

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

1 In the Matter of:

2 IE TMI INVESTIGATION INTERVIEW

3 of ~~INSTRUMENT MAN B~~

4 William A ~~Yeager~~
5 yeager
6
7
8

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

13 June 20, 1979

14 _____
15 (Date of Interview)

16 July 26, 1979

17 _____
18 (Date Transcript Typed)

19 315

20 _____
21 (Tape Number(s))

22 NRC PERSONNEL:

23 Robert Marsh
24 James S. Creswell
25 Anthony N. Fasano

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1 MARSH: The time is 7:45 PM. The date is June 20, 1979. My name is
2 Bob Marsh. And I'm an Investigator with the U. S. Nuclear Regulatory
3 Commission assigned to the Region III Office, Chicago, Illinois. This
4 evening we are conducting an interview, of a confidential nature. The
5 interview is being conducted in Room 225 of the Red Roof Inn in Swartara,
6 Pennsylvania. At this time prior to commencing the interview, I'd
7 like the other NRC individuals in the room to identify themselves and
8 spell their last name if they would.

9
10 CRESWELL: This is James S. Creswell. I'm a Reactor Inspector assigned
11 to Region III.

12
13 FASANO: Anthony N. Fasano, Inspection Specialist, NRC, currently out
14 of Region I.

15
16 MARSH: I thank you. For the expedient of conducting this interview
17 we will be referring to our subject of this evening by the name of
18 **IMB**. And I will indicate for the record that **IMB** is present for the
19 interview and is accompanied by his council. At this time we would
20 normally go into some background and a brief resume of the individuals
21 experience in the nuclear field, that will be bypassed tonight and I
22 think we'll go directly to the areas of questions. Creswell do you
23 want to start?
24
25

1 CRESWELL: This is Jim Creswell speaking. **IMB** I'd like to go back
2 to the day of March 28, 1979.

3
4 MARSH: Let me interrupt for just a second. I just noticed one area I
5 omitted. **IMB**, before we started I gave you a two-page memo which
6 before we begin questioning I would like to just make reference to.
7 You've had a chance to look at that memo and I'm just briefly going to
8 describe and indicate that it covers the purpose of NRC's investigation,
9 some brief words about its scope and its authority to conduct it and
10 it provides you some words as to your rights as a interview subject.
11 On the second page are several questions which I would like to get a
12 response to you before we begin. First question addresses your understanding
13 of that two page memo. Have you had a chance to read it and do you
14 understand it?

15
16 **IMB**: Yes I have.

17
18 MARSH: Second question addresses, do we have your permission, we
19 being NRC, to tape this interview?

20
21 **IMB**: Yes you do.

22
23 MARSH: And thirdly, the question indicates, would you like a copy of
24 the tape or transcript?
25

1 **IMB:** Yes, a copy for myself and probably for counsel.

2
3 **MARSH:** Fine. That will be provided as I indicated earlier, first
4 thing tomorrow morning. If you want to, I'll give you a phone number,
5 give me a buzz and I'll get you those two copies. There is a fourth
6 question that is not called out at the rear of the page but it is
7 covered in the body and that indicates your right to have a company
8 representative or anyone you so choose. If it's my understanding,
9 your choice would be strictly to have counsel here.

10
11 **IMB:** Right.

12
13 **MARSH:** Fine. Okay, at that point then we'll proceed.

14
15 **CRESWELL:** Jim Creswell speaking again. **IMB**, again I'd like to go
16 back to the day of March 28, 1979. And could you tell us when you
17 came onsite and the conditions that you found whenever you arrived
18 onsite?

19
20 **IMB:** Okay. I arrived onsite at approximately 6:10 AM. I got to the
21 Unit 1 Instrument Shop at about 6:15. At that time I took a cup of
22 coffee and walked into the Unit 1 Control Room just to see what was
23 going on, get an idea of what was going to happen that day. As the
24 Shift Foreman who was in charge then, what was happening, he had told
25 me that he was too busy right now, I can't talk with you. I'll see you

1 later on So at that time I went back into the Shop, finished drinking
2 my coffee and was waiting for the relieving crew to show up. At
3 approximately 6:40 A.M., Instrument Foreman walked in and we talked
4 for a few minutes and at approximately 6:50 A.M., Unit 2 had announced
5 there was a Site Emergency - Radiation Emergency, a Site Emergency.
6 Gave the, the alert siren went off I recall. Also made the announcement
7 for the unnecessary personnel to report to their assigned areas they
8 were supposed to go to.

9
10 MARSH: Marsh speaking, **IMB**, let me interrupt for a second. You say
11 6:50, that sounds relatively specific, had you checked the watch or
12 how were you aware of this?

13
14 **IMB** Yes I did. I looked at a watch, it was 6:50 A.M. on the button.

15
16 MARSH: I thank you.

17
18 **IMB** Okay. At that time right after the siren went off and they
19 announced the emergency, the Foreman had told us to report to the
20 North Auditorium, which is the mustering area for Unit 1 personnel. I
21 then reminded the Foreman that the Emergency Repair Party was to
22 report to the Health Physics muster point, which he had forgot about.
23 So we went down there to the Unit 1 HP area. When we arrived there,
24 it was a little bit of mass pandemonia going on. People were running
25 around not knowing exactly what was happening. We were mustering down

1 there, trying to get an Emergency Repair Party crew together. Some of
2 the crew was caught coming onsite, some of the crew was caught coming
3 offsite, so security had their hands full, everybody had their hands
4 full. About the only thing that I did see that struck me odd, that
5 there was something going on really bad was one HP technician going
6 back into the Unit 1 Aux Building with a Scott Airpack on, it was
7 either a Scott Airpack or it was a Full Faced Particulate Shield, and
8 a teletector.

9
10 CRESWELL: Excuse me **IMB** was that a teletector?

11
12 Teletector, right.

13
14 CRESWELL: Okay.

15
16 **IMB** Okay. We stayed there for approximately oh I would say 30
17 minutes, it was between the timeframe of 7:20 and 7:30 we were told to
18 report to Unit 2's STE Office, which is the Startup Test Engineers
19 office adjacent to the Unit 2 Control Room. Okay, we, there was about
20 6 of us, I can't remember who all was in the party, but there was
21 mechanics, electricians, instrument, plus a foreman that was assigned.
22 We took the normal route to Unit 2 which is through the outside area,
23 the Unit 2 Auxiliary Building, through the security door and up the
24 steps. And upon entering Unit 2's Control Room, it was just mass
25 confusion of people. I never seen so many people in one Control Room.

1 We went directly to the STE's office and sat there and awaited further
2 instructions as to what was wrong and what was going on.

3
4 CRESWELL: **IMB** going back to the time that you assembled in the Unit
5 1 health physics area, was there any one person there in charge?

6
7 **IMB** The Foreman who was with me at that time took charge and started
8 getting a muster sheet together because as I said before there was
9 oncoming crews coming on, there was offgoing crews going off and at
10 this time accountability was very difficult because of the people in
11 and out of the plant. So we started accounting for as many people as
12 we could. He was relieved of that duty when we were told to go to
13 Unit 2. I don't know what happened to him or where he went after
14 that, I believe he went back to the Unit 1's muster area.

15
16 CRESWELL: What was his name **IMB**?

17
18 **IMB**: Gordie Lawrence, Gordie Lawrence.

19
20 CRESWELL: Gordie Lawrence.

21
22 **IMB**: Right. He was the Unit 1 Instrument Foreman.

23
24 CRESWELL: So he was in charge of the health physics area?
25

1 **IMB**: Well, he was an Instrument Foreman, he did take charge of the
2 mustering area. Health physics, as far as a foreman is concerned, I
3 don't know what foreman was on-duty at that time.

4
5 CRESWELL: Was there a Mr. Kalenevitch there?

6
7 **IMB**: Yes. He was there. He had shown up there about 5 minutes
8 after we arrived at the HP area. Advised us that he was appointed the
9 Emergency Repair Party Coordinator and Foreman and he would take over
10 from there.

11
12 CRESWELL: Do you recall the name of the health physics technician
13 that you saw with a full faced protective apparatus, either a respirator
14 or Scott Airpack?

15
16 **IMB**: No I don't. I can't recall.

17
18 CRESWELL: Okay. So you arrived at the Startup Test Engineers Office,
19 who were the other 3 people that were with you?

20
21 **IMB**: The offgoing instrument crew would of been Carl Vincent, and I
22 believe his partner was Matt Joyce, a new guy that just came on.

23
24 CRESWELL: Do you recall seeing a Mr. Bennett and a Mr. Gilbert?

25

1 **IMB**: Not right then and there I didn't. No, they didn't come in and
2 I didn't see those people until later on.

3
4 CRESWELL: Okay. About what time would you estimate that you arrived
5 in the Startup Test Engineer's office in Unit 2?

6
7 **IMB**: It would of been, oh, 7:35 plus or minus a few minutes.

8
9 CRESWELL: Okay. You've mentioned the impression that you got walking
10 in the Control Room. How many people would you estimate were at the
11 control panels?

12
13 **IMB**: At the control panels, uhm, it's hard to tell exactly how many
14 people were at the control panels itself. I would estimate that there
15 was a good 50 people inside the Control Room at the time. As far as
16 who was at the control panel, what was going on, and again it's another
17 story because there was turnovers taking place and everything else.
18 There was just crews coming in. It would be a wild guess for me to
19 say how many people was at the panel itself.

20
21 CRESWELL: Was it your assessment that things were being well controlled
22 or that there was a non-controlled type of situation?

23
24 **IMB**: It seemed that though things were under control, 'cause I did
25 notice the Shift Supervisors were going over prints which normally

1 would tell me that they had an idea of what was going on, trying to
2 evaluate the situation. There wasn't any paranoia, as to say nobody
3 was totally out of the scene, if you know what I mean. So, everybody
4 seemed to be keeping a little head, trying to observe what was going
5 on, seeing what was happening.

6
7 CRESWELL: Okay. After you reported to the Startup Test Engineers
8 Office, what's the next thing that happens? Did you report to any one
9 individual in that area?

10
11 **ImB**: No. We didn't report to any one individual at all. We had our
12 foreman that was with us and he stayed out into the Control Room and
13 he is the one that is supposed to coordinate the Emergency Repair
14 Party jobs. I would say we were in there from maybe 20 to 25 minutes
15 and the Unit 2 Foreman, Doug Weaver, walked in and asked us, two of
16 us, if we knew where the incore termination cabinet to the computer
17 was. There was a Unit 2 man that knew.

18
19 CRESWELL: Who was that, **ImB**?

20
21 **ImB**: Jim Wright. Okay. He knew where the termination cabinet was.
22 So they asked for 2 people to go down. Jim and myself went down.

23
24 CRESWELL: **ImB**, you went down with him?
25

1 **ImB**: Right. I went with who?

2
3 CRESWELL: With Jim Wright.

4
5 **ImB**: Right. I went down with Jim Wright. Our instructions were to
6 go down with a Type K thermocouple reader to disconnect various inputs,
7 non-specifically given, to the computer on the incore detectors and to
8 measure temperatures. When we asked why, the reason was, the computer
9 had over ranged on engineering units. So, we went, got a thermocouple
10 reader and went down to the cabinet...

11
12 CRESWELL: And this is you both go and get the thermocouple reader?

13
14 **ImB**: Right, we both went together, right.

15
16 CRESWELL: Where did you get the reader?

17
18 **ImB**: Out of the Unit 2 instrument storage area.

19
20 CRESWELL: Okay.

21
22 **ImB**: Okay. We went down to the relay room which was down through
23 the control tower steps we went and went into the relay room, opened
24 up the cabinet for the thermocouple inputs to the computer. And
25 visually looked at which ones would be the simplest to take off without

1 getting involved in cutting wire straps and wrapping and everything
2 else. So we started pulling, oh, sets off at a time, just 1 thermocouple
3 at a time so as not to lose where they were on the terminal board
4 measuring the temperatures. Do you want to know what temperatures we
5 saw or what?

6
7 CRESWELL: Please.

8
9 W.S.: Okay. Some of the temperatures we had seen were above normal
10 RC temperature. Two of the thermocouples, the first few we had
11 measured, were around 700 to 800 degrees specific temperatures I can't
12 quote you, I don't know. We had taken one off and we had measured
13 2600 degrees in and about that vicinity, it was very close to that.
14 At that time neither one of us believed that this was a true reading
15 because after seeing two, three that were 700, 800 degrees 2600 was
16 hard to believe so we decided to take a few more off. When we took, I
17 don't recall exactly how many, I believe through the course of testing
18 thermocouples we had at least 10 or 12 we had just connected the
19 total. We had seen temperatures ranging anywhere from I know there
20 was a bottom of about 690 some degrees to uppers of 3700 to 4000
21 degrees.

22
23 MARSH: Marsh speaking, ImB were there any written records made of
24 this time of your readings.
25

1 **IMB** Okay. While we were down there Mr. Bennett came down.
2

3 CRESWELL: About what time **IMB** would he have come down or where were
4 you at the measurements when he came down.
5

6 **IMB**: We had just started. We were probably finishing our second
7 reading because we had wanted to mark them down ourselves. Neither
8 one of us had a pencil or paper to mark it down with. So Mr. Bennett
9 had came down, also Mr. Gilbert. This is when Mr. Gilbert and Mr.
10 Bennett showed on the scene and also an engineer from Unit 2 came
11 down, the one that had originally requested that the readings be taken
12 place.
13

14 CRESWELL: Who was that **IMB**?
15

16 **IMB**: Oh gees, I talked with him about the other day and I can't
17 remember his name.
18

19 CRESWELL: An Instrumentation Engineer.
20

21 **IMB**: No, I don't think he is an instrumentation engineer. Oh my
22 this is embarrassing.
23

24 CRESWELL: Well Mr. Porter is the Unit 2.
25

1 **IMB:** There- You got it.

2
3 CRESWELL: Ivan Porter?

4
5 **IMB:** Ivan Porter, yea, I don't know whether he's an instrumentation
6 engineer or not. Okay, he came down on the scene then also. I believe
7 Mr. Bennett was taking handwritten notes as to what the temperatures
8 were.

9
10 MARSH: Excuse me, Marsh speaking, **IMB** why do you feel he was taking
11 notes. Did you see him with pad and pencil.

12
13 **IMB:** We actually asked him to take down what the temperatures were,
14 what we had done is recorded the pull slip number of the thermocouple
15 and cross referenced it, I believe, you know, later on to a core map
16 because I did see a core map of the incores and trying to find out
17 where they were with reference to the core, whether they were all
18 centrally located in one area or whether it was staggered throughout
19 the core.

20
21 MARSH: I Thank you.

22
23 **IMB:** Okay. As far as time frame when they arrived on the scene it
24 would have been right after we had started making the measurements,
25 probably within a second thermocouple, you're talking maybe five

1 minutes per measurement on it. Okay. After we had started getting
2 some measurements there and we saw what was going on, not knowing
3 exactly where the thermocouples was located in the core we decided to
4 make a few more measurements along with that and as I said before we
5 saw temperatures anywhere from 690 to close to 4000 degrees. We did
6 see one I know for sure was 3700 around in that area and at that time
7 both Jim and myself turned around and looked at all three of the
8 gentlemen that were with us and said this thing's melting down.

9
10 CRESWELL: Who was present at that time,

11
12 **IMB**: ...That the core is uncovered. That's Mr. Bennett, Mr. Gilbert,
13 Mr. Porter. Okay Mr. Porter kind of doubted our word and didn't
14 believe the readings.

15
16 FASANO: Fasano speaking, **IMB**, how do you know he doubted your word.

17
18 **IMB**: To keep the tape clean, not to embarrass people I won't use the
19 words, however he did turn around and look at us and says I don't
20 believe your readings. Are you sure you're taking your readings
21 correctly or is the thermocouple connected to the reader properly. So
22 after assuring that, he wanted a verification that the thermocouple
23 reader was working so the only verification we could really give not
24 having type "K" material around to check it out was to get millivolt
25 reader and measure the actual voltage coming up from the incore. So

1 at this time I don't know who went up to get the meter, I believe it
2 might have been Mr. Gilbert or Mr. Bennett went up to get a millivolt
3 meter but.

4
5 CRESWELL: **IMB** was there perhaps a digital void meter in that area?
6

7 **IMB**: I don't know whether there was digital volt meter there or not.
8 We did not bring one down with us. There might have been one there
9 from the ICS technician, NNI technician that works there but normally
10 when he leaves his equipment is all locked up so if there was one
11 there it probably no doubt would have been under lock and key.
12

13 CRESWELL: Digressing a minute, I believe the statement that you made
14 was that you felt the core was melted down or a statement of that
15 character was made. Was it possibly, possible that you phrased it in
16 terms that the core was uncovered.
17

18 **IMB**: Okay, the core was uncovered is what I said, the core is uncovered.
19

20 CRESWELL: Which way did you say it? Is that the way you phrased it.
21

22 **IMB**: Right. We're clarify that. The core was uncovered is what I
23 had said.
24
25

1 CRESWELL: Not that the core was melted down.

2
3 **IMB**: No.

4
5 CRESWELL: Okay.

6
7 **IMB**: Anyhow getting back to the subject, we had obtained a digital
8 volt meter with a cross reference table for voltage to temperature
9 wise for Type K Indicators and we had reverified I would say at least
10 75% of the thermocouples we had originally taken readings on and
11 especially the hot ones, the very hot ones, the 2600, 3000, 4000
12 degree one we had seen. The two instruments both agreed with each
13 other so at that time Mr. Porter had left the room.

14
15 CRESWELL: **IMB** about what time would you estimate this is that you
16 complete all the measurements.

17
18 **IMB**: Roughly estimating I would say in the area of approximately
19 maybe, oh boy, I gotta think now, 9:00, 9:15 around in that vicinity I
20 would say.

21
22 CRESWELL: Were there any more comments, **IMB**, about the condition of
23 the core.
24
25

1 **ImB:** No it was the general consensus amongst the instrument people
2 that were there that the core was definitely uncovered, we kind of
3 found it hard to believe that this many high temperatures that we had
4 seen that all those incores would have been bad and the only way that
5 they could have went bad that radically would be an uncovering of the
6 core, and a super overheating. The last thing we had done down there
7 in the relay room before leaving was that both Mr. Porter and the
8 Instrument Foreman requested that we hook up this thermocouple reader
9 to various thermocouples so that the operations department could use
10 it. So we did hook up I think it was maybe five or six. Now there
11 was no actual locations given, it was just pick five or six at random,
12 hook them up, verify that they do indicate properly and then our job
13 was finished then.

14 CRESWELL: **ImB** is there any doubt in your mind at the time all the
15 measurements are completed that Mr. Porter has been told by the people
16 down there that they feel the temperature indications indicate the
17 core was uncovered.
18

19
20 **ImB:** Did he believe us?

21
22 CRESWELL: I say is there any doubt in your mind that he had not been
23 told or that he had been told, sorry, that he had been told.
24
25

1 **JMB**: Oh no, I personally told him that and he was physically there
2 to read the readings. He saw the actual temperatures we had. This is
3 why the first time he didn't believe it.
4

5 FASANO: Fasano speaking. When the verification of the measurements
6 were made, using the millivolt meter was the information then given to
7 the same individuals and how, what was the response to the second set
8 of readings that tended to verify, at least correlate to the original
9 readings.
10

11 **JMB**: Okay. Now the second set of readings did in fact correlate the
12 original set of readings that was taken with the thermocouple reader.
13 The general feeling at least amongst Jim and myself was that the
14 readings we had were true and accurate. All five of us that were
15 present there did in fact visually see the actual readings we had
16 taken both off the thermocouple reader and millivolt reader. All five
17 of us did in fact verify that the millivolt reading through the conversion
18 table was correct. So I am sure we didn't read the wrong table or the
19 wrong line or something of that nature. At that time between Mr.
20 Bennett and myself, Mr. Wright, Mr. Gilbert, we had pretty well come
21 to the conclusion the core was uncovered. I believe Ivan didn't
22 really want to believe what was really taking place. I don't know
23 whether it was an attitude of hey your measurements are wrong, you
24 guys don't know what the heck you're doing or whatnot. I think the
25 general consensus throughout the whole first day was number one nobody

1 really knew what was actually happening, number two, some that had an
2 inkling of what was happening didn't really want to believe-what was
3 going on. Once you start seeing a temperature of 3000 to 4000 degrees
4 in a core zirconium alloy is what 3700 - 4000 degrees melting point
5 or is it 5000, I can't remember the actual melting point of the zirconium.
6 The first thing that starts coming to mind, you've got a meltdown
7 coming. The core is uncovered. That was basically the extent of our
8 test that we had done down there in the relay room. After we had
9 finished connecting up the thermocouple reader we reported back to the
10 ST office.

11
12 CRESWELL: That would have been about what time.

13
14 **IMB**: I would say probably between 9:25 and 9:35 around in that time
15 frame till we got back upstairs.

16
17 CRESWELL: Do you have any knowledge of Mr. Wright's involvement in
18 the hooking of the digital voltmeter on the T hot RTDs.

19
20 **IMB**: No I don't.

21
22 CRESWELL: Did he leave you at any time that you were down in the
23 cable room making these thermocouple measurements to perform any
24 operation like that.
25

1 **IMB:** I don't know of, I can't remember.

2
3 CRESWELL: Did he leave you, that's what I'm asking. Was he with you
4 all the time.

5
6 **IMB:** I can't really say for sure if he did leave, I can't remember.

7
8 CRESWELL: Okay what happened after you went back upstairs.

9
10 **IMB:** Okay, we went back up to the STE's office and remained there
11 for a short period of time, I would say probably twenty minutes. At
12 that time Mr. Weaver came in and told the Unit 1 people that they
13 could go ahead and reassemble at the North Auditorium in Unit 1, that
14 he had enough people on site at the time to handle anything that would
15 come up. So the people from Unit 1 started reporting to the North
16 Auditorium. This is where we back to. We went over to the North
17 Auditorium. In the meantime while everything was going on and we were
18 taking readings and that the normal crew that would be coming on duty
19 finally got onto the island, the off going crews finally got off the
20 island, so we had our normal manpower in there for the daytime.

21 CRESWELL: Okay.

22
23 MARSH: Before we begin another section here, I'm going to break at
24 this time and turn the tape, time being 8:13 p.m. and reading 463 on
25 the meter.

1 MARSH: Again resuming at 463 meter and the time being 8:14 p.m.

2
3 CRESWELL: **ImB**, after you leave the auditorium what happens to you.

4
5 **ImB**: Okay. We were told we were allowed to leave the North Auditorium
6 and all personnel were to report to the 500 KV void substation which
7 is just south of the island on route 441. As we were leaving the
8 health physics people had set up a monitoring checkpoint with friskers
9 to insure that if there was anyone contaminated that they would be
10 taken care of. I believe there were seven of us including myself that
11 was contaminated that day. We were told to report back to the Unit 1
12 health physics department to leave all our clothing there, anything
13 that would be contaminated. We were frisked before we went in to find
14 out exactly where the contamination was on us, which was over, hair,
15 arms, everywhere. The only thing that was not contaminated was my
16 legs and that because the contamination did not go through the clothing
17 or anything. My arms of course were because I was wearing a short
18 sleeve shirt, my face and my scalp was pretty well contaminated.
19 Actual disintegrations per minute or counts per minute I can't tell
20 you. We were checked there at the HP checkpoint. We had stripped
21 down there, put all our clothes, personal belongings and effects in a
22 polybag and were told to go back and shower which is standard HP
23 procedure to remove the contamination. Okay we had showered, came
24 back out, was refrisked, checked for any kind of radiation on us and
25 myself, I was clean. I don't know about the rest of the people. As

1 far as my personal belongings was concerned HP had frisked my personal
2 belongings, I was allowed to leave the island with my car keys, my
3 driver's license. The rest of my clothing and everything stayed
4 behind. HP insured me that they would wash my clothes, decon them and
5 get them back to the substation. Okay I went back out through the
6 same

7
8 MARSH: Excuse me **IMB**, Marsh again, what type of dosimetry were you
9 wearing at the time when you performed the duties.

10
11 **IMB**: Self reader and also a TLD.

12
13 MARSH: Okay, have you ever been provided the results of that TLD.

14
15 **IMB**: No I haven't.

16
17 MARSH: Okay, your self reader, your talking dosimeter direct reading
18 dosimeter.

19
20 **IMB**: Right.

21
22 MARSH: Do you recall what the accumulation was on that.

23
24 **IMB**: No I don't.
25

1 MARSH: Okay.

2
3 **ImB**: I do not recall what it was.

4
5 MARSH: And you say you have not been provided a summary of what your
6 TLD read for that.

7
8 **ImB**: I have not seen it yet, no.

9
10 MARSH: Fine. Thank you.

11
12 CRESWELL: **ImB** did you look at your self reading dosimeter.

13
14 **ImB**: I had looked at it when I was over in Unit 2 up in the STE's
15 office and there was no indication on it. It was the same indication.
16 Of course I didn't zero it, I can't remember exactly what it was
17 setting at from the previous day. But as far as any change was concerned
18 I didn't see any change.

19
20 CRESWELL: Where do you think you received the contamination.

21
22 **ImB**: I don't know because most of us were all in the same general
23 area. I believe where I received the contamination is that the Unit 1
24 instrument shop was pretty well vacated. Now I had went back in, the
25 Unit 2 instrument shop, excuse me, was vacated right after the accident

1 cause everyone was in the STE's office. Now I went back there to look
2 for test leads and things of this nature to make our thermocouple
3 readings with so it could very well have been back there. Throughout
4 the rest of the morning Mr. Wright was with me and he, from what I
5 understand, was not contaminated, I don't know. Somehow we believe
6 the only other place we could have got it would have been over there
7 in the Unit 2 instrument shop.

8
9 CRESWELL: **IMB** do you have any idea what might have caused this
10 event.

11
12 **IMB**: Well from what I've heard as to what has caused the event, the
13 initial cause of the plant trip was due to a malfunctioning valve on
14 the polishing system. The nuclear portion of it again from I've heard
15 cause I can't verify that I've seen it, was caused from, how shall I
16 put it, the negligence of leaving the emergency feedwater valves
17 closed, again from what I understand, which was again a procedural
18 error. I don't believe if it wasn't for the feedwater valves being
19 closed we wouldn't be in the mess we're in right now.

20
21 CRESWELL: Do you have any idea of what might have caused the valve
22 closure in the condensate polisher area.

23
24 **IMB**: I think the valve closure was caused by the water in the instrument
25 air. From what I understand I don't know the operation of their

1 polishing system over there. From what I understand the operator had
2 just got through, I believe changing vessels on the polishers, I don't
3 think all the polishing vessels are used at any one time, I think
4 there is one in standby for regeneration and any other ones are in
5 use. I don't know how many polishing vessels they have, probably six
6 I would assume. I believe from what, again I've heard, the operator
7 had just got done changing vessels over. My recollection of what was
8 told me was that a check valve or another type of valve was left open
9 which caused water to get into the instrument air supply. This had
10 caused apparently an air signal for something to happen in the polishing
11 system to cause one of the polishers, I would assume just one polishing
12 unit to trip off line, this is my assumption. Judging from the problems
13 that Unit 2 has had with primary system as far as flow and everything
14 is concerned, there is spec limits as far as running that reactor were
15 a lot thinner. No doubt the polishing unit tripping off line did
16 create one heck of a transient in the plant. All right, this would
17 account probably for the turbine trip. Okay the turbine tripping of
18 course is as in going to AC count, possibly for the reactor trip.
19 Very unusual that a nuclear generating station will have a turbine
20 trip without a reactor trip, at least in Unit 2 it was a rarity. The
21 events after that during the reactor trip of course the pressure is
22 going to build up once the turbine trips you lose feedwater, you
23 know, the reactor trips should pick up your emergency feedwater pumps
24 which of course did not pick up. So we did not have emergency feedwater
25 for any kind of cooling, I don't know how long the system was out.

1 Pressure apparently did build up from my recollection of what is
2 happening here, the reactor started building up in pressure, started
3 building up in temperature and I believe the reactor would have tripped
4 on a high temper or a high pressure greater than 2255. The actual
5 events of, you know, chronological order off the computer sheet I
6 don't know, the pressure, the electromatic relief valve and the pressurizer
7 was it RCRV2 I think it is went open, stayed open, from what I understand.
8 If that would have stayed open that would have flashed a pressurizer
9 dry. Common sense would pretty well say that since you've got 2255
10 pounds worth of pressure in there, god knows what temperature it was
11 at that time, I don't think our temperatures were measured at the
12 incore, had just started at that time, I think those temperatures
13 existed long before we got there. Of course that is going to flash
14 the steam very rapidly.

15
16 CRESWELL: **IMB** do you have any evidence that anybody tampered with
17 the condensate system or with the emergency feedwater valves.

18
19 **IMB**: None that I know of, not tampered with. There's been known
20 problems on the polishing system water getting into the instrument air
21 line. It's been a known fact that Unit 2 had that problem. A lot of
22 the maintenance people reported this to their foreman and instrument
23 air is an instrument shop responsibility. It is my belief that the
24 system should have been fixed, however, it is Met Ed's belief that the
25 plant shouldn't be shut down to fix it.

1 CRESWELL: Do you have any evidence that any of the emergency feedwater
2 systems have been tampered with.

3
4 **IMB**: As far as tampering with, no. About the only tampering I could
5 say would have been along with them is when the operator had removed
6 the tags and didn't open the valves. Of course the same situation I
7 believe existed in Unit 1.

8
9 FASANO: Fasano speaking. Remove the tags, what tags, do you know of
10 any tags.

11
12 **IMB**: I had believed and it was my understanding that those valves
13 were red tagged close for maintenance.

14
15 FASANO: Would that be then under a work request. Would that entail
16 operations to go and put a tag on before maintenance did any work on
17 those valves.

18
19 **IMB**: Yes it would. I would hope so.

20
21 FASANO: So this would be in the tag log.

22
23 **IMB**: It should be in the tag log, there should be a work request on
24 it, yes.
25

1 FASANO: You think there should be a work request, there would be a
2 work request.

3
4 **IMB**: Right. There would either be, even during an inservice inspection,
5 if it was not maintenance in an inservice inspection it would seem to
6 me logically that the operations department should tag those valves
7 out.

8
9 CRESWELL: John, what evidence do you have that those valves should
10 have been tagged out.

11
12 **IMB**: That they should have been.

13
14 CRESWELL: You mentioned red tagging.

15
16 FASANO: Tagout.

17
18 **IMB**: Right. It's a tagout procedure. If there is any kind of maintenance
19 going to be done on any system or anything like that, to me as far as
20 again like I said this was something that I had heard, that the valves
21 were in fact tagged out. No one has come up to me and said any different
22 yet, of course.

23
24 CRESWELL: How did you hear that **IMB**.
25

1 **ImB**: Rumors and propaganda, more or less, from company employees I
2 work with.

3
4 CRESWELL: What was the statement, exact precisely what was the statement
5 that they made.

6
7 **ImB**: We had asked what was wrong with the emergency feed system.
8 Why it did not go on, in fact, you know, what had happened. The word
9 was that I got, and this is the day of the accident, the emergency
10 feed pumps did in fact start. Operations did in fact see a discharge
11 pressure in the pumps, cause there is a discharge pressure indication
12 there, however, there was no flow. If there is a discharge pressure
13 and there was no flow it kind of tells you one thing, the valve's
14 closed. Now we had asked, you know, why was the valve closed, it was
15 tagged. That was the word I got. tagging mean red tag or blue tag,
16 one of the two.

17
18 CRESWELL: Was it possible somebody mentioned that some other equipment
19 was tagged, that - in the area -

20
21 **ImB**: Could very well be that some other equipment was tagged, but
22 the impression I got is in fact the emergency feed valves were closed
23 and it took them, what, approximately, from what one person told me,
24 it took him eight minutes to determine this factor, get down, get them
25 open. And I guess this would have appeared at what, between 4:10 and
4:15 during the initial turbine trip.

1 MARSH: Marsh, let me ask one quick question of the same vein just to
2 clarify and be sure that the question is asked the way I prefer it to
3 be asked. If I understand you right you have no knowledge whatsoever,
4 even heresay, of any attempted sabotage or intentional act by anyone
5 being the cause for this

6
7 **IMB** : No. No knowledge or anything of that nature.

8
9 MARSH: Second question in the same area. Do you have any information
10 heresay or direct of any type of a party possibly going on, I'm curious
11 because March 28 being the anniversary date, of the date upon which
12 Unit 2 went critical...

13
14 **IMB** : Well there was suppose to be a party that day, however, that
15 was cancelled. That was the instrument shop. I think the instrument
16 shop was going to have a party, I know the whole unit as a whole was
17 going to have a party. There was a lot of things scheduled since it
18 was the anniversary date.

19
20 MARSH: Where would that party have been scheduled for, do you recall
21 or know.

22
23 **IMB** : I believe the instrument shop party was going to be right in
24 the Unit 2 instrument shop. The company party, I don't know where it
25 was going to be but I do know that there was, I believe it was an
offsite location.

1 MARSH: Was that a formalized function. Were there flyers put out on
2 it and that...

3
4 **ImB**: Yea, there were postings put out on the doors, bulletin boards
5 and this thing so there was Unit 2 commercial party.

6
7 MARSH: Would you have any knowledge where any of those flyers or
8 posters are still located or pigeonholed.

9
10 **ImB**: I have no idea. All I know there was one on our shop door,
11 there was one down on the bulletin board, both bulletin boards in the
12 Unit 1 building. Unit 2 I can't tell you cause I very seldom get over
13 the Unit 2 to do anything.

14
15 CRESWELL: The purpose of that party was what, the anniversary date?

16
17 **ImB**: Right. Unit 2 commercial date or power, you know, they had an
18 anniversary date when they went critical I guess. And I was also
19 suppose to be I guess a commercial party too or something like that
20 involved.

21
22 MARSH: Are you aware of any other groups in-house just picking
23 names, health physics or janitorial staff also slating internal parties
24 unofficial.
25

1 **IMB**: I don't know, they might have, I have no idea, no recollection.

2
3 MARSH: Have you heard anything whatsoever on operational crews
4 planning parties of that nature.

5
6 **IMB**: No. The only one I heard of was the company one and also the
7 instrument shop one.

8
9 MARSH: Do you have any knowledge of past parties let's say by operational
10 staff and by operational I mean control room staff at Christmas,
11 holidays or something like this. Would this have been a normal thing
12 to expect or is that...

13
14 **IMB**: On the island itself?

15
16 MARSH: On the island itself.

17
18 **IMB**: No we don't, as far as what we call party-wise no. I worked
19 just last Christmas and about the only thing we had done then that was
20 out of the ordinary was that the couple of the operators were female
21 on the shift had decided to cook dinner for everybody so they had
22 brought in spaghetti and meatballs and I was sick that night so I
23 couldn't eat any of it. And my basic routine was to sleep on the work
24 bench most of the night until they needed me.
25

1 MARSH: The obvious area I would be looking at deep concern would be
2 the presence of alcohol beverages in or around the control room.

3
4 **ImB**: I have never seen any alcoholic beverages in the control room.

5
6 MARSH: No heresay of anything.

7
8 **ImB**: No. Everybody talks boy I wish I had a Budweiser but no it's
9 never there. I've never seen any.

10
11 MARSH: Okay. Thank you.

12
13 CRESWELL: **ImB** at this point. Tony did you have something.

14
15 FASANO: I just wanted to go back and maybe go throught just a couple
16 of steps, and then... Do you recall who got the second instrument for
17 the validation of the measurements when you were downstairs in the
18 cable room.

19
20 **ImB**: No I don't. I don't know who got it. I believe Mr. Bennett
21 left the room. I don't know whether he had brought back the actual
22 instrument itself, I do know that he did have with him the conversion
23 chart.
24
25

1 FASANO: In making the measurements who's making the contacts. Was it
2 a team effort or was one man doing the contacts as well as the reading.

3
4 **IMB**: I was doing the contacts, physically taking the contacts from
5 the back of the computer and putting them onto the meter movement, you
6 know, the meter itself. Mr. Wright would verify that in fact the
7 proper contact was on the proper post of the meter and we would both
8 take a look at readings. We were rather excited, its not every day
9 that you see a core temperature of 3700, 2700 degrees you know. So of
10 course we didn't believe it ourselves to begin with.

11
12 FASANO: Since then have you gone and...apparently you are interested
13 in the melting point of various materials.

14
15 **IMB**: We yes, sure am now.

16
17 FASANO: Well did you go back and look to see what your melting point,
18 these are alumel thermocouples?

19
20 **IMB**!: No I had not taken a look at that but I guess pretty darn high
21 from what I understand. I don't know what it is. Do you off hand
22 know?

23
24 FASANO: No I don't. I just wondered if you knew.
25

1 **IMB**: No I don't. There's one guy there that does know pretty good
2 the melting points of different things.

3
4 FASANO: We can look it up.

5
6 **IMB**: Yea.

7
8 FASANO: Do you recall setting some, you mentioned that you set some
9 up permanent'y.

10
11 **IMB**: Right.

12
13 FASANO: Now prior to that did you measure any trends. Were these
14 temperatures fluctuating to any degree over the period of time you
15 were?..

16
17 **IMB**: They were fluctuating but the amount of fluctuation as well as
18 I was concerned was minimal. Because when you start talking temperatures
19 of like I said 2600, 3000 degrees plus or minus 10 degrees, there
20 might have a couple there that were fluctuating, the lower temperature
21 ones may have been fluctuating a little bit more but there was no
22 actual what I could say radical fluctuation from say you're sitting at
23 a 1000 now and one minute later its at 2000 degrees.

24
25

1 FASANO: Do you recall seeing any temperatures very low like 200
2 degrees.

3
4 **ImB**: No I don't.

5
6 FASANO: You don't.

7
8 **ImB**: No.

9
10 FASANO: I don't have any other questions.

11
12 CRESWELL: John at this point I would like to ask you, do you have any
13 comments that you would like to make of any nature.

14
15 **ImB**: As pertaining to what.

16
17 CRESWELL: Anything.

18
19 MARSH: Marsh speaking, Its been our policy to turn the mike over to
20 the interviewee for any comment or point that he wants to make and
21 make a matter of record before we complete.

22
23 **ImB**: Well it sounds gross and maybe a little inhumane but I am kind
24 of glad the accident happened. Because I think it is going to waken
25 some people up. I think we are going to learn a lot from it. I

1 believe it is going to make nuclear power safer. And I am kind of
2 glad it happened in a new plant mainly due to the fact that the core
3 life being as shortlived as it was, it was only what only 97 days or
4 90 days or something. The actual radiation byproducts from a shortlived
5 core of that nature as far as plutonium-wise or cesium-wise or anything
6 of that nature, the byproducts were low and limited. But I hope
7 management learns a lot, I really do. I think they ought to take the
8 view now of shutting the plant down and fixing what's right, rather
9 than waiting till the last moment.

10
11 MARSH: Marsh speaking, I would like to say thank you for your time
12 and your recollection. Before we do finish up, counsel is there any
13 comment you want to put on record. Okay, fine, there's a negative
14 indication. I assure you that is one of the goals of this investigation
15 to wring out of what we've got as much corrective action and identify
16 as much as we can as to what brought this about and what has to be
17 done to prevent it from happening again.

18
19 **IMB**: It is my understanding that NRC is changing their ideas toward
20 control room operators, retraining program. Have they given any
21 thought at all to relieving CRO of a little bit of his responsibility
22 and putting two CROs at that panel rather than one. That's a hell of
23 a lot of responsibility to have up there. I sure wouldn't want it and
24 the way Unit 2's control room is for one man to operate that control
25 room that is a nightmare. The RPS cabinets are hid, you can't see

1 them, a lot of your primary instruments that you need are in the back
2 of the panel, you can't see them. Whoever engineered that job over
3 there well he has a lot to be desired.

4
5 MARSH: Marsh speaking, much of this is coming from the course of the
6 interviews and our investigation. Much of it will be addressed, not
7 only as it pertains to this plant but to the industry as a whole. No
8 other comments by anyone then the time then being 8:36 and reading 819
9 on the meter I will terminate the tape and o le again say thank you.

10
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