 say that I should have looked at those indications,
12 but I didn't. As far as I was concerned, everything
13 had gone well to this point.

14 I isolated for a back up reason just
15 because I thought it is a good thing to do. I let
16 them know I did it. I wasn't even sure if I should
17 have done it at the time, but I did it. When you
18 opened it back up, like I said, the spray valve had
19 stopped and the pressure decreased.

20 MR. BEARD: One last question in this area,
21 are you aware of what sort of maintenance experience
22 has been on the acoustic monitors in terms of
23 trouble report written or maintenance work requests
24 written frequently or rarely or do you have any feel

1 for that?

2 MR. WALLEMAN: I don't have any feel for
3 that at all.

4 MR. BEARD: I want your impression. I
5 would not want Louis's on that one.

6 MR. WALLEMAN: My own impression was that
7 it is not worked on very often at all.

8 MR. BEARD: So it is -- would it be a fair
9 statement of your opinion to say that as far as you
10 know, they haven't been called upon to operate very
11 often, but as far as you know that they are reliable
12 and should be trusted?

13 MR. WALLEMAN: Yes, sir.

14 MR. ROSSI: Your experience with the
15 opening of the PORV at the plant I thought I heard
16 you say that you had no previous experience with it
17 opening while you were on shift at the plant?

18 MR. WALLEMAN: No, sir.

19 MR. ROSSI: You had no --

20 MR. WALLEMAN: No, I had none.

21 MR. ROSSI: None. So your experience with
22 the effect of the PORV is based entirely on training
23 and the simulator and not any experience on the
24 plant?

1 MR. WALLEMAN: No, sir.

2 MR. ROSSI: I assume you have had
3 experience with the spray and not PORV at the plant?

4 MR. WALLEMAN: Yes, it is a typical thing
5 to degas, and you learn with the heaters energized
6 and keep pressure normal.

7 MR. BEARD: Rick, I think we are at a
8 logical breaking point. Would you like to take a
9 five or ten minute break. I suggest we declare a
10 five or ten minute recess.

11 (Thereupon, a recess was taken.)

12 MR. ROSSI: Let's go back on the record.

13 MR. BEARD: I guess we were continuing the
14 interview. It seemed like where we were, Rick,
15 things were pretty well steadied out.

16 MR. WALLEMAN: It seemed like pressure had
17 pretty much steadied out and I had overheard -- I
18 was kind of listening in for what was happening in
19 on feedwater, and I had overheard that we had got
20 the start-up feedwater, and that Brian was -- had
21 been initiating flow.

22 And at this point I wasn't sure, but it
23 seemed like the pressure had been steady, but then
24 all of a sudden it started dropping again. And I

1 assume it was due to him initiating flow.

2 MR. ROSSI: You are fairly sure that the
3 block valve had been closed and the pressure had
4 been reasonably stable for some period of time and
5 then it started to drop?

6 MR. WALLEMAN: Yes.

7 MR. ROSSI: Again, after you had overheard
8 that they were getting start-up feedwater available?

9 MR. WALLEMAN: Yes, sir, in fact, that was
10 out of my mind at that time.

11 MR. BEARD: Didn't you reopen the block
12 valve at some time?

13 MR. WALLEMAN: Yes, sir.

14 MR. BEARD: So at the time you were
15 talking about was the block reopened or had it been
16 at that point?

17 MR. WALLEMAN: When I opened the block
18 valve was when it was steady, and I didn't notice
19 any decrease in opening the --

20 MR. BEARD: The decrease that you
21 attribute to the steam generator, was that after the
22 block valve had been reopened? I don't mean as a
23 result of, just did it occur subsequently?

24 MR. WALLEMAN: I believe it was after the

1 block valve had been reopened. I know that it was a
2 steady state when I opened the block valve, and it
3 didn't change after I opened the block valve and so
4 that was out of my mind. I informed the ship sup,
5 and I went on from there.

6 MR. BEARD: I understand that things were
7 relatively steady beyond that, but at some point did
8 you do any operations related to the high pressure
9 injections pumps or the low pressure injections
10 pumps?

11 MR. WALLEMAN: Yes, sir. After they
12 started feeding the generators, pressure was
13 dropping rapidly. The heaters were all on, and I,
14 at this point, when pressure was dropping rapidly I
15 believe at this point was where I started the second
16 makeup pump again and I had that off.

17 And then the pressure got down, and it
18 seemed to slow down the pressure decrease and but we
19 were getting close to the SFAS set points for
20 pressure which was 1650. We were getting close to
21 1700 pounds but steadying out.

22 I informed the assistant shift supervisor
23 who was in there that pressure was getting low. It
24 seemed to be steadying out but that it was down near

1 1700 pounds. He, at this point, suggested that we
2 ought to try piggyback operation of the ECCS system.

3 MR. LANNING: What do you mean by
4 piggyback operation?

5 MR. WALLEMAN: This is where you start the --
6 you have both the low pressure injection and high
7 pressure injection pump running with a piggyback
8 valve open that allows low to go to high to increase
9 the head discharging of high pressure injection pump.

10 MR. LANNING: What is now in this
11 configuration, what is the shutoff head of the pumps?

12 MR. WALLEMAN: At that point, the shutoff
13 head with both pumps working together I believe the
14 shutoff head would be around 1730 pounds.

15 MR. LANNING: And you did this alignment
16 because of the decreasing pressure not because of
17 procedures; is that --

18 MR. WALLEMAN: Yes, it allows you to use
19 piggyback as an operator aid whenever you feel that
20 you need more inventory into the RCS. And we just,
21 at that point, we had had feedwater back.

22 We didn't want to initiate the safety
23 features actuation system so as an operator aid he
24 just decided to help with the pressure control by

1 initiating piggyback mode of operation.

2 MR. BEARD: When you say initiate, are you
3 talking about lining up the system in preparation
4 for operation into this piggyback configuration or
5 are you talking about aligning it and actually
6 turning the system on?

7 MR. WALLEMAN: We lined it and actually
8 turned the system on.

9 MR. BEARD: The system pressure in the
10 reactor coolant system was on the order of 1700.
11 The head of the piggyback configuration was
12 somewhere approaching 1800. Do you know whether you
13 got any flow into the system at this time?

14 MR. WALLEMAN: I am not sure. I didn't
15 see the low flow alarms clearing on the enunciator
16 panels. I was really monitoring pressure more. And
17 the assistant shift supervisor, I told him to
18 initiate the piggyback mode while I was monitoring
19 that, and he was actually in the front doing that.

20 And so it was shortly after he did it
21 though we had been steady it seemed like at 1700
22 pounds, and it was shortly after he did that it
23 started increasing pressure I assumed on my own
24 maybe we did get a little help from the API pump.

1 MR. BEARD: During the time when the
2 pressure was in the order of 1700 pounds, did you
3 happen to notice the saturation meters?

4 MR. WALLEMAN: Yes, sir, I looked at them,
5 and they were -- am not sure if this is when I saw
6 47 degrees, but they were well above saturation
7 pressure.

8 MR. BEARD: Do you have any feel for at
9 what point in the scenario that the plant
10 experienced a minimum value of saturation?

11 MR. WALLEMAN: It was -- I am not sure if
12 it was -- it seemed to me it was about that time
13 maybe slightly before that or about that time when
14 the pressure was coming down, but it was around that
15 time and even at that, like I said, I checked it
16 several times and it never got below 47 degrees.

17 MR. BEARD: What then caused the pressure
18 to raise above the 1700?

19 MR. WALLEMAN: Well, the pressurizer
20 started -- we had started adding inventory to the
21 pressurizer and with the heaters on two-fold effect
22 that pressure started coming back up.

23 MR. BEARD: So you had makeup pumps that
24 were putting in in the heaters and the heaters

1 heating up and you may have gotten some contribution
2 from the piggyback ECCS system?

3 MR. WALLEMAN: Um-hmm.

4 MR. LANNING: After you turned on the HPI
5 pumps, does that constitute a manual actuation of
6 the safety injection system?

7 MR. WALLEMAN: I am not sure. It was
8 manual actuation. That's the safety system.

9 MR. LANNING: Was it configured in a
10 manner that would -- that is similar to the safety
11 injection configuration if it actuated
12 automatically?

13 MR. WALLEMAN: An automatic mode, no, it
14 is not in piggyback in an automatic mode.

15 MR. BEARD: If -- let me back up and get
16 it in perspective. I gather that you are saying
17 that you went to the piggyback mode because you were
18 approaching the automatic set point of 1650?

19 MR. WALLEMAN: Yes, sir.

20 MR. BEARD: If you had done -- not done
21 that, and the pressure continued to fall, didn't
22 round out above it, if the pressure continued to
23 fall, the assistant system would automatically turn
24 itself on and start injecting water as it may be

1 needed; is that right?

2 MR. WALLEMAN: Yes, sir.

3 MR. BEARD: Why is it important, in your
4 mind, to avoid that actuation?

5 MR. WALLEMAN: For one thing, that
6 actuation is an actuation that comes in account when
7 you have somehow breached the design of RCS. The
8 system is for the event of a LOCA, and our
9 indications were not of a LOCA.

10 We didn't want the isolation that that
11 cause for during the LOCA.

12 MR. BEARD: Containment isolation.

13 MR. WALLEMAN: And we had our feedwater.
14 We just didn't feel that we needed safety features
15 actuation.

16 MR. BEARD: So there is not any direct
17 adverse effect of the automatic actuation other than
18 possibly unnecessary containment isolation actions?

19 MR. WALLEMAN: Yes.

20 MR. BEARD: If the ECCS system had been
21 actuated automatically or manually when you were in
22 the piggyback mode, is the system operation such
23 that it would have realigned itself from the
24 piggyback mode into a straight high pressure

1 injection system and a low pressure injection system
2 or would that require some manual operation?

3 MR. WALLEMAN: The low pressure injection
4 system wouldn't come on with the level of actuation
5 that he had -- that we had but the high pressure
6 injection system would have.

7 So it wouldn't be the normal line up
8 because it would not shutoff the low pressure
9 injection pump or the piggyback valve wouldn't
10 isolate.

11 MR. BEARD: So the automatic acutation
12 would not effect the piggyback valve and the system
13 would have stayed in its piggyback configuration?

14 MR. WALLEMAN: Yes.

15 MR. BELL: But you would have still pumped
16 water into the coolant?

17 MR. WALLEMAN: Yes, sir.

18 MR. BEARD: Were the systems aligned like
19 this, this might be a technicality, but with the
20 systems aligned like that, is a high pressure
21 injection system and the low pressure injection
22 system in the configuration required for them to be
23 considered operable?

24 MR. WALLEMAN: Yes, sir. If I may verify

1 that fact.

2 MR. BEARD: Certainly.

3 MR. SIMON: Yes.

4 MR. BELL: I would like to take you back
5 into the event a minute, if I may. You said earlier
6 that you observed temperatures as high as 590
7 degrees T average.

8 Did that give you any concern or any of
9 the operating crew any concern?

10 MR. WALLEMAN: Yes. In my own mind and
11 from being at the simulator and watching an event
12 where you went on PORV cooling --

13 MR. BELL: Would you describe PORV cooling,
14 exactly what that term means, please?

15 MR. WALLEMAN: Okay. PORV cooling is
16 where you open the PORV, and it is like a feed and
17 bleed operation and the RCS.

18 You are feeding through the makeup system
19 and through LPI, and you are removing heat through
20 the PORV.

21 MR. BELL: So we are emptying the contents
22 of the RCS into the quench tank?

23 MR. WALLEMAN: Yes, sir.

24 MR. BELL: And we are replenishing the

1 contents with cool water from the engineered safety
2 feature system?

3 MR. WALLEMAN: Yes, sir.

4 MR. BELL: Go on.

5 MR. WALLEMAN: Where was I at?

6 MR. LANNING: You were describing the --

7 MR. BELL: 590 degrees F average, and any
8 concerns that you or the operating staff may have
9 had about this high temperature.

10 MR. WALLEMAN: Okay. Well, as I said, in
11 the back of my mind, and from being at the simulator,
12 I know that when you get up towards about 600
13 degrees your saturation pressure of the RCS is right
14 around 1600 pounds.

15 At that point your HPI pumps and the PORV
16 with both of them in that mode of cooling, it is a
17 touch and go situation on whether you can -- whether
18 it will cause pressure or temperature in the RCS to
19 come down or stay at that level for a long time or
20 possibly go into a condition where you start super-
21 heating because when you open the PORV like that you
22 bring the reactor coolant system down to its
23 saturation, which the pressure according to whatever
24 temperature you have in the RCS.

1 At 590, I am not sure what it would be,
2 but it would be low enough that the pressure of the
3 HPI pumps would be able to put in sufficient amount
4 of water to have the a good PORV cooling.

5 MR. BELL: So was the staff concerned
6 about overheating of the cooler?

7 MR. WALLEMAN: Yes, there was some talk.
8 Brian Young was particularly -- he had been
9 watching the temperature come up without anything he
10 could do about it, and he was contending that we
11 ought to go into the PORV cooling mode.

12 And the shift supervisor at the time was
13 on the phone with the operations engineer, and they
14 were discussing, I believe, the same incident
15 although I didn't hear their phone conversation or
16 anything like that. So he made a suggestion to the
17 shift supervisor that we ought to go into the mode
18 of cooling.

19 MR. ROSSI: Who made the suggestion?

20 MR. WALLEMAN: Brian Young.

21 MR. BELL: Do you have procedural
22 guidance for this mode of cooling?

23 MR. WALLEMAN: Yes, as matter of the EP
24 1202 it gives you guidance that if your steam

1 generators go dry without main and aux feedwater
2 available, then you are supposed to go into that
3 mode of cooling.

4 MR. BELL: Was anybody using the EP 1202?

5 MR. WALLEMAN: Yes, we were at that point
6 when Steve left to go get -- to find out the
7 start-up feedwater availability, and Brian was
8 watching the indicators for to see if the steam
9 generators were dry.

10 MR. BELL: You were at what point?

11 MR. WALLEMAN: We were at that point in
12 the procedure when it was determined main and aux
13 feedwater availability and check if you don't have
14 the availability in your steam generators and
15 indicate dry -- it kind of let's you try -- if you
16 don't have the availability right away but you still
17 have level in the steam generators, it gives you
18 time to try to get your feedwater back before you
19 have to go into the the PORV cooling.

20 MR. BEARD: Let me interrupt his train of
21 thought and ask one right along this line.

22 Are you saying that the way you were
23 carrying out the emergency procedure was that the
24 assistant shift supervisor was basically reading it

1 out and asking you folks as the operators verify
2 this or do that and then you were giving him a
3 response back?

4 MR. WALLEMAN: Through the procedure, yes.

5 MR. BEARD: And then when he left the room
6 to go down to the start-up pump, did that have the
7 effect of an interruption in that procedure?

8 MR. WALLEMAN: We were at a hold point in
9 the procedure, so, yes, I guess it was an
10 interruption in the procedure.

11 MR. BEARD: Do you remember roughly how
12 long he was out of the room or before he returned to
13 that procedure?

14 MR. WALLEMAN: I imagine approximately
15 seven minutes, eight minutes.

16 MR. LANNING: When you say that you were
17 in a hold point in the procedure, what do you mean?

18 MR. WALLEMAN: It was at the point where
19 it said in the procedure, determine main and aux
20 feedwater capability. And if you don't have aux and
21 main feedwater capability, our procedure is setup
22 with the notes or the actions on the left and the
23 guidelines on the right.

24 On the right on the guideline it says

1 actions can be made to restore aux feedwater or main
2 feedwater while at this point unless the steam
3 generators are dry or steam generator level is low
4 and the pressure is decreasing below -- I don't
5 remember the value but 920 or some value similar to
6 that.

7 MR. LANNING: So when would you get back
8 into the procedure?

9 MR. WALLEMAN: Once you restored your main
10 feedwater, then you would be back at that point or
11 aux feedwater, go on from there.

12 MR. LANNING: If you do not restore main
13 feedwater?

14 MR. WALLEMAN: At that point, you would end
15 up going -- the way the procedure is setup, if you
16 do one thing it might route you to another part of
17 the procedure or if you do another you would go on
18 with the steps just below it. So at that point it
19 would reroute you to another part of the procedure.

20 MR. BEARD: So is it correct then at this
21 point in the procedure you were making the attempt
22 to restore feedwater?

23 MR. WALLEMAN: Yes, sir.

24 MR. BEARD: And that you would continue in

1 that mode until you reached a point where the
2 procedure would then require you to enter the feed
3 and bleed mode? In other words --

4 MR. WALLEMAN: Yes, sir.

5 MR. BEARD: You had some window in there.
6 I am trying to get at and to restore it. It wasn't
7 an unlimited period of time?

8 MR. WALLEMAN: No, sir.

9 MR. BEARD: And that window would be, I
10 guess, the end point of that window would be at the
11 point that not one but both steam generators had
12 quote, dried out, unquote?

13 MR. WALLEMAN: Yes, sir.

14 MR. BEARD: Do you believe you ever hit
15 that as far as you were aware, that end point?

16 MR. WALLEMAN: I don't believe so because
17 Brian was monitoring that, and he said we still had
18 it available.

19 MR. BEARD: Okay.

20 MR. WALLEMAN: I didn't look at the gauges
21 myself.

22 MR. BEARD: I understand. So as far as
23 the emergency procedures go, you were in the part of
24 it that said you don't have main and auxiliary feed,

1 you should try to restore it?

2 MR. WALLEMAN: Yes.

3 MR. BELL: I am satisfied with that, those
4 answers. May I go to another area now.

5 Rick, you said you went on this shift as a
6 reactor operator in January of '85?

7 MR. WALLEMAN: Yes.

8 MR. BELL: When did you receive your
9 license?

10 MR. WALLEMAN: January of '85.

11 MR. BELL: So you received your license
12 one day, one day you are a non-licensed operator and
13 the next day you are a licensed operator?

14 I realize that's a simplistic statement,
15 but did you have any training period between the
16 time you were licensed and the time you were
17 assigned shift responsibilities as a reactor
18 operator?

19 MR. WALLEMAN: Well, you go through a
20 training program before you --

21 MR. BELL: I understand that.

22 MR. WALLEMAN: I will answer the question.
23 No.

24 MR. BEARD: No additional training.

1 MR. WALLEMAN: No, sir.

2 MR. BELL: No additional training after
3 receiving your license.

4 Now, you are required to spend three
5 months on shift under the guidance of a licensed
6 operator as one of the conditions to obtain a
7 license.

8 MR. WALLEMAN: 480 hours I believe of on
9 shift instruction. I am not sure if that is three
10 months or not.

11 MR. BELL: Your number is probably closer
12 than mine.

13 MR. SIMON: 520.

14 MR. WALLEMAN: Sorry. I knew it was a lot
15 of hours.

16 MR. BELL: Was that beneficial?

17 MR. WALLEMAN: Yes, sir.

18 MR. BELL: In this 520 hours that you
19 spend on shift are casualty procedures studied on
20 the guidance of the reactor operator?

21 MR. WALLEMAN: Yes, sir.

22 MR. BELL: Is there any qualification,
23 guide or cards that you have to complete during this
24 520 hour period?

1 MR. WALLEMAN: Yes, sir.

2 MR. BELL: Do they include a discussion of
3 control room instrumentation and when it would be
4 used and what it would be used for?

5 MR. WALLEMAN: Yes, sir.

6 MR. BEARD: Is that instrumentation
7 section divided out into safety related
8 instrumentation and things such as the non-nuclear
9 instrumentation system?

10 MR. WALLEMAN: The whole control room is
11 setup into different systems and each time that you
12 get a system checked out it asks for interlocks the
13 other system, control room indications, functions of
14 the system and it is pretty complete.

15 MR. BELL: You told us you were in the
16 Navy for eight years.

17 MR. WALLEMAN: Yes, sir.

18 MR. BELL: What was your rank when you
19 were discharged from the Navy?

20 MR. WALLEMAN: E-6.

21 MR. BELL: What rating?

22 MR. WALLEMAN: Nuclear electronics
23 technician, but I was a reactor operator.

24 MR. BELL: You were a reactor operator

1 there?

2 MR. WALLEMAN: Yes, sir.

3 MR. BEARD: If there are no other
4 questions? Anybody around the table have a question?

5 MR. BURNS: I have just got a couple at
6 the end I will ask.

7 MR. BEARD: Okay. I would like to be sure
8 that you have the opportunity, Rick, either with
9 Louie here or without, as you may prefer, to just
10 for us to ask you the question and let you respond
11 as you may choose, is there anything that you would
12 care to share with us that you think we need to know
13 to understand the event or the plant situations that
14 may have led to the event or is there anything else
15 that you would like to just say to us of anything
16 related at all?

17 Just, we have been asking you questions.
18 I want to be sure you have an opportunity to tell
19 this panel, this Fact Finding Team, anything you
20 would like for us to know?

21 MR. WALLEMAN: I would like you to know
22 that I have done this of my own volition. They have
23 not prompted me into this, attending this interview.
24 I am very nervous about it. And I have been -- I

1 have tried to be very straight forward with you.

2 And as far as the incident that day, that
3 was my first trip. It was awesome. I was really
4 surprised, but I was never worried not during the
5 whole incident that we had ever released radiation
6 to the public.

7 I did not want to get into PORV cooling,
8 but I realized that may become a necessity because
9 of the clean up involved but during the whole
10 incident that happened I felt worried but relatively
11 calm.

12 MR. BEARD: Was your assessment after
13 having gone through it of this a very severe
14 situation or medium transient routine thing or what
15 did you feel like about what you had been through?

16 MR. WALLEMAN: I was, to be perfectly
17 frank, I was surprised that the amount of things
18 that went wrong during the trip.

19 MR. BEARD: Are you talking about
20 equipment failure or other types of failures?

21 MR. WALLEMAN: Just the equipment failures.
22 I was surprised at the amount but our equipment
23 operators did a fine job. Steve Feasal, our
24 assistant shift supervisor, did an outstanding job,

1 and I believe that we recovered fairly well.

2 I think that the problems had to be
3 figured out, but I have no doubt that I would go
4 back into the plant today with no worries.

5 MR. BEARD: As I sit here looking at you
6 concentrating on your answer I can't help but notice
7 you have got on a blue shirt. I will just be very
8 blunt and ask you straight out, it is my personal
9 understanding at least that there -- the union
10 contract is about to expire and that management has
11 introduced some changes that would relate to, say,
12 the blue shirt, rumors about the possibilities of a
13 strike may occur next month.

14 Can you tell us anything of your own
15 feelings as to what this environment may have
16 related to the event or may have been independent of
17 the event?

18 MR. WALLEMAN: I think it was totally
19 unrelated to the event. Once you are in a situation
20 like that, your total concentration is on that event,
21 and I bear no animosity for the wearing of the
22 uniforms. My job is my job, and I try to do it as
23 best I can.

24 MR. LANNING: Has it made any impact on

1 plant operations or maintenance activities or other
2 day-to-day activities prior to the event?

3 MR. WALLEMAN: No. Granted whenever you
4 have a contract dispute there is going to be a
5 little animosity, but I have seen nothing in respect
6 to people paying any disrespect for equipment or for
7 their supervisors or anything like that. I have
8 found that not to be the case.

9 MR. LANNING: Do you believe that the
10 equipment is maintained adequately and in a timely
11 fashion?

12 MR. WALLEMAN: That's a tough question
13 because with any type of -- with anything like that,
14 whenever something is broken, you have in the back
15 of your mind that the feeling that it can be down,
16 could be fixed quicker or this is our gear and we
17 are important; it should be fixed right away.

18 I think that we have a good maintenance
19 department, and the plant does its best. See, I am
20 kind of used to eight years in the Navy. When
21 something broke, you shutdown the engine room. You
22 fixed it right then, and you stayed still in the
23 water until something was fixed, and it is not quite
24 that fast in the civilian world.

1 MR. ROSSI: Do you find a significant
2 difference between how long it takes to fix
3 equipment that you find a problem with here than you
4 found in the Navy then?

5 MR. WALLEMAN: It takes longer.

6 MR. ROSSI: Can you say by how much?

7 MR. WALLEMAN: No, it would depend on what
8 it is and the availability of it. I wouldn't even
9 be able to tell you. I just know that it is kind of
10 hard to gauge it. I did that. I don't know if I
11 should have.

12 I did that because I was used to that for
13 eight years, and it is not as fast, but I think that
14 it is done to the best of the ability of the people
15 and the availability of supplies in this area.

16 MR. BEARD: Along that line, what type of
17 ship or craft were you on in the Navy, was it a
18 surface vessel or submarines?

19 MR. WALLEMAN: I was on two different
20 submarines.

21 MR. BEARD: Submarine duty?

22 MR. WALLEMAN Yes, sir.

23 MR. BEARD: Rick, going back to your Navy
24 experience in submarines, I was not in the Navy. I

1 was in the Air Force so that's why I want you to
2 help me understand.

3 But here at the Davis-Besse plant we are
4 talking about a large land based commercial electric
5 generating station. We are not talking about a
6 submarine.

7 And I believe I would like to ask you if
8 the submarine situation is not of a different
9 significance than for a commercial electric power
10 generating station and hence the importance of
11 prompt maintenance may be different?

12 MR. WALLEMAN: Yes, it is very much
13 different. Your life is directly on the line, and
14 this is probably why I don't even though it was my
15 first trip and everything, I didn't get quite as
16 nervous as I have been in the service because there
17 are times when you trip that you better respond
18 quickly in the service.

19 And it is not the same here. It is the
20 same, but it is not -- the me it is safer.

21 MR. BEARD: I understand. I wanted to get
22 in perspective my own feeling that the promptness of
23 maintenance in a tactical situation like a submarine
24 is not necessarily that is required for a commercial

1 generating situation.

2 MR. WALLEMAN: No, sir.

3 MR. BEARD: Have we finished that? I have
4 the one question I snapped my finger at a minute ago.

5 Somebody brought up the question with
6 maintaining the equipment. As I understand it,
7 during the operation prior to the event one of the
8 source range nuclear instrumentation was
9 misbehaving and declared inoperable and that would
10 be on your watch station, so to speak, right?

11 MR. WALLEMAN: Um-hmm.

12 MR. BEARD: Was that true?

13 MR. WALLEMAN: Yes, sir.

14 MR. BEARD: I understand also that during
15 the decay of the nuclear system you went through the
16 intermediate nuclear range changes and decayed down
17 and got into the source range channels?

18 MR. WALLEMAN: Yes, sir.

19 MR. BEARD: Can you tell us how the source
20 range nuclear instruments behaved?

21 MR. WALLEMAN: The one that had been
22 declared inoperable was indicating a level, but
23 since it had been declared inoperable we didn't
24 trust it. The other source range was not indicating

1 a level at all.

2 MR. ROSSI: It was down scale or up scale?

3 MR. WALLEMAN: It was down scale.

4 MR. BEARD: So that was obviously an
5 inordinate reading.

6 MR. WALLEMAN: Yes, sir. I went in the
7 back. This was after the situation had been
8 remedied and pressure was controlling normal, and we
9 had feed restored. I went in the back and looked in
10 the RPS cabinet where the power supplies are for the
11 detector, and I noticed that it did have the normal
12 power supply and that the detector was not in test.

13 So I don't know what was wrong with it,
14 but it was definitely wrong at the time.

15 MR. BEARD: Then as I understand it, you
16 are in a situation where the neutron level is in
17 range for which you are not covered by operable
18 instrumentation?

19 MR. WALLEMAN: Yes.

20 MR. BEARD: Does that kick you into some
21 emergency procedure of any type?

22 MR. WALLEMAN: The assistant shift
23 supervisor got out the AB for that and we -- he
24 determined that we should emergency borate.

1 MR. BEARD: Would that action occur on
2 your watch station?

3 MR. WALLEMAN: Yes, sir.

4 MR. BEARD: That would be something you
5 would do?

6 MR. WALLEMAN: Yes, sir.

7 MR. BEARD: What did you do?

8 MR. WALLEMAN: I initiated boration.

9 MR. BEARD: Initiated boration?

10 MR. WALLEMAN: Yes.

11 MR. ROSSI: That's through the makeup?

12 MR. WALLEMAN: It is not -- what it is is
13 just borating above a certain level, a certain rate.
14 The rate is like 18 gallons per minute. I was about
15 25 gallons per minute.

16 MR. ROSSI: That's through the makeup
17 pumps you do that?

18 MR. WALLEMAN: I do the makeup pumps, but
19 it wasn't through that. It was through the makeup
20 system. You have boric acid pumps available which
21 end up getting recycled into the RCS.

22 MR. BELL: By makeup pumps?

23 MR. WALLEMAN: Yes, sir.

24 MR. BEARD: So I guess I just want you to

1 continue that emergency procedure or abnormal
2 procedure whatever it was, it required emergency
3 operation. That was done. Was there anything else?

4 MR. WALLEMAN: I don't know. I initiated
5 the operation, and I know that we had an NINC person
6 troubleshooting the event, and it was later that we
7 ended up getting our NI's back. He was in the
8 procedure, and I assume that he would take care of
9 that portion of it.

10 MR. BEARD: Did this failure of the source
11 range channel occur during the middle of the event
12 or after things had stabilized?

13 MR. WALLEMAN: It had occurred during the
14 middle of the event. At least I think so, after
15 things had stabilized was when I noticed it or when
16 it was noticed, but it had occurred -- I assume it
17 had occurred earlier.

18 MR. BEARD: But you didn't notice it until
19 after things had stabilized?

20 MR. WALLEMAN: Yes, sir.

21 MR. BELL: I have one final question?
22 During this event you have had one and sometimes two
23 makeup pumps running.

24 Have you had to make up to the makeup tank

1 or do you have an alternate source of suction to the
2 makeup pumps at this point?

3 MR. WALLEMAN: It is through the BWST, an
4 alternate source.

5 MR. BELL: Did you use that from the
6 borated water storage?

7 MR. WALLEMAN: Yes, sir.

8 MR. BELL: Yet another manual action you
9 had to perform?

10 MR. WALLEMAN: Yes, sir.

11 MR. BELL: And the boric acid in the
12 borated water storage tank is higher than the
13 concentration in the makeup tank?

14 MR. WALLEMAN: Yes, sir.

15 MR. BELL: So you had additional shutdown
16 margin from that?

17 MR. WALLEMAN: Yes, sir. As a matter of
18 fact, when we received our first sample from C&HP
19 for RCF boron, I did a shutdown margin calculation
20 and without considering any of the effects due to
21 Xenon we were approximately one and a half to
22 two-thirds shutdown.

23 MR. BELL: And you are required to be one
24 percent shutdown?

1 MR. WALLEMAN: Yes, sir.

2 MR. BEARD: So as far as you are concerned
3 the boration did adequately mitigated any concern
4 about loss of nuclear instrumentation?

5 MR. WALLEMAN: Yes, sir.

6 MR. LANNING: Are there high point vents
7 on the cooling system?

8 MR. WALLEMAN: Yes, sir.

9 MR. BEARD: Are they operable?

10 MR. WALLEMAN: Yes, sir.

11 MR. LANNING: Are there procedures for
12 their use?

13 MR. WALLEMAN: Yes, in the emergency
14 procedure when you get during the later stages of --
15 I think it is during inadequate core cooling it was
16 not normally used and something I would have to
17 review to tell you that.

18 MR. BELL: I think it should be pointed
19 out that that's not an immediate action so you are
20 not required to commit that to memory. That's a
21 supplementary action and procedure.

22 MR. LANNING: The intent of the question
23 was was there a procedure for the use of the high
24 point vents?

1 MR. WALLEMAN: Yes, sir.

2 MR. BURNS: Did you discuss what you were
3 going to say here today with anyone before the
4 interview?

5 MR. WALLEMAN: No, sir. For one thing I
6 didn't know what I was going to discuss here today.

7 MR. BURNS: So no one from the licensee or
8 licensee council has told you what to say here today?

9 MR. WALLEMAN: No, sir, I was just
10 prompted to be honest.

11 MR. BURNS: You discussed interviews of
12 Brian Young or Steve Feasel or Ted Lehman had with
13 them?

14 MR. WALLEMAN: Not the questions they were
15 asking but how did the interview go.

16 MR. BURNS: How it was conducted and how
17 it went?

18 MR. WALLEMAN: Yes, sir.

19 MR. BURNS: Thank you.

20 MR. ROSSI Are we finished?

21 MR. BEARD: I think so other than I would
22 like to thank Rick for coming, and I would like to
23 thank him for his honesty. I think it was obvious
24 you are making a valient attempt to be as honest and

1 tax your memory.

2 I think you have done an outstanding job.

3 Thank you.

4 MR. ROSSI: Off the record.

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6 Thereupon, the interview was
7 concluded at 1:45 o'clock p.m.

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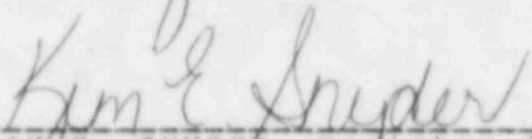
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CERTIFICATE

I, Kim E. Snyder, a Registered Professional Reporter and Notary Public in and for the State of Ohio, do hereby certify that I took the interview of Richard Walleman 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 16th day of June, 1985.



KIM E. SNYDER, Registered
Professional Reporter, Notary Public
in and for the State of Ohio.

My Commission expires January 12, 1989.

7	4	OMIT THE WORD "THE". FOR CLARIFICATION
7	13	OMIT THE WORD "THE". FOR CLARIFICATION
8	9	CHANGE TO SAY "INCREASE THE SPEED OF THE MAINFEED PUMP TURBINE" FOR CLARIFICATION
8	10	OMIT THE WORD "T".
8	10	ADD THE WORDS, "ON A". BEFORE THE WORD "TRIP". FOR CLARIFICATION
8	23	ADD THE WORD "OF" BETWEEN THE WORDS from "supply" and "the" FOR CLARIFICATION
9	2	OMIT THE WORD "WAS"
9	12	CHANGE LINE TO READ "YES THAT IS THE REASON WE WERE OPERATING LESS THAN 100%." FOR CLARIFICATION
11	21	CHANGE "LOADS WERE UP the ^{WITH} THE POWER;" TO "WHILE UP AT POWER," FOR CLARIFICATION
11	22	CHANGE "VOLTAGES CUTOFF THE" TO "VOLTAGE IS CUTOFF TO THE" FOR CLARIFICATION
13	17	BETWEEN "UNDERSTAND" AND "ALL" PUT THE WORD "DURING" FOR CLARIFICATION
14	2	CHANGE "ON THE" TO during "WHILE" FOR CLARIFICATION
14	10	AFTER "MUCH" INSERT THE WORD "STEADY" FOR CLARIFICATION
14	21	AFTER "OF" PUT "THE" FOR CLARIFICATION
16	14	CHANGE "FROM THE KITCHEN" TO "IN THE KITCHEN" FOR CLARIFICATION
17	15	CHANGE "THERE" AT THE END OF THE LINE TO "WE WERE" FOR CLARIFICATION
17	16	CHANGE WHOLE LINE TO READ "INSURING THE PRESSURIZER, PRESSURIZER LEVEL WAS GOING" FOR CLARIFICATION
17	17	CHANGE LINE TO READ "UP AND PRIMARY SYSTEM PRESSURE WAS GOING UP" FOR CLARIFICATION
17	19	CHANGE "IT" TO "IN" FOR CLARIFICATION
18	2	BETWEEN "THE" AND "ONE" INSERT THE WORDS "LEVEL FOR" FOR CLARIFICATION
18	11	CHANGE "STARTED" TO "STARTING" FOR CLARIFICATION
19	5	CHANGE "INDUCED" TO "INDUCE" FOR CLARIFICATION
19	13	CHANGE "TRANSIENT" TO "TRANSIENTS" FOR CLARIFICATION
21	10	CHANGE "WHERE" TO "ARE" FOR CLARIFICATION

22	20	Add Second Sentence "For final post trip condition" for clarification
23	22	Delete the comma between "24" and "25" for clarification
24	9	Delete "that letdown is" for clarification
24	15	Between "inventory" and "on" put the word "loss" for clarification
35	7	change "exertion" to "excursion" for clarification
37	5	change "Reactor" to "Pressurizer" for clarification
39	7	change "tack" to "tap" for clarification
39	23	omit the comma between "24" and "25" it should be "2425" for clarification
40	12	change "stream" to "feed" for clarification
51	1	change "monitor" to "monitored" for clarification
51	5	change "oscillation and" to "oscillations of" for clarification
55	3	change "it was 47 degrees" to "its lowest was 47 degrees" for clarification
59	13	change "Tube" to "panel" for clarification
59	14	for change "Am I correct" to "Am I correct Louis Simon" for clarification
66	7	change "855" to "655" for clarification
77	13	After "pressure" insert "decreased" for clarification
79	19	After "pressure" insert "TRANSIENT" for clarification
81	1	Second Sentence insert "None at the plant" for clarification
91	23	After "which" insert the word "is" for clarification
103	15	change "down" to "done" for clarification
105	20	change "The" to "TO" for clarification
109	5	change "NINC" to "I and C" for clarification
110	19	change "RCF" to "RCS" for clarification