

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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In the Matter of:

IE TMI INVESTIGATION INTERVIEW

of Mr. Robert C. Twilley, Jr.
Nuclear Service Engineer

Trailer #203
NRC Investigation Site
TMI Nuclear Power Plant
Middletown, Pennsylvania

May 8, 1979
(Date of Interview)

June 29, 1979
(Date Transcript Typed)

186
(Tape Number(s))

NRC PERSONNEL:

Mr. James S. Creswell
Mr. Owen C. Shackleton

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1 SHACKLETON: This is an interview of Mr. Robert C. Twilley, Jr. Mr. Twilley
2 is presently a nuclear service engineer, Plant Performance Service Section
3 of the Babcock and Wilcox Corporation. The time of this interview is 4:40
4 p.m. EDT. May 8, 1979. This interview is taking place at the Babcock
5 and Wilcox Offices in Lynchburg, Virginia. Present to conduct this interview
6 from the U.S. Nuclear Regulatory Commission is Mr. James S. Creswell. Mr.
7 Creswell is presently a reactor inspector assigned to Region 3. My name is
8 Owen C. Shackleton. I am an investigator assigned to Region V. Just prior
9 to beginning this interview on the tape recording, I presented to Mr.
10 Twilley a two page document from the U.S. Nuclear Regulatory Commission,
11 which sets forth the purpose and scope of this investigation. It identifies
12 the authority of the U.S. Nuclear Regulatory Commission to conduct this
13 investigation and advises Mr. Twilley of his rights to refuse to be inter-
14 viewed or to submit a signed statement and his right to select someone of
15 his choice to be present for this interview. Mr. Twilley requested, and
16 present for this interview is, Mr. Byron D. Nelson. Mr. Nelson is the
17 Assistant Counsel for the Babcock and Wilcox Corporation for their Nuclear
18 Power Generation Division in Lynchburg, Virginia. On the second page of
19 this 2-page document are three questions that Mr. Twilley responded to in
20 writing, all in the affirmative. At this time, to make it a matter of
21 record on the tape, I'm going to ask Mr. Twilley to please respond to these
22 questions again orally. Mr. Twilley did you understand the contents of the
23 2-page document I am discussing?
24
25

1 TWILLEY: I did.

2
3 SHACKLETON: I'm sorry, would you repeat that please.

4
5 TWILLEY: I did.

6
7 SHACKLETON: Do we have your permission to tape this interview?

8
9 TWILLEY: Yes.

10
11 SHACKLETON: And would you like a copy of the tape?

12
13 TWILLEY: Yes, I would.

14
15 SHACKLETON: All right, sir, that will be provided at a later date. We'll
16 send it to you by mail. And now, Mr. Twilley, to assist those persons who
17 will be listening to this tape for the information that you are about to
18 provide to help us in this investigation, would you briefly give your
19 background as to your education, training, and experience in the nuclear
20 field?

21
22 TWILLEY: Yes I graduated in 1974 with a Bachelor's degree in nuclear
23 engineering from the University of Virginia. That summer I went to work
24 fulltime with Combustion Engineering as a field service engineer on the
25 startup of the Calvert Cliffs Nuclear Power Plant Unit No. 1. I remained

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1 with Combustion for approximately two and one half years, well into the
2 startup of Calvert Cliffs Unit 2, and during those two and half years I
3 provided a variety of services for them at other locations as well as
4 Calvert Cliffs. I was employed for approximately one year by Duke Power
5 Company at the Oconee Nuclear Station, where I served as a maintenance
6 engineer, and there had a variety of tasks also, the main one associated
7 with inservice inspection of the reactor vessel. In January of 1978 I came
8 to work with Babcock and Wilcox here in Lynchburg in my present position
9 and have served in that capacity to date.

10
11 SHACKLETON: Thank you very much. I will now turn the interview over to
12 Mr. Creswell.

13
14 CRESWELL: Mr. Twilley could you give us your job title?

15
16 TWILLEY: I'm a nuclear service engineer in the Plant Performance Services
17 section.

18
19 CRESWELL: And could you briefly describe what your responsibilities are in
20 that position?

21
22 TWILLEY: Our responsibilities vary with customer needs. We provide master
23 service capabilities to augment the customer's organization in times of
24 extra manpower needs in the areas of physics testing and plant startup
25 testing. We help to create and publish test specifications and physics

1 documents for customers on the reload startups. We follow the plants
2 through their operation to try and stay on top of what's going on. We
3 provide an analytical service to help people understand exactly what has
4 happened during transients or particular tests. I think that about does
5 it. We're also available for mechanical type work when you need the extra
6 hands.

7
8 CRESWELL: Bob, would you say that your specific area of expertise would be
9 more toward core physics, or do you consider that you have a specific area
10 of expertise?

11
12 TWILLEY: I would say basically the entire reactor coolant system...core
13 physics, thermal hydraulics and mechanics.

14
15 CRESWELL: Ok. In your capacity here at the nuclear power generation
16 division, who do you report to?

17
18 TWILLEY: I report directly to Frank Walters.

19
20 CRESWELL: And Mr. Walters' title is?

21
22 TWILLEY: He would be the Supervisor of the Operating Plants, Plant Performance
23 Services Section.
24
25

1 CRESWELL: Ok. Bob, I'd like to go back in time to the date of March 28,
2 1979., and to the time during that day that you first became aware of an
3 event that had occurred at the Three Mile Island Unit 2 facility. Do you
4 recall when you first heard about it?

5
6 TWILLEY: Yes, I arrive at work every morning right at about 8 o'clock.
7 And that morning as I arrived, my desk is just a few feet from Frank's. He
8 was putting together some material and he ask that I come along to Bill
9 Spangler's office, that they had had a transient at Three Mile Island. And
10 since I had followed a good part of the Three Mile Island Unit 2 startup
11 here from Lynchburg, he asked that I accompany him to Bill's office to help
12 get the details straight on this transient. And that was right about 8
13 a.m.

14
15 CRESWELL: Ok, now you said Frank, that would have been Frank Walters?

16
17 TWILLEY: Yes.

18
19 CRESWELL: Ok. Upon your arrival at Mr. Spangler's office with Frank
20 Walters, what was the nature of discussions that you had?

21
22 TWILLEY: Mr. Spangler informed us that they had had a transient at the
23 island, that the situation was fairly serious, but he was unable to provide
24 anything specific other than the fact, I believe he said that the reactor
25 coolant pumps were not run.

1 CRESWELL: How did that particular bit of information strike you? How did
2 you interpret that?

3
4 TWILLEY: I asked why they were not running, and the answer that I was
5 given was that they had been manually secured.

6
7 CRESWELL: Did that particular piece of information concern you?

8
9 TWILLEY: Yes.

10
11 CRESWELL: From what standpoint?

12
13 TWILLEY: I never like to hear the reactor coolant pumps are not running
14 unless its part of a planned event...by all my previous experience to date.

15
16 CRESWELL: The reactor pumps would be supplying force flow to the reactor
17 system and if you lost that force flow, what would your concern be?

18
19 TWILLEY: My concern would be that more force flow or force flow is better
20 than natural circulation.

21
22 CRESWELL: Did you ask whether they had natural circulation?

23
24 TWILLEY: No, I did not because I had been informed that all the informa-
25 tion that was available at that time had been given to us. And we were not
in direct communication with the site.

1 CRESWELL: So you didn't know whether natural circulation had been or had
2 not been established?

3
4 TWILLEY: I did not know anything other than the fact that the plant had
5 gone through a transient, that the reactor was shutdown, and that the
6 reactor coolant pumps were off.

7
8 CRESWELL: Ok. What happened then after you left? I'm assuming that this
9 terminated the conversation and you left Mr. Spangler's office.

10
11 TWILLEY: Well, we decided that there were a lot of people in this building
12 who should be aware of what information we did have. Everyone disbanded
13 there and agreed to meet in a very short period of time, I believe it was
14 down in training room D. So we gathered what notes and material we had and
15 headed down there.

16
17 CRESWELL: Ok. That was yourself, Mr Spangler, and Mr. Walters

18
19 TWILLEY: And everyone else who was in Bill Spangler's office at that time.

20
21 CRESWELL: Ok, approximately how many people were in Bill Spangler's office?

22
23 TWILLEY: Roughly a half dozen.
24
25

1 CRESWELL: Do you recollect who those people were?

2
3 TWILLEY: Don Hallman was there and I believe Lee Plotkey (phoenetic) was
4 there.

5
6 CRESWELL: When you arrived, they were there when you arrived with Mr.
7 Walters?

8
9 TWILLEY: No, we all got there about the same time.

10
11 CRESWELL: After you went down to training room B, what happens then?

12
13 TWILLEY: A lot of people showed up. I'd say there were roughly 35, 40
14 people in training room B. And Bill Spangler tried to brief the people
15 with the information that he had given us. And, of course, the usual
16 questions were generated, and unfortunatly there was no information available
17 to provide answers. And so they started to develop an action plan. What
18 questions did we want answered, and how should we go about getting the
19 answers.

20
21 CRESWELL: Was Mr. Spangler in charge of this meeting at this point in
22 time?

23
24 TWILLEY: More or less.
25

1 CRESWELL: Was there someone else there that seemed to share the responsi-
2 bility?

3
4 TWILLEY: Well, he had gotten the initial call and so he was more or less in
5 charge.

6
7 CRESWELL: Ok, what's the next thing that happens? Could you place in time
8 about, or approximately in time, when you were in the training room first?

9
10 TWILLEY: Oh, roughly 8:30. I'd say we were in there for about a half
11 hour.

12
13 CRESWELL: Ok, so after a half hour what happens?

14
15 TWILLEY: They had drawn up a list of questions that they would like to
16 have answers to. They had prioritized that list and they had decided that
17 we should send several people immediately to the site to help augment the
18 site force and obtain this information.

19
20 CRESWELL: Who made the decision as to who would go?

21
22 TWILLEY: Well, it was sort of a joint decision between several managers.

23
24 CRESWELL: What managers were in the room at that time, besides Mr. Spangler?
25

1 TWILLEY: Many. I couldn't tell you everyone, there were many. But it was
2 decided that Bob Winks and Joe Kelly and originally Frank Walters would go.
3 However, in a brief discussion we decided that Frank would probably be more
4 useful here in Lynchburg-number 1; and number 2-my site health physics was
5 up to date so I would have more than likely an easier time gaining access
6 to the site.

7
8 CRESWELL: Ok. So then the decision was made to substitute you for Mr.
9 Walters, based on those considerations.

10
11 TWILLEY: Yes.

12
13 CRESWELL: Going back to the training room, do you remember who the highest
14 level manager was in the room? Did you have like a vice president there?

15
16 TWILLEY: Well, people kept coming in the room at different times. When
17 the meeting started, I would say that Alan Womack was the highest level
18 manager there. By the time I left to get my belongings together and prepare
19 to leave town, Jim Deddens had come into the room.

20
21 CRESWELL: Okay. Were you aware of any communications from the site up
22 until this point of time? Any additional communications rather than the
23 initial call with Mr. Spangler received.
24
25

1 TWILLEY: No.

2
3 CRESWELL: So the decision was made to send three individuals, yourself
4 included, down there. So what's the next that happens?

5
6 TWILLEY: I went home and packed. I came back, got some travel money, the
7 usual things that you get when you go out on the road. Tried to throw into
8 my brief case any engineering paraphernalia that I thought would come in
9 handy--graph paper, a calculator, steam tables, pens, pencils straight
10 edge, the normal menagerie of things. I got myself under way, checked with
11 all of the reservations the secretaries had made--the normal things that
12 you do when you travel and only done in a very short period of time.

13
14 CRESWELL: About what time would you have left the office here?

15
16 TWILLEY: To go home or to go the airport?

17
18 CRESWELL: To go to the airport.

19
20 TWILLEY: To go the airport, I'd say I left here approximately 10:15.

21
22 CRESWELL: Okay. And about what time did you depart for, I'm assuming that
23 you went to the Lynchburg Airport?

1 TWILLEY: We left from Lynchburg Municipal Airport by charter aircraft. We
2 left there right at about 10:30.

3
4 CRESWELL: Okay. And you arrived in, what, at the Harrisburg?

5
6 TWILLEY: At the Harrisburg, at the private terminal at approximately
7 noontime. We proceeded from the terminal to the main terminal, where we
8 picked up our cars, rental cars, and from there we proceeded directly to
9 the motel, where we called into Lynchburg, as we had been instructed to do.

10
11 CRESWELL: And was this motel in Hershey?

12
13 TWILLEY: Hershey, yes.

14
15 CRESWELL: Okay, what happens next?

16
17 TWILLEY: I forget exactly who made the call to Lynchburg and exactly who
18 was called. At any rate, the instructions were to get in touch with Greg
19 Schaedel at his home, which we did, and Greg gave us directions to his
20 house, and we left immediately and drove over to Greg's home.

21
22 CRESWELL: Approximately what time would you of arrived at Greg's home?

23
24 TWILLEY: Right at about 1 PM.
25

1 CRESWELL: Upon arrival, what recollections do you have about your discussions
2 with Mr. Schaedel?

3
4 TWILLEY: We didn't get to discuss anything with him right away, I believe
5 he was on the phone when we came in. And I don't recall--there were a
6 series of phone calls, all day long. Sometimes between him and the site
7 and sometimes between him and Lynchburg, and I can not recall who was on
8 the phone with him at that particular time.

9
10 CRESWELL: Did Mr. Schaedel give you any kind of a briefing whenever you,
11 after he got off the telephone?

12
13 TWILLEY: Yes. He told us that they had tried to start a pump and that
14 they were only recording approximately a hundred amps when that pump was
15 running. I do not know whether it was at that time or sometime later, but I
16 remember being impressed by the fact that he said that Mr. Rogers was
17 speaking from the control room with a respirator on.

18
19 CRESWELL: What did the reactor coolant pump drawing only a hundred amps
20 mean to you?

21
22 TWILLEY: It meant that the pump was not pumping. It was either spinning
23 in air or one could assume that you had a uncoupled pump from the motor.
24
25

1 CRESWELL: What other information did he discuss with you?

2
3 TWILLEY: At that time, I do not recall exactly what he discussed, except
4 that they had tried to start a pump and that the indications were they were
5 unsuccessful in pumping fluid.

6
7 CRESWELL: Okay. Do you have any picture in you mind of what sort of core
8 conditions could have existed at this point in time?

9
10 TWILLEY: No. I did not perceive anything to be necessarily wrong at that
11 time with the core.

12
13 CRESWELL: Okay. Did you have any information about temperatures in the
14 primary system?

15
16 TWILLEY: Not until sometime later. The range of the hot leg RTD instru-
17 mentation is from 520 to 620 F and the calibration data on those RTDs, I
18 believe, ends right around there, but if you extrapolate the curve that
19 that data gives you, you can infer in temperatures, if you go in and read
20 the resistance. We were told from the site that they had gone in and done
21 that and come up with temperatures just slightly above 700 degrees fahrenheit.
22 My steam tables told me that at system pressure, that was super heated
23 steam. There was a great deal of discussion at that point as to whether or
24 not we could believe that instrumentation. Under years of experience of
25 "normal operating conditions" it sounds a bit incredulous.

1 CRESWELL: Did you believe it?

2

3 TWILLEY: Not at first, I did not.

4

5 CRESWELL: At that point in time, did you have--this is later that you got
6 the temperature data--remember I asked you before?

7

8 TWILLEY: It was the middle of the afternoon, roughly.

9

10 CRESWELL: Did you have any idea of what the conditions were in the reactor
11 coolant system? At this point in time did you have any information that
12 the pumps were drawing--that they were drawing a low current, a relatively
13 low current, and that there were indications of high temperatures in the
14 reactor coolant system?

15

16 TWILLEY: We put those two together and came up with a steam bubble but
17 still had a hard time believing it. Of course, those two things put together
18 made it sound more believable.

19

20 CRESWELL: And this is about the middle of the afternoon, somewhere around
21 two or three o'clock?

22

23 TWILLEY: Roughly, yes.

24

25

1 CRESWELL: Ok, with two pieces of information, you said that you would
2 suspect that there was a steam bubble in the primary coolant system?

3
4 TWILLEY: At least where the hot leg RTDs were.

5
6 CRESWELL: Ok.

7
8 TWILLEY: Which are very high up.

9
10 CRESWELL: This discussion-was it among the group? Was this communicated
11 to Lynchburg?

12
13 TWILLEY: He would get the information from the site and he would relay it
14 to us as quickly and briefly as he could, and then he would immediately
15 call Lynchburg and relay it them. So our discussion between the three or
16 four of us at his house was more than likely identical to what would go on
17 down here when they got the same information.

18
19 CRESWELL: Did you...did anyone...its my understand that Mr. Shadel was the
20 one that communicated both with Mr. Rogers and with Lynchburg...is that
21 correct?

22
23 TWILLEY: Yes.
24
25

1 CRESWELL: Ok. Did he mention to Lynchburg that there was a possibility of
2 a steam bubble in the primary coolant system, at this time or his next
3 communication with Lynchburg?
4

5 TWILLEY: Well, he relayed to them what the steam tables told us, and that
6 was that that indicated super heated steam under a normal pressure condition
7 in the primary coolant. The indication of temperature under an assumed
8 pressure indicates super heated steam, but we did not assume that there was
9 a bubble there.
10

11 CRESWELL: But that's what would have been indicated.
12

13 TWILLEY: A super heated steam bubble.
14

15 CRESWELL: Do you recall any recommendations being given to Mr. Rogers by
16 Mr. Shadel?
17

18 TWILLEY: I believe that someone reiterated the fact that we should try and
19 get a reactor coolant pump going, and the fact that had tried and had drawn
20 a very low current on the motor was reiterated.
21

22 CRESWELL: Was there any discussion about increasing system pressure?
23

24 TWILLEY: I don't recall.
25

1 CRESWELL: Do you recall any discussions about...?

2
3 TWILLEY: I believe that I recall them telling us that they had no pressurizer
4 heaters.

5
6 CRESWELL: What was the significance of that information?

7
8 TWILLEY: that you could not pressurize without heaters?

9
10 CRESWELL: Ok. Was there any discussions about establishing high pressure
11 injection flow, and at any....

12
13 TWILLEY: There was some discussion about high pressure injection flow but
14 I was not a party to it.

15
16 CRESWELL: You overheard it or you learned about it later?

17
18 TWILLEY: Right.

19
20 CRESWELL: Who did you learn it from?

21
22 TWILLEY: The other eople there were discussing it, and I don't recall the
23 times or the values.
24
25

1 CRESWELL: That was in Mr. Schaedel's residence, that would have been Mr.
2 Winks and Mr. Kelly that would have been discussing it?

3
4 TWILLEY: Yes.

5
6 CRESWELL: Ok, what's the next thing that happens--we're around what, two...between
7 two and three o'clock in the afternoon?

8
9 TWILLEY: Later than that, probably three to four. Several calls, like I
10 say, went back and forth. I really don't recall anything too specific
11 about that time right now. We were essentially out of the communication
12 path. We could not get on the site. We were told that the site had been
13 secured. And we were more or less bystanders at that point, there ready to
14 help out, waiting instructions.

15
16 CRESWELL: What is the next event that you recollect that happened of
17 significance?

18
19 TWILLEY: Dinner.

20
21 CRESWELL: Dinner? (laughter)

22
23 TWILLEY: We decided to go get a bite to eat and I honestly can't recall
24 whether or not they had gotten a pump running at that point in time. I
25 believe that they had not. We decided to go eat. I didn't want to put a

1 burden on Greg's wife and there was a restaurant not too far away so we
2 went out and grabbed some dinner and came back...

3
4 CRESWELL: Where did you eat--incidentally, do you recall?

5
6 TWILLEY: Beefsteak Charlies.

7
8 CRESWELL: Ok.

9
10 TWILLEY: I believe we made it a point to catch some news before we took
11 off...to see what the media was saying because when we arrived at the
12 airport at noontime NBC news was already there. The complete crew. We
13 came back from dinner and it was, I believe--this is just my vague re-
14 collection, but it was sometime right about the time we returned from
15 dinner that they got a reactor coolant pump running and had indications
16 that they were pumping fluid.

17
18 CRESWELL: Ok. And that information would have come from Mr. Rogers to Mr.
19 Shadel. Ok.

20
21 TWILLEY: That was the communication path all day long, other than our
22 brief conversation at the motel where we received instruction to go over to
23 Greg's house.

1 CRESWELL: When did you gain access to the site?

2
3 TWILLEY: I, myself, did not gain access to the site until the following
4 evening. That's the 29th, Thursday. We left Greg's house, oh, somewhere
5 between 9 and 10 p.m., went back to the hotel and went to bed, and I remember
6 very early in the morning--we had agreed that we would meet back at Greg's
7 house at around 8 o'clock the next morning. And I guess it was around 5:30
8 or 6:00 o'clock in the morning Bob Winks knocked on the door and he needed
9 some of the supplies that I had brought, and he said that he had been given
10 instructions to go to the site and he was on his way. I gave him the keys
11 to the car and he took off. Joe Kelly and I got up and had breakfast.
12 Then sometime later, went over to Greg's house and Greg's wife was there.
13 Greg had gone sometime early in the morning himself, and we could not get
14 ahold of anyone who could really tell us what to do so we decided to go to
15 the visitor's center, since Greg's wife had told the other B&W site personnel
16 to go there. And we spent the entire morning at the visitor's center and
17 we were not allowed inside the Center. We were not able to get in touch
18 with any of our people on the island. We were not able to get in touch
19 with any Met Ed people at the Center who were in charge and we really were
20 lacking direction. We made one phone call from a pay phone to Lynchburg
21 and they were unable to help us also in gaining access to the site. Finally
22 we went out to get some lunch and we came back, and finally sometime in the
23 early afternoon--I guess it was around 1:30 or 2:00--John Flint, who I
24 understand had been on the island, came over and told us that we were going
25 to set up immediately, rotating twelve hour shifts and that I was to be in

1 at 8 that evening. So I immediately went back to the motel tried to get
2 some sleep and reported for work at 8 o'clock that night.

3
4 CRESWELL: I'd like to go back early in the morning of the 28th before you
5 left Lynchburg. Were you aware of any information that was being supplied
6 by Mr. Floyd of the Metropolitan Edison staff to the Lynchburg staff here?

7
8 TWILLEY: No I was not.

9
10 CRESWELL: Ok. At this point in time I'd like to ask you if you had comments
11 that you'd like to make.

12
13 TWILLEY: No.

14
15 CRESWELL: At this time I'll turn the interview back over to Owen for
16 further questions or to terminate the interview.

17
18 SHACKLETON: Thank you. Bob, when you went on site at 8 o'clock in the
19 night, was it the 29th?

20
21 TWILLEY: Yes.

22
23 SHACKLETON: What conditions did you find...you were in the control room,
24 would that be correct?
25

1 TWILLEY: No, I did not get up to the control room until the following
2 evening.

3
4 SHACKLETON: What was your station assignment the first evening?

5
6 TWILLEY: I manned the telecopier the first evening, to try and keep the
7 information flow going back and forth.

8
9 SHACKLETON: Where is the telecopier located, Bob?

10
11 TWILLEY: Lee Rogers had brought a telecopier from his office to the superin-
12 tendent's conference room, which is in sort of a control center, the entrance
13 to the plant, the first strong security checkpoint just prior to the admini-
14 stration building.

15
16 SHACKLETON: So on the night of the 30th is when you first went into the
17 control room for Unit 2? Is that correct?

18
19 TWILLEY: Right.

20
21 SHACKLETON: Could you briefly, tell us what you found when you came onboard
22 at 8 o'clock in the night of the 30th in the control room as to the number
23 of people that were present?
24
25

1 TWILLEY: Too many, in my opinion. That's strictly an opinion after working
2 in control rooms since I was...In my summers in college I worked for a
3 utility, and I've been around control rooms ever since. The noise level
4 was very high. I remember at one point several nights later it had reached
5 a point where a shift supervisor had to literally shout in order to get
6 people to tone it down because his men were having to shout back and forth
7 to one another across the board. One of my main duties was to get infor-
8 mation to Lynchburg, answer questions, provide plant data. I saw it as my
9 first major task in the control room to sort of organize the data flow--the
10 plant parameters that really needed to be monitored on a consistent basis,
11 continuous basis. And once we got that set up, my job got a little bit
12 easier. There was a table right near us with NRC personnel. We had a
13 phone over in the corner next to a xerox machine and some NRC people, and
14 in order to get from our phone to the boards to get information, we had to
15 pass all these people and all this noise. And it was hectic. It was hard
16 to hear on the telephone. It was hard to think.

17 SHACKLETON: Do you have any idea how many people--what would be your
18 ballpark guess--were present?

19
20 TWILLEY: In the entire control Room?

21
22 SHACKLETON: Right.
23
24
25

1 TWILLEY: Well, the entire control room at Three Mile Island includes sort
2 of a hallway behind the boards, which really does not interfere with the
3 control room activity. It includes entrances to offices and a restroom on
4 one side, which does not interfere, and it includes a shift supervisor's
5 sort of sound proof air conditioned office right off the main control room,
6 which if the people in there remain in there, does not interfere. I think
7 it would be more significant to estimate the number of people in the main
8 horseshoe around the main boards. Normally that would be a handful of
9 people--shift supervisor, senior control room operator, senior reactor
10 operator. two, three others maybe half a dozen people at the most. On this
11 night there were probably, I'd say between two and three dozen people in
12 that area above, and that doesn't include the peripheral areas or the shift
13 supervisor's office.

14
15 SHACKLETON: When you came on site, Bob, did you go on the north bridge or
16 the south bridge?

17
18 TWILLEY: The first few nights we were coming on the north bridge, which is
19 the paved concrete bridge.

20
21 SHACKLETON: Were there any security officers present?

22
23 TWILLEY: Yes, we had to check in there. That was the security checkpoint.
24
25

1 SHACKLETON: Once you got beyond that point and you came onto the site, were
2 there any other security officers that checked your identification before
3 you went into the facility?

4
5 TWILLEY: No.

6
7 SHACKLETON: The building, not facility.

8
9 TWILLEY: Not the first few nights. In fact, the first few nights there was
10 hardly anybody coming on. The number of people riding the bus back and
11 forth at 8:00 in the evening anyway, was maybe only a half a dozen people
12 total, and that may have been an odd shift change time, but the rest of the
13 facility seemed pretty well deserted.

14
15 SHACKLETON: How about dosimeters and TLDs, were you provided with these by
16 Met Ed?

17
18 TWILLEY: Yes, we always had personnel dosimetry. We always had TLDs and a
19 self reader. We always had our badges displayed and we were always checked.
20 But for the first four or five nights, the procedure for picking up your
21 badge, picking up your dosimetry, checking with health physics and checking
22 with security, was different. And I remember there were substantial delays
23 in the morning shift change. We would work from 8 p.m. to 8 a.m. and
24 typically our shift relief would not arrive where we were until 9:30,
25 sometimes 10:00, because they would decide, for whatever reason, during the

1 middle of the night that they needed a new system to keep track of people.
2 They would tell us what the system was, and that night we'd come in and it
3 would go pretty smoothly, going through all the different checkpoints to
4 get in, but by the next morning when they came it had changed again.

5
6 SHACKLETON: Bob, one thing that has come up, and I don't know whether you
7 may have heard any discussion or not, but I'd appreciate your comments
8 regarding the transient and the causes. There have been some gossip, as
9 there is much on this type of an incident, of a possibility of sabotage.
10 Did you ever hear any comments of this concern at all from anyone?

11
12 TWILLEY: I heard them. Probably the same that you've heard. The same
13 gossip.

14
15 SHACKLETON: But no one ever gave you any details or any ideas?

16
17 TWILLEY: No.

18
19 SHACKLETON: I have no further questions, Jim. We'll now discontinue and
20 bring this interview to a close. The time is now 5:23 p.m. Eastern Daylight
21 Time, May 8, 1979.
22
23
24
25