

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

1 In the Matter of:

2 IE TMI INVESTIGATION INTERVIEW

3 of Mr. Thomas L. Mulleavy
4 Radiation Protection
5 Supervisor

6
7
8
9 Trailer #203
10 NRC Investigation Site
11 TMI Nuclear Power Plant
12 Middletown, Pennsylvania

13 April 24, 1979

14 (Date of Interview)

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18 (Tape Number(s))

19
20
21 NRC PERSONNEL:

22 Dale E. Donaldson
23 Thomas H. Essig
24 Bob Marsh

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1 MARSH: The date is April 24. The time is 11:35 p.m. This is Bob Marsh
2 speaking. I am an investigator with the U.S. NRC assigned to Region 3
3 office out of Chicago, Illinois. We are currently at the Three Mile Island
4 site and we are about to commence an interview of Mr. Thomas Mulleavy.
5 Before we start I would like the other two individuals at the table here to
6 introduce themselves. If you would, gentlemen, spell your last name, and
7 give your job title, and then, Tom, I would like you to do the same thing
8 if you would. Then at that point I have got some comments on the letter
9 then we will begin.

10
11 DONALDSON: Dale E. Donaldson, Radiation Specialist, U.S. NRC, Region 1

12
13 ESSIG: Thomas H. Essig, Chief in the Environmental and Special Project
14 Section, U.S. NRC, Region 3

15 MULLEAVY: Thomas L. Mulleavy, Radiation Protection Supervisor with Metro-
16 politan Edison.

17
18 MARSH: I thank you. Tom, if I may, or if you prefer, Mr. Mulleavy, before
19 we turned the tape on, I have given you a two page memo and asked you to
20 look it over, and there were one or two questions at the end of that memo
21 which I do want to put on as a record. The memo itself addresses, as you
22 have read, the purpose of the investigation and some of the ground rules
23 that we have read it into the record, and instead of reading them in I have
24 asked you to look at the note; and to ease the transcript work, what we are
25 going to do is have this typed directly into transcript at this point. At

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1 MULLEAVY: No, I understand the question and I have chosen not to have
2 someone present with me.

3
4 MARSH: Fine, should you feel at any time that you would rather have someone
5 come in with you just indicate, so that we will be glad to get someone in
6 here.

7
8 MULLEAVY: Yes sir.

9
10 MARSH: OK, at that point I would like to turn it over to Dale. I think if
11 things go as they have been going, we would like to get a little bit into
12 your background.

13
14 DONALDSON: First I guess I will start by thanking you for taking your time
15 after your work day to speak with us, and I guess we will get right in to
16 it by having you just give us a little bit of your background and experience
17 in the nuclear field if you would.

18
19 MULLEAVY: Well, I began back in the early 60's on the NS Savannah project,
20 the first nuclear power merchant ship built at New York Shipbuilding in
21 Camden, New Jersey. From there, after spending six years with that parti-
22 cular project I moved down to the Naval Nuclear Program with New York
23 Shipbuilding. I spent three years in that particular project then moved to
24 Connecticut Yankee Atomic Power spent 8 years there, and joined this company
25 5 years ago.

1 DONALDSON: Thank you. In your current position with Metropolitan Edison
2 as the radiation protection foreman, who is your immediate supervisor?

3
4 MULLEAVY: Dick Dubiel.

5
6 DONALDSON: Would you please describe the individuals or organizations who
7 report to you in the line organization?

8
9 MULLEAVY: As we said mentioned Dick Dubiel is my supervisor, then I am the
10 Radiation Protection Supervisor then I have four foremen who report to me.
11 They are radiation protection foremen we primarily had two in Unit 2, two
12 in Unit 1 and 22 now technicians that we have.

13
14 DONALDSON: If you would describe any involvement you may have had in any
15 of the emergency planning activities or the development of any of the
16 radiation protection or environmental monitoring programs at the Three Mile
17 Island station.

18
19 MULLEAVY: As far as the development in the environmental monitoring programs,
20 no, that is handled out of the Reading Office and was well established
21 before I joined the company. My involvement is merely on a weekly basis to
22 see that the technicians do go out through the foreman. We send the techni-
23 cians out, we receive the results back from Teledyne and those are then
24 sent by me onto the Reading Office after our review. The emergency plan I
25 have been involved in through the five years I have been here, in altering

1 MULLEAVY: The morning of the 28, I was called at 7:00 a.m., by one of our
2 technicians who stated on the phone that there had been a problem at the
3 Island and that Dick Dubiel wanted me there right away. I dressed and got
4 ready and I guess I arrived at the plant site at 25 or 20 of eight. I went
5 to the office and there was no one there, so I went directly to the lab. I
6 found the ECS had already been established and took over the ECS as it had
7 been directed in training sessions that we do so. We began to establish
8 our communications, our communications had already been established with
9 the control rooms, Unit 1 and Unit 2. We had set up the "squawk" box
10 between the offsite teams, the one that was going to be used for the offsite
11 teams. I tried to call over to Unit 2 to Dick Dubiel to see what was going
12 on and I did not receive a pass through the gate tronic system to get over
13 to Unit 2. So really, right away I did not know what had happened. It had
14 crossed my mind that this was a drill. I did not know for sure it was real
15 when I first went into the plant. But I was... (in driving through the
16 North Gate, they waved me right through), did not see steam coming from
17 Unit 2's towers so I knew that..., it had crossed my mind that it was a
18 drill when I first came in, because we had jokingly said to Len Landry a
19 couple of days prior to that and he had said we really should have a drill
20 unannounced just for practice. So I thought it might possibly have been a
21 drill. However, when I arrived in the HP control point which we had estab-
22 lished in the ECS it was already in force and by the tone that was there I
23 realized, no, it was not a drill, it was an actual... something had happened.
24 Although no one there could tell me exactly what had happened. So going
25 back I tried to call Dick Dubiel in Unit 2's control room and, no, we could

1 not reach him, he would not respond or could not at the time I guess. So
2 we went ahead and began to establish our different teams and wrote them
3 down on the board and so forth and got that squared away. I can't tell you
4 the exact time it was reported that we started to have some problems at the
5 ECS. The radiation levels were going up; we noted that the monitors, the
6 personnel monitors devices there that we had for contamination control such
7 as the portal monitor, and the hand and foot monitor, began to go off so
8 we instructed a couple of individuals to take some surveys around the area
9 and there was some confusion as to whether there were radiation levels,
10 where they were coming from, and whether we had an airborne problem. They
11 started taking some air samples, at our direction to do so and before those
12 air samples were finished it was reported that we had somewhere I believe
13 something like 50 mr per hour from the hallway, coming from the ECS. I
14 then directed individuals and told them that we would have to get ready for
15 an evacuation of the ECS that they were to report to the Unit 2 control
16 room where we would set up our secondary ECS. I am not sure of the time
17 when we actually evacuated. It was due to a radiation level and we just
18 were not sure where it was coming from. It looked as though it was coming
19 from the sample room (which is right behind the wall that runs along the
20 ECS). We evacuated everybody and told them to report via the turbine hall
21 to Unit 2's control room. I waited for everybody to leave there. Bob
22 McCann was one of the last to leave, and a couple of technicians. They set
23 up residence at the entrance way from the control tower, Unit 1's control
24 tower to the entrance to the ECS. Their instructions by me, from me, were
25 to prevent anyone from entering that particular area and monitor that

1 particular doorway to see how, if the levels were to continue to go up and
2 trying to determine just what was happening there. We then went to the
3 control room, Unit 2, where I did have visual and verbal contact with Dick
4 Dubiel because he was there. He began to fill me in on little bits and
5 pieces of what he felt was happening. From Unit 2's control room we began
6 to dispense our teams and to start onsite/offsite teams and start into the
7 full scale investigation of on and offsite radiation levels, picking up the
8 kits and so forth from the processing center. The teams were ready. We
9 got cars and trucks and so forth ready to go and then they awaited further
10 instructions. From that particular point, it was a routine. I will say,
11 although, at the time that we had practiced these particular drills during
12 our last session and... it was Len Landry's idea to do so... we had practiced
13 evacuation of the ECS and gone to the control room. That helped this time,
14 because in actuality we had to do that. So it was not foreign to us to
15 have to set up a residence in Unit 2's control room. So through drills
16 taking some off beat situations, it looks like an off beat situation did
17 happen. We were prepared for that particular evacuation from our normal
18 ECS to set up Unit 2's ECS and that was part of the drill session we had
19 prior to this. So going up to Unit 2 then we did begin to dispense indivi-
20 duals. It was easier that way because we could communicate direct then,
21 had visual contact with Unit 2's control room, and could see what was
22 happening and what their needs were rather than wait for communications to
23 happen, because they normally would do this from this set up of our ECS
24 from Unit 1. At that particular time it seemed to go on and on, surprise
25 after surprise, of different areas that had to be monitored. The wind

1 seemed to shift back on us, it did not establish a plume as we had normally
2 thought it would because the wind was so calm. It seemed to come back on
3 us repeatedly, and it was a long day.

4
5 DONALDSON: All right. Let me back up and ask a few questions regarding
6 your arrival at the ECS, which means the Emergency Control Station, right?

7
8 MULLEAVY: Correct.

9
10 DONALDSON: Your arrival time at approximately 07:35, what other individuals
11 were present in the ECS?

12
13 MULLEAVY: Fred Huwe was there, Joe Deman was there. I believe Mike Benson,
14 Dick Bensil, technicians, I can't tell you exactly right now what all the
15 technicians or who all the technicians were that were there. We had auxiliary
16 operators. The, I can't remember right off hand right now what we had for
17 emergency rescue team, although I know before we left we did have individuals
18 there who were going to take the emergency rescue team I can't remember the
19 names at the moment, and who they were, although the emergency rescue team
20 was established before we left the control station. I do recall, I believe,
21 Hilary Mitchell was there and I can't remember anyone else.

22
23 DONALDSON: I have a copy of an organizational chart out of the emergency
24 procedures and what I would like to do is try to fill in some of the people
25 who were in these various positions if you can help do that. Why don't we

1 take a look at the repair party team. Was that formed by the time you had
2 arrived?

3
4 MULLEAVY: I believe there was an individual there, whether it be Hilary
5 Mitchell, I am not sure, but there was an individual there. The names had
6 not been put on the board as far as the team being a functioning team. Not
7 at that time that I had arrived.

8
9 DONALDSON: Was it formed subsequently?

10
11 MULLEAVY: Yes, it was.

12
13 DONALDSON: Who headed that team?

14
15 MULLEAVY: I believe it was Hilary Mitchell.

16
17 DONALDSON: Is he normally the supervisor of maintenance or what is his
18 normal title?

19
20 MULLEAVY: He is electrical supervisor.

21
22 DONALDSON: Would he be a normal individual who would head up the repair
23 party team?

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1 MULLEAVY: Not normally, no.

2
3 DONALDSON: Is he one of the alternates?

4
5 MULLEAVY: He could be an alternate, yes, because he is in the maintenance
6 crew.

7
8 DONALDSON: Did he have anyone else on the team with him?

9
10 MULLEAVY: When he arrived in the control room, Unit 2, I believe Dan
11 Shovlin.

12
13 DONALDSON: Looking down, do you recall whether or not--I believe the title
14 chemical supervisor is now a defunct title now, is it not?

15
16 MULLEAVY: We do not have a chemical supervisor. We now have a Chemical
17 Foreman.

18
19 DONALDSON: Who according to this organization was filling the position
20 which was formally designated as Chemical Supervisor?

21
22 MULLEAVY: Gary Reed.

23
24 DONALDSON: Mr. Reed was here and available?

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1 MULLEAVY: He is the chemistry foreman.

2
3 DONALDSON: In relation to the various monitoring teams that are called for
4 by the emergency plan, how many onsite monitoring teams did you initially
5 dispatch?

6
7 MULLEAVY: We dispatched one.

8
9 DONALDSON: Do you recall the individuals who were on that team?

10
11 MULLEAVY: I am sorry, I can't do that now.

12
13 DONALDSON: How about, how many offsite teams did you send?

14
15 MULLEAVY: Two.

16
17 DONALDSON: Do you recall any individuals who were on those teams?

18
19 MULLEAVY: No, I can not give you that.

20
21 DONALDSON: Was an assembly area monitor designated?

22
23 MULLEAVY: Yes, there was an individual sent to the assembly area when we
24 started to see our levels go up. That was probably about 8:30.

25

1 DONALDSON: Do you happen to know who that individual was?

2
3 MULLEAVY: No.

4
5 DONALDSON: Were gate monitors dispatched?

6
7 MULLEAVY: Not at the moment, no.

8
9 DONALDSON: How about an ECS monitor?

10
11 MULLEAVY: Yes.

12
13 DONALDSON: Do you recall who that might have been?

14
15 MULLEAVY: No I don't.

16
17 DONALDSON: Did you assign a monitor to the repair party?

18
19 MULLEAVY: No, not at the moment.

20
21 DONALDSON: How about wash down area monitors?

22
23 MULLEAVY: No, they were not established at that point.

1 DONALDSON: Was a liquid release monitor established?

2
3 MULLEAVY: No.

4
5 DONALDSON: I see here now that... Were any initial in-plant surveys
6 conducted at the time you either had arrived, or prior to the time you had
7 arrived at the ECS, or shortly after your arrival?

8
9 MULLEAVY: We conducted the survey out in the aux bldg and down through the
10 fuel handling area, just to see where we began to find that our levels were
11 going up. We tried out there to see if that was coming from there, then we
12 came down through our own auxiliary building and then down through the fuel
13 handling area and out into our own ECS.

14
15 DONALDSON: Do you recall who performed that survey?

16
17 MULLEAVY: I believe it was Tom--well I am not sure. I am not sure whether
18 it was Mike Janouski was there--it may have been Mike Janouski, I can't be
19 sure who it was.

20
21 DONALDSON: We are through the point to where you have relocated the ECS to
22 the Unit 2 control room. Characterize the scene in the control room upon
23 your arrival to assume your duties at that location.

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1 MULLEAVY: It was very crowded when we arrived up there.

2
3 DONALDSON: Approximately how many people were in the control room.

4
5 MULLEAVY: Probably when we arrived with our group, I would say probably
6 40-50.

7
8 DONALDSON: From your experience in drills run in the past

9
10 MULLEAVY: It was exactly like the same thing when we when up there from
11 our last drill. A crowded situation. We kept all the auxiliary operators
12 our own team off to one side to the old shift supervisor's office area to
13 keep them out of the center portion of the area and away, and then of
14 course the groups kind of migrated together. We had to keep keeping them
15 apart so that we did not fill the control room with unnecessary personnel.

16
17 DONALDSON: Did you have, or could you observe the operator control area in
18 front of the control panels location?

19
20 MULLEAVY: Yes I could.

21
22 DONALDSON: Approximately how many people were frequenting that area?

23
24 MULLEAVY: I would say probably 20.

1 DONALDSON: What would be the normal complement of operations personnel?

2
3 MULLEAVY: About four.

4
5 DONALDSON: Can you form an opinion about whether or not the area was
6 perhaps too crowded, or the necessity for all those people in the operator
7 control room?

8
9 MULLEAVY: I am sure there was not a necessity for all those individuals.
10 They were behind the line. They were just in front of the panel, those
11 operators that were necessary to be there, I assume. The area in front of
12 the ship supervisor's office was crowded. It was difficult to get through
13 at times. I would say it was crowded.

14
15 DONALDSON: Was it apparent who was performing the duty of the emergency
16 director at the time?

17
18 MULLEAVY: No, I don't believe it was apparent to me. Of course my relation-
19 ship not to the emergency duty officer, but to Dick Dubiel, was foremost in
20 my mind.

21
22 DONALDSON: Where were you located in proximity to Mr. Dubiel's station.

23
24 MULLEAVY: Probably about 20-30 feet away.

25

1 DONALDSON: Was he on the other side of the room?

2
3 MULLEAVY: He was in the middle of the room, I was to the left as you face
4 the panel.

5
6 DONALDSON: From your work station in the control room, were you able to
7 see the area radiation monitor panels?

8
9 MULLEAVY: No.

10
11 DONALDSON: Did you go to those panels at all and survey the various alarms
12 and readings on those monitors?

13
14 MULLEAVY: No, I did not. Because under normal circumstances I would not
15 be in that particular area, so therefore, I would not have those to avail
16 myself. So, therefore, I did not at that particular time. My main duty
17 was to get the teams out and to take care of those team.

18
19 DONALDSON: From talking to a number of people, I believe at approximately
20 this time there were a number of areas in-plant that began to exhibit
21 increasing radiation levels.

22
23 MULLEAVY: Yes, they did.

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25

1 DONALDSON: I also note from looking at the emergency organization chart
2 that for all of the teams formed, there is not an in-plant survey team that
3 is formed.

4
5 MULLEAVY: No, not for normal circumstances.

6
7 DONALDSON: Did you form one?

8
9 MULLEAVY: Did we form one? Yes, we did.

10
11 DONALDSON: Do you feel this is something that should be considered in a
12 normal organization?

13
14 MULLEAVY: Yes, I do.

15
16 DONALDSON: So, this sort of fell out as a normal requirement to be placed
17 upon this.

18
19 MULLEAVY: That is true. It happened under these circumstances that an
20 onsite team--when we speak of onsite team I think of an individual as it
21 normally means in our emergency plan, is that that onsite team goes outside
22 the buildings. There is not a provision made for an inside-the-building
23 team. Your question was--yes, I believe there should be one formed.

1 DONALDSON: I would like to have you address another aspect, and I think
2 this is perhaps something I have picked up talking to a number of other
3 people also. Under the conditions that you are operating, there appeared
4 to be a need for the establishment of health physics controls and to re-
5 establish health physics controls almost at the outset, and there also
6 appeared to be a need for continuity of plant chemistry functions. Is this
7 a correct perception on my part?

8
9 MULLEAVY: I am not quite sure I understand what you are saying.

10
11 DONALDSON: Okay, let me try to rephrase it. Initially, there were some
12 in-plant surveys conducted in order to ascertain the degree of the hazard
13 in the plant.

14
15 MULLEAVY: Okay.

16
17 DONALDSON: As the situation developed did you find that there were additional
18 requests for in-plant surveys of various areas?

19
20 MULLEAVY: Yes, there were.

21
22 DONALDSON: Did you receive any requests for water, liquid, any kind of
23 effluent samples, in the first few hours?

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1 MULLEAVY: No.

2
3 DONALDSON: RCS letdown samples? Makeup tanks?

4
5 MULLEAVY: No, I did not.

6
7 DONALDSON: After your arrival?

8
9 MULLEAVY: No.

10
11 DONALDSON: Were you aware that any such requests had been made?

12
13 MULLEAVY: No.

14
15 DONALDSON: All right, why don't you pick up from 8:30, 9:00 when the next
16 event of significance occurred and take it through the rest of the day.

17
18 MULLEAVY: Well, we continued on that way rallying to each different area
19 as it showed up, still wondering what was going on. I did not ever really
20 fully understand the situation and I am not sure many did. We did as we
21 were directed to do to send teams to various locations. We had more teams
22 than we normally would have ever experienced during a drill such as many
23 onsite teams formed. I believe at one point we had four groups of individuals
24 moving around the outside of buildings, scanning back and forth, mostly on
25 the West side going from North to South; another group coming around the

1 North gate area; another group scanning around the GE locations out on the
2 East side of the fence, Northeast side of the fence; another group going
3 around South. We were constantly feeding numbers back and forth. We had a
4 few instruments that malfunctioned and had to get them replaced. We were
5 busy with the monitoring team so therefore not many additional requests
6 were made to take inside plant samples, to get inside surveys. The actual
7 survey taken of the aux building inside I was unaware of, and I am not sure
8 when that was done, and I believe Mr. Huwe and Mike Janouski took that
9 survey. I was unaware of that particular survey having been taken. It was
10 recorded later on that their survey was done in the auxiliary building.

11
12 MARSH: I think we are at a break point here I want to change tapes. The
13 time is now 12:05. April 25, 1978. I am going to break at this point and
14 turn the tapes over.

15
16 MARSH: Time 12:05 a.m., 4/25/79, this is Bob Marsh. Same people still
17 present. We will continue.

18
19 DONALDSON: We were talking about continued dispatch. I guess this is sort
20 of pretty much what you were doing the rest of the day.

21
22 MULLEAVY: We were doing it most of the day and it was puzzling because the
23 readings were up in areas, they were back down again. We would go back to
24 resurvey, and they would be up. The main question was: What was really
25 happening and what was going on?

1 DONALDSON: By what is happening and what is going on, do you mean what is
2 the source of the activity? Where is it coming from?

3
4 MULLEAVY: Was it coming from the stack, was it coming from the auxiliary
5 building? Just where is the source?

6
7 DONALDSON: What were some of the ideas that were discussed and evaluated
8 during this period of time?

9
10 MULLEAVY: The reasoning to us, the idea to us, was that it was coming from
11 the stack and it could have also been coming directly around and out of the
12 buildings. We did not really know for sure, and then we were told later on
13 in the afternoon that it was indeed coming from the stack. We did not know
14 why it was still coming out of the stack: Was the source not able to be
15 shut off, was its valves that had to be closed, or just what the deal was.
16 I was unaware that there was a bunch of water in the auxiliary building--
17 that was actually coming from the auxiliary building. We did not know if
18 it was a reactor building, auxiliary building--just what the source was.

19
20 DONALDSON: You mentioned the water in the auxiliary building. Would you
21 expand on that a little bit to discuss where this water was located and the
22 ventilation path that would carry it out the plant's stack.

23
24 MULLEAVY: Well, it would be through the aux. bldg ventilation that the
25 activity was coming out. I understand the water was, and we were told

1 later in the afternoon--I did not go inside the building and at that parti-
2 cular time and take any surveys. We were told later on that, yes, indeed
3 there was water covering the 281 elevation of the auxiliary building. We
4 were told later on that, yes, indeed there was water covering the 281
5 elevation of the auxiliary building and that is where we were getting this
6 activity from. It was believed that this was the source of the activity.
7 It was coming through the auxiliary building ventilation system.

8
9 DONALDSON: In the morning between the hours of say 9-11, did you notice
10 any increase in the air activity in the Unit 2 control room.

11
12 MULLEAVY: Yes.

13
14 DONALDSON: Approximately what time did this occur?

15
16 MULLEAVY: Oh, I am trying to think to myself right now, because I did
17 leave the Unit 2 control room and go to Unit one, and direct the activities
18 of the teams from Unit 1, and Dick (Dubiel) would handle Unit 2. So,
19 therefore, I believe before I left--and I think it was around noon time--
20 that I was asked to go back over to Unit 1 and direct the activities of the
21 offsite teams and onsite teams from the Unit 1 control rooms.

22
23 DONALDSON: You were asked by Dick?

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25

1 MULLEAVY: Right.

2
3 DONALDSON: At any time when you were in the Unit 2 control room

4
5 MULLEAVY: I did not answer your question, however. I do believe it was
6 shortly before that we did experience some monitor increase in the control
7 room monitoring but there was no problem while I was there, in actual
8 wearing respirators. When I went to Unit 1's control room, then we did see
9 and experience some difficulty in the air.

10
11 DONALDSON: Clarify something for me. During the normal operator actions
12 in response to the situation where you have the general emergency or site
13 emergency, is the control room manually put to recirculation?

14
15 MULLEAVY: Yes, it is.

16
17 DONALDSON: So the Unit 2 control room at some time earlier in the day
18 should have been put on recirculation?

19
20 MULLEAVY: Manual circulation, I cannot tell you when that was.

21
22 DONALDSON: So, when you saw activity increasing in the Unit 2 control
23 room, was there any conjecture as to where it would have come from?
24

1 MULLEAVY: No, no there was not. It was not at that particular time.
2 Although it was questioned "Are we on recirc?" and the answer was "Yes,
3 they were."

4
5 DONALDSON: Over on the Unit 1 side you mentioned also that some increased
6 activity was experienced there also.

7
8 MULLEAVY: Yes.

9
10 DONALDSON: Was it a normal practice for that unit to also go on manual
11 recirculation if you are under conditions of a site or general emergency?

12
13 MULLEAVY: It is not normally done, no. There would be no reason to normally
14 put it on. But when we saw an increase in the background levels of the
15 control room I asked them to put in on recir. It did at that time.

16
17 DONALDSON: Did that appear to alleviate the background?

18
19 MULLEAVY: No.

20
21 DONALDSON: Would you give us a conjecture on what happened there?

22
23 MULLEAVY: Well, we started taking air samples. We did go into masks.
24 Again I cannot tell you when we went into respiratory equipment, but it
25 seems that we were in it for quite a long time. We repeatedly took air

1 samples. We tried to have them evaluated but our own Ge(Li) detector was
2 out of service because we could not get to it. It was in our ECS in the
3 counting room off of the ECS, and we were experiencing at that time about
4 100 mr/hr down in the particular area. We could not do any evaluation of
5 those air samples. We did some decays and I conferred with Dick and found
6 them to be also in respiratory equipment. And we were on recirc and we had
7 that re-established by the control room that, yes, we were on recirc. We
8 felt the only reason that we were seeing some intake was that the plume was
9 coming into Unit 1's air intake. From the direction we were, West, Unit
10 1's air intake is on the West side, and we probably were having an air
11 intake into the building.

12
13 DONALDSON: You mentioned that you were on internal recirculation.

14
15 MULLEAVY: That is right.

16
17 DONALDSON: Does that mean--

18
19 MULLEAVY: It should not have been coming in, although it could have been a
20 bypass fan or a bypass vent that was open or something. They did tell me
21 that, no, that was indeed not happening and that we were all set on our
22 recirc. Yet, we still saw an increase. Now it could possibly be due to
23 the xenon, which was going to rubidium-88 after pass through the filters,
24 and we were seeing a particulate and we did do decay of that particular
25 sample which hit us just about 18-19 minute half-life. We decayed it for

1 many half lives and we came out of respiratory equipment seeing that we did
2 not have any long-lived--- it seemed to be a short half-life, indicative of
3 Rubidium 88, and so we did come out of respiratory equipment.

4
5 DONALDSON: So then the increased activity in the Unit 2 and Unit 1 control
6 room continued even after confirming that both control rooms were on recirc?

7
8 MULLEAVY: Yes.

9
10 DONALDSON: Has this situation ever been noted in the past? Has there ever
11 been anything to indicate that there might be cross ties in ventilation
12 systems, or incomplete vent dampering of systems when you go on to recirc?

13
14 MULLEAVY: Not to my knowledge. It had not been demonstrated before.

15
16 DONALDSON: You mentioned that people went into masks. Now, when you went
17 into masks were you in the Unit 1 control room?

18
19 MULLEAVY: Yes.

20
21 DONALDSON: Approximately how many people were in the Unit 1 control room
22 at that time?

23
24 MULLEAVY: Probably 20.

25
892 245

1 DONALDSON: Okay. In masking, were there sufficient numbers of masks stock
2 piled?

3
4 MULLEAVY: Yes.

5
6 DONALDSON: Could you describe the type of masks available?

7
8 MULLEAVY: We had two types. We had particulate masks, and we also had the
9 MSA iodine/particulate cartridge.

10
11 DONALDSON: Would you have taken any credit?

12
13 MULLEAVY: I could not.

14
15 DONALDSON: Why not?

16
17 MULLEAVY: Because I don't have an efficiency for that iodine cartridge. I
18 don't believe it is NIOSH approved, and we could not take that.

19
20 MARSH: NIOSH, can we define that? Just what are the initials?

21
22 MULLEAVY: National Institute of Occupational Safety and Health.

23
24 DONALDSON: From this point on, I guess it was approximately 12-1:00 when
25 the masking, you went under mask. I believe when that took place, yes, and

1 we stayed on and off. We did wear them at one point. We took them off at
2 one point. Our activity went back up again. We re-established wearing the
3 masks again, until we were constantly taking air samples and evaluating.
4 With the Ludlum we had set up a little HP lab in the back of the control
5 room and we had some RM14's so that we could see the air activity go up we
6 could also see the air activity go up in the monitor--the control room
7 monitors--and we reestablished wearing masks again and we found out our
8 half-life was again, indeed, looking like the very same thing we had before
9 so we then took masks off. It did go down.

10
11 DONALDSON: Let me back up a minute. Do you recall at any time in the
12 morning after your arrival after 07:00 that a general emergency was declared
13 over the page system?

14
15 MULLEAVY: That had happened, I believe, before I arrived.

16
17 DONALDSON: That a general emergency had been declared?

18
19 MULLEAVY: Yes, I think that was prior to my arrival. If it was not, I do
20 not recall the actual announcement.

21
22 DONALDSON: At the time that these activities were going on, were other
23 individuals reporting for work? Do you know?

1 MULLEAVY: No, the day shift should have already come in; they come in at
2 seven. All of the technicians were there. We had, I believe, a couple of
3 engineers arrived. Earl Showalter came in later on about 8 o'clock. I saw
4 him later in Unit 2's control room. He reported to us because he generally
5 comes to the ECS.
6

7
8 DONALDSON: Were there any people assembled in the North auditorium area?
9

10 MULLEAVY: Yes, there were.
11

12 DONALDSON: How would you characterize these people?
13

14 MULLEAVY: They were concerned people, enough so that I asked an individual
15 to go and speak to them, and I believe it was Earl Showalter. I asked him
16 to go up and tell the individuals as much as we knew, and this was I believe
17 8:30-9:00.
18

19 DONALDSON: Were these office workers?
20

21 MULLEAVY: Yes, they were.
22

23 DONALDSON: Is it a normal procedure when a general emergency has been
24 declared to permit continued access to non essential personnel onto the
25 site?

1 MULLEAVY: No. It is not.

2
3 DONALDSON: What is the normal procedure for entry onto the sight? Under
4 declaration of a general or site emergency?

5
6 MULLEAVY: They are stopped at the gate and they go to the observation
7 center.

8
9 DONALDSON: Did this cross your mind at all? Did you wonder what they were
10 doing there? How they got in?

11
12 MULLEAVY: No, it did not at the moment, at the time.

13
14 DONALDSON: I assume you said you had sent someone to the North auditorium
15 to monitor in that area, is that correct?

16
17 MULLEAVY: Yes, we did.

18
19 DONALDSON: Did you receive any survey results on the North auditorium
20 area?

21
22 MULLEAVY: Yes, we did.

23
24 DONALDSON: What were the highest dose readings that you had heard in that
25 area?

1 MULLEAVY: Only, I think less than 1 hr.

2
3 DONALDSON: Did these people remain there for the day or did...

4
5 MULLEAVY: No, they were directed at one point in the game they were directed
6 to leave that particular area, and the monitoring station was then set up
7 at the North gate, and the individuals did leave via the North gate to the
8 observation center.

9
10 DONALDSON: All right, So I guess normally we would not have expected to
11 find those people. Now you did say you were away...

12
13 MULLEAVY: Many of the people do start at 7:30 in the morning.

14
15 DONALDSON: But we have declaration of a site emergency?

16
17 MULLEAVY: I am not sure what time that happened.

18
19 DONALDSON: Let me go back to the time frame of 8:00 a.m. in the morning.
20 Under the emergency organization. Let's start over again. Normally when
21 the plant trips, that is, the reactor trips, are there any chemistry samples
22 that are routinely pulled?

23
24 MULLEAVY: I can't answer that for the chemistry department. I know that
25 we take RM-A-5, which is the condenser off gas monitor, that is our immediate duty.

1 DONALDSON: OK. At any time in the morning, were you aware that an RC
2 letdown sample had been requested?

3
4 MULLEAVY: I was not aware of that.

5
6 DONALDSON: You were not involved in an operation or any discussions relative
7 to the operations performed by Mr. Velez or Mr. Houser to obtain an RC
8 letdown sample.

9
10 MULLEAVY: No.

11
12 DONALDSON: Outside of the letdown sample, were you directing any inplant
13 health physics activities on that first day? Additional surveys, adjustments?..

14
15 MULLEAVY: Unrelated to the incident.

16
17 DONALDSON: Well they were related. In other words, additional corrective
18 actions that needed to be taken inside the plant, changing of any filters
19 of any kind?

20
21 MULLEAVY: Yes, the RMS system, we did change monitors.

22
23 DONALDSON: What monitor was changed?

24
25 892 251

1 MULLEAVY: In Unit 1, our vent monitors we changed. In Unit 2, I believe--
2 well I can't be sure in Unit 2, because I think Dick Dubiel was handling
3 those later on in day.

4
5 DONALDSON: Now, you have mentioned before that when Mr. Dubiel sent you to
6 the Unit 1 control room, that you would take care of Unit 1 and he would
7 take care of Unit 2.

8
9 MULLEAVY: No, I would take care of the offsite and onsite teams from the
10 Unit 1 control room, and he would handle the control room in Unit 2.

11
12 DONALDSON: OK. Normally would you have to expected to direct or coordinate
13 any activities involving the changing of the filters in the plant?

14
15 MULLEAVY: Under their direction, yes.

16
17 DONALDSON: Who?

18
19 MULLEAVY: At the Unit 2's direction. The effective unit. See, we take
20 our direction from the ECC.

21
22 DONALDSON: From whom would you take direction? In other words, what I am
23 trying to establish is someone over in Unit 2 side decides they either need
24 a sample, or need a particular valve line up verified, or a monitor cartridge
25 changed out. Normally who would that request for work come from?

1 MULLEAVY: It would have come from Dick Dubiel.

2
3 DONALDSON: At any time, did you receive requests for change out for any
4 health physics support for corrective actions that did not come from Mr.
5 Dubiel?

6
7 MULLEAVY: No.

8
9 DONALDSON: Direct from the operations group.

10
11 MULLEAVY: No.

12
13 DONALDSON: Any one else?

14
15 MULLEAVY: No.

16
17 DONALDSON: OK. Now, did anyone arrive later in the day to help you with
18 your duties? Any consultants? Any other foremen relieve you on and off?

19
20 MULLEAVY: No, not up in the control room.

21
22 DONALDSON: Were you doing any of the dose assessment functions on your
23 side?

24 892 253
25

1 MULLEAVY: No, I was not.

2
3 DONALDSON: You don't normally back up Mr. Dubiel on the other side as they
4 perform assessment functions independently?

5
6 MULLEAVY: No. That was stopped two years ago. When it was taken from the
7 ECS, and felt that it would be better for the ECC, the Emergency Control
8 Center, to handle that rather than having two different groups doing it.
9 So, no, we did not back those up.

10
11 DONALDSON: Now, is it safe to say that throughout the period of interest
12 that we were talking about, 3:28 through 3:30 p.m., that your prime involve-
13 ment was directing the on and offsite survey effort?

14
15 MULLEAVY: Yes. Yes.

16
17 DONALDSON: On the first day, at any time, were there any indications of
18 positive iodine samples in the environment?

19
20 MULLEAVY: Not of a positive iodine number. No. We were asked by Sid
21 Porter to adjust our SAM-2 is off of the xenon peak to give us more of an
22 indication for the iodine peak, and to my knowledge we did not get a posi-
23 tive iodine number.

24
25 . 892 254

1 DONALDSON: You say, you mentioned you were asked to adjust your SAM-2 off
2 of the Xenon peak? Am I to assume that the normal window/threshold adjust-
3 ment is broad enough that you were taking in a sum peak?

4
5 MULLEAVY: Yes, we were seeing Xenon peaks.

6
7 DONALDSON: What effect would it have, or let me ask you this: "Why weren't
8 the threshold and windows set to exclude the Xenon peaks in the first
9 place?"

10
11 MULLEAVY: This was explained to me by Sid Porter that he had done some
12 additional work and found it to be a little better on this setting that he
13 gave us, and he directed that this be done.

14
15 DONALDSON: You say he directed, under what authority was Mr. Porter acting?

16
17 MULLEAVY: As a consultant.

18
19 DONALDSON: Did Mr. Porter, obviously you had some contact with Mr. Porter,
20 did he appear to be working independently or was he working under the
21 direction or control of someone in your emergency organization? Was he
22 working with you? Exactly what was he doing?

23
24 MULLEAVY: Well, I assumed at the time that he was working with the emergency
25 organization under the direction of the ECC. I did not call them and ask

1 what he had. I really had no cause to question him, because I know he is a
2 consultant and I'm sure that he did not direct anything that would give us
3 adverse effects. It was only to help. We had a lot of consultants.
4

5 DONALDSON: Prior to this point in time, had the planning at the Three Mile
6 Island Station ever considered how consultants would be factored into the
7 emergency organization?
8

9 MULLEAVY: He is on the emergency call list as an outside outfit, I believe,
10 and would be called--as would RMC and Porter-Gertz in the event that we did
11 have a problem.
12

13 DONALDSON: Under whose direction would consultants operate?
14

15 MULLEAVY: I hope it would be under the direction of the ECC.
16

17 DONALDSON: Naturally, did it appear that this is the way it fell out? Was
18 it unclear at all?
19

20 MULLEAVY: Yes, I guess it was unclear. There was no direction in that,
21 "Hey! so and so is coming to give a hand, you do what ever you can to make
22 it easy for you, because he is there to help you." We didn't have that
23 type of direction.
24

25 . 892 256

1 DONALDSON: At any time, were any of the consultants or outside groups who
2 were integrated into your group or emergency organization, make requests or
3 bypass the normal emergency organization chain of command and either direct
4 or request that certain actions be performed without knowledge of the
5 individuals in charge?

6
7 MULLEAVY: On the first two days?

8
9 DONALDSON: Let's expand and just say at any time for the period of interest?

10
11 MULLEAVY: Yes. Oh, yes.

12
13 DONALDSON: Could you detail some of those requests?

14
15 MULLEAVY: Well, Sid (Porter) for one, requesting later on in the week to
16 follow that different monitors be changed because we owed it to the public
17 to find out exactly where and what this was. Sampling of effluents and so
18 forth, trying to get samples from HP-R-219--through the NRC directing me
19 that I could not afford not to do that. We were getting directions from
20 quite a few individuals: from the NRC, from consultants, to do things that
21 just had to be done in order to protect the public. I can understand that,
22 however, but there was no one individual seeming to direct the efforts.
23 There were quite a few people directing the efforts.

1 DONALDSON: Under your emergency organization, who would you expect to
2 receive all these requests for information, assign priorities, and direct
3 that work be accomplished.

4
5 MULLEAVY: Well, that is where I think we fell short. Because I was asked
6 by an NRC man one evening when I was put on 7 to 7 at night two days after
7 this happened. Dick was taking the front 7 12 hours, and I was taking the
8 back 7 to 7 shift. An NRC man asked me "What phase in your emergency
9 planning are you?" I answered, "Our drills never lasted this long. I
10 really did not know." It was--we had deviated from the plan enough so that
11 I could not stay in the Unit 2 control room forever. We had not regained
12 Unit 1's ECS yet, so we could not go back and regroup and continue the plan
13 as we normally would, and should have left it when we moved from the ECS to
14 go up to Unit 2's Control Room. If we stayed with the plan, I should have
15 stayed in the Unit 2's Control Room. The ECC should have been maintained
16 in the Unit 2's control room. And the Unit 1 Control Room, the unaffected
17 unit, should have continued on. We did not. We deviated a bit from that
18 and then we began to have a lot of people in who are now pushing us to do
19 many other things other than running our drill the way we know how to run
20 it.

21 DONALDSON: Despite the change in physical location, that is outlined in
22 the emergency plan for locations of the various subelements of the response
23 organization, do you feel that part and parcel of physically being relocated
24 that the continuity of the command and control throughout the emergency
25 organization degraded from that point?

1 MULLEAVY: Yes, it was lost.

2
3 DONALDSON: Do you think that was a manifestation of the physical relocation
4 or a manifestation of increasing demands placed upon the emergency organiza-
5 tion?

6
7 MULLEAVY: It was the increasing demands placed on it. Yet it got much
8 bigger than the organization has allowed us to become. Many more people
9 were added that were not originally in the plan. When you have a plan set
10 up and you say, well, we will call when we need them, we will call this
11 organization, such as we will notify the NRC. The NRC never responded in a
12 manner in which they responded to this one. The token call was made during
13 the drills, and yes we called them--they never responded with 100 bodies
14 coming back to the plant. I never was involved with an NRC man coming up
15 to me saying what are you doing now, why aren't you doing this? How come
16 you are not doing this type of thing, or just what are you supposed to be
17 doing? See this doesn't take that into a drill.

18
19 DONALDSON: How would you characterize the involvement of the NRC in that
20 context when you are trying to do your job.

21
22 MULLEAVY: It is hard, the same way it is for the consultant to come in and
23 say now I want you to do this. Or I think you should be doing this. Why
24 aren't you doing this?

25
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1 DONALDSON: If you had one recommendation to make to planners in the future,
2 and considering the development of an emergency organization and how to
3 handle a similar situation when, let us call them, "the foreigners" arrive,
4 what would that recommendation be?

5
6 MULLEAVY: Let's call them "outside help." All right? What would I
7 recommend? I would let them have their plans. I would let them do what
8 they are supposed to do. They know. An individual told me the other day,
9 it is a good thing it happened here because this plant knew what to do.
10 Hey, that was kind of heartening to hear. But let these individuals do
11 what they know how to do,

12
13 DONALDSON: The consultants?

14
15 MULLEAVY: Let the staff do what they know how to do. Then, because in
16 talking to individuals that were here, they were confused they did not know
17 who was directing what, and we had many good ideas, I am not saying they
18 were bad, we had many many good ideas. There is a lot of talent out there
19 that came in to help us. But too many ideas and everybody just lost track
20 of what really was going on.

21
22 DONALDSON: From the time you arrived onsite through the 30th, had anyone
23 ever sat down or was the emergency job board ever filled out and placed in
24 a location to know who was in charge of what?

25
892 260

1 MULLEAVY: No, that was one of the biggest things we really wanted was to
2 take the staff and to tell the individuals what was going on.

3
4 DONALDSON: I think it was time for us to turn the tape.

5
6 MARSH: The time is 12:34 April 25. At this time I will terminate this
7 tape.

8
9 MARSH: Same people present. Dale, I think you were posing some questions.

10
11 DONALDSON: I would like to pursue the line of continue with this emergency
12 organization idea we are talking about. Again this is during that three-
13 day period of the 28 through the 30. You have an emergency job board.
14 Would you just describe that board a bit and what it is used for?

15
16 MULLEAVY: Well, we are speaking about the--is this what you are... this
17 one? (Mr. Mulleavy shows Mr. Donaldson a board schematic)

18
19 DONALDSON: I believe you have the ECS. I know there is a...

20
21 MULLEAVY: Yes, the ECS. There is an assignment board and I guess we do
22 call it the emergency job board. It gives spots where individuals can be
23 written down, if there is a spot for the different parties that you do
24 form. The status board or job board was not maintained because we did move
25 from one ECS to another. The one at the ECS at the HP (Health Physics)

1 control point in Unit 1 is bolted to the wall. That could not be moved.
2 The data that was recorded there had to be recreated up in the control room
3 of Unit 2, perhaps a better place, or something that could be moved in the
4 event that we have to move, so that data was actually left on the wall on
5 the job board down at the ECS when we did make our move. To go back up and
6 recreate that then, and to reestablish everybody on their same jobs, it did
7 work. Individuals did go up and they assumed the phone communications and
8 so forth. Then it began to work again. We had milling around of individuals
9 that were unassigned. We did then have to form more on-site teams, which
10 we chose auxiliary operators and they functioned very well incidentally.
11 They were asked to do things, they performed them. They did come back to
12 the ECS Unit 2 control room, which we had established as our alternate ECS.
13 We continued on that way until we then had formed all these particular
14 teams. We continued on that way for the rest of the day. It worked from
15 there, it was confusing, because individuals were around and about the
16 area. We had to confine them to one section so they did not wander off.
17 It was a little more difficult up there than it would have been in Unit 1's
18 ECS, although it worked. As far as individuals panicking and not doing
19 what they were asked to do, we did not have that. We did have individuals,
20 they were responsive, they did what we asked them to do, and they came back
21 expeditiously with the answers that we had asked them to find. The main
22 thing that the plume kept coming back on us, it did not go in a specific
23 pattern as we thought it would. The air just hung around us; it was very
24 difficult to know where to send individuals.
25

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1 line--from Unit 1 to Unit 2's control room to Unit 1, and Dick (Dubiel)
2 would communicate with me via that hot line. So therefore we established
3 this communication a one on one, Dick Dubiel to myself, myself to the off-
4 site teams.

5
6 ESSIG: So you were then communicating through Dick to and from the off-
7 site teams?

8
9 MULLEAVY: That is correct, as we normally would do. Now they are choosing
10 wind direction, they are choosing what they would like to see; we are
11 trying to anticipate.

12
13 ESSIG: Wind direction you say they are...

14
15 MULLEAVY: The Unit 2 Control Room. They are doing the dose calculations,
16 they are using the isoplots, they are looking at the maps, and so forth.
17 We are trying to anticipate their needs, getting the teams where I feel
18 they should be, and monitoring up and down, with direction again from the
19 ECC.

20
21 ESSIG: Did you both have, after you relocated to the Unit 1 control Room,
22 did you both have access to when I say both I mean Unit 1 and Unit 2 Control
23 Room, both Dick and yourself? Did you have access to wind speed and
24 direction?
25

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1 DONALDSON: I would like to ask Tom (Essig) if he has any questions.

2
3 ESSIG: Yes I do. Tom you indicated that after you got into the Unit 2
4 control room, you and Mulleavy had operated there for a while. Then later
5 on went over to the Unit 1 control room. As I understand it, the mission
6 that Dick gave you was essentially to direct the on-site off-site survey
7 teams. Was that it?

8
9 MULLEAVY: That is correct.

10
11 ESSIG: And in giving you that assignment, did he pretty much give you a
12 free hand in, say, essentially to do what needs to be done in terms of
13 assessing what is happening off-site. What kinds of instructions did he
14 give, what kind of marching orders or instructions, or whatever he wanted
15 to call them, did he give you.

16
17 MULLEAVY: Well, there was not much instruction to be given because this
18 was the normal situation as it would have been done in the drill. I run
19 the on-site and off-site team and would be familiar with that. It just was
20 easier done that way; that I take the instruction over to Unit 1, less
21 confusing that way, and get out of the Unit 2's control room with everybody
22 there. So the normal duties would be to feed the information back to the
23 ECC in Unit 2's control room after we received it from the off-site and on-
24 site teams from Unit 1, where we were directing their activities. The
25 response that we got from the ECC would be via the communication--the hot

1 MULLEAVY: Yes, both Units have wind speed and direction indications.

2
3 ESSIG: Do they have a recorder which is set up off the same power, is that
4 how it is set up.

5
6 MULLEAVY: That is right.

7
8 ESSIG: So I gather then from what you are saying that Dick or somebody in
9 the Unit 2 control room in the ECC, as you called it, would decide where a
10 survey needed to be done, whether it be in Goldsboro, or this side of the
11 river, or where. It would be up to you to dispatch to make sure the team..

12
13 MULLEAVY: That is correct that if I saw the wind speed was such and such,
14 and we were taking one at a certain location, whether it be North Northwest
15 at a mark on the map, I might then choose to send them out in the same
16 direction to the next location further on out. I would then tell Dick,
17 "This is what I am going to do, do you concur?" and he would say yes, or
18 no, or whatever he felt. We would communicate back and forth that way. We
19 had the maps, we had the isoplots in Unit 1, we had the duplicate set, and
20 we were also doing--I was not, I had an engineer doing those calculations
21 also, following it on the map.

22
23 ESSIG: You had an engineer?

24 . 892 265
25

1 MULLEAVY: We had an engineer also doing that, following the plume and
2 drawing it.

3
4 ESSIG: Who was with you initially, was this a nuclear engineer?

5
6 MULLEAVY: Mike Benson.

7
8 ESSIG: Mike Benson, and do you know who it was with Dick Dubiel?

9
10 MULLEAVY: I don't know who it was.

11
12 ESSIG: At what point did you feel that you had a reasonably good handle on
13 what it is you were monitoring for? You indicated earlier that at first
14 you did not know where the releases were coming from? Did you feel that
15 what you were encountering was primarily noble gases? What did you know
16 about what you were monitoring, say early on?

17
18 MULLEAVY: What did we know what it was?

19
20 MULLEAVY: That is correct.

21
22 ESSIG: Where was the first offsite team sent? This has been probably
23 early--not too long after you got there, I would guess you were probably
24 still at that time in the Unit 2 control room with Dubiel.

1 MULLEAVY: Yes. I can't recall exactly where. I know later on we sent
2 them on the West side.

3
4 ESSIG: On the West side?

5
6 MULLEAVY: Yes. I believe it was on the West side of the island that we
7 first got some readings. Then we talked about air lifting a team over to
8 the Goldsboro area. It seemed to swing from the West to North-Northwest
9 North-Northeast, all in that particular quadrant. We were back and forth
10 going on to a couple of the islands. We tried. Thank goodness we had
11 helicopter service, because that was very good.

12
13 ESSIG: This was helicopter service, then, that you chartered?

14
15 MULLEAVY: There were all of a sudden, I don't know where they came from,
16 but all of a sudden we had three helicopters available. I believe they
17 were State police. I am not sure exactly where they came from, who we had
18 the service with, but they were very, very helpful. So if you can ever
19 have helicopter service, you need it.

20
21 ESSIG: Did you in fact go on the West side of the river? You said you
22 were planning to go there. Did you send a team over there?

23
24 MULLEAVY: Yes, indeed.
25

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1 ESSIG: And did they stay over there for some time or just...

2
3 MULLEAVY: We had one team stay there for a good length of time. I am not
4 sure exactly how long, but we had them stationed there and then the wind
5 did shift again. It was a very moving type of wind that was just all over
6 the place, really. But stayed within those particular areas.

7
8 ESSIG: Fairly low wind speed.

9
10 MULLEAVY: Yes, practically non-existent, as I recall. Then, it came back
11 on us the plume came back, and seemed to drift out another way. It never
12 really went too far and that was a source of quite a lot of confusion. It
13 seemed we would get a team out there, and we would drive to the Olmstead
14 Air Force Base, and all of a sudden they were not needed there, they had to
15 go some place else. It was very difficult in sending your teams out, but
16 they responded well.

17
18 ESSIG: Could you define just for talking purposes, how many people on each
19 team? When you say team, is that 2 men, 4 men, 6 men?

20
21 MULLEAVY: Generally, a three man team.

22
23 ESSIG: Three men would go in the vehicle, then.

24
25 892 268

1 MULLEAVY: That is correct.

2
3 ESSIG: In a single car.

4
5 MULLEAVY: Except the ones walking on the island.

6
7 ESSIG: You had some walking on the island.

8
9 MULLEAVY: Yes we did. We had about four teams walking around the buildings,
10 North, South, East, and West on the four quadrants of the island.

11
12 ESSIG: So you had 4 teams on the island.

13
14 MULLEAVY: We established 2 offsite teams right away. A Bravo and Charlie,
15 as we normally would do. We then established another one, which we had
16 done during drills.

17
18 ESSIG: What was the third one.

19
20 MULLEAVY: Delta. They were dispensed, and we had some difficulty with
21 getting them equipment for the 4th team. Sid Porter had brought an instru-
22 ment with him, another SAM-2, and we utilized his SAM-2 in going out with
23 that particular team. They began functioning, then ultimately later on it
24 was handled at the observation center, and then all of the directing was
25 done over there.

1 ESSIG: When these teams went out if there is a three man team, I gather
2 there is one guy who does the driving. How is the work split out? Once
3 they arrive at the point, I assume they can make some measurements as they
4 are going.

5
6 MULLEAVY: They are directed to make measurements it is part of the proce-
7 dure. As they move along they have a radio talker. One guy can be doing
8 this. It can be a two man team, generally one driving and one reading the
9 instrument as they go along on their way to a pre-determined point on the
10 map.

11 ESSIG: Okay.

12
13 MULLEAVY: All our maps are indicated in North, North-Northeast, Northeast
14 and so forth and they are directed to go to a quadrant and to a point
15 within that particular quadrant whether it be 1-1, 2-1, 3-1, so forth and
16 on. They will go to that particular point, and give us a background reading,
17 off their dose rate instrument, and they are directed at that particular
18 time--or prior to being dispatched to their destination, will be told what
19 to do when they are there. Either get a dose rate and move out of the
20 area; or get a dose rate, phone it back, and take an air sample and read
21 it; or they are told to take an air sample, a particulate, and an iodine or
22 charcoal, and then leave that particular area, report to such and such a
23 point, read it, so that they are out of the plume. These are their instruc-
24 tions as we have been giving them.

25
892 270

1 ESSIG: What type of survey instruments were generally used?

2
3 MULLEAVY: They are set up with the PIC-6, an Eberline PIC-6. They subse-
4 quently started with the R02 and began--shortly that afternoon--we began to
5 go out with the R0-2, which is an ionization chamber and has the capability
6 to open and close a beta window.

7
8 ESSIG: Okay, so initially...

9
10 MULLEAVY: Initially it is the PIC-6. Which has a lower level of 1 mr per
11 hour.

12
13 ESSIG: You can't read anything below 1? It is the bottom of the scale
14 line.

15
16 MULLEAVY: Right.

17
18 ESSIG: What dose rate do you think you can reliably read with an R02?

19
20 MULLEAVY: What dose rate?

21
22 ESSIG: What is the lowest dose rate that you could reliably say that we
23 are talking about? We are talking about tenths?

24
25 . 892 271

1 MULLEAVY: .02, .03, it will give you a background reading.

2
3 ESSIG: Oh, .02, .03 mr per hour?

4
5 MULLEAVY: Yes, because the first range on that is a 5 mr full scale reading.

6
7 ESSIG: Okay. So the teams then are being directed by you in coordination
8 with Dubiel, based on wind direction and speed, and they are making window
9 open, window closed, measurements. And occasionally they are directed to
10 take air samples.

11 MULLEAVY: Yes.

12
13 ESSIG: What determines when they--how is it determined when they should be
14 taking an air sample?

15
16 MULLEAVY: By the wind speed. If they are going to arrive before the
17 plume, they would take a background reading, stay there until they saw an
18 indicated upscale reading; then they would be directed at that time to take
19 an air sample.

20
21 ESSIG: These were air samples collected with what type of sampler?

22
23 MULLEAVY: A RADECO, which is a low volume--well, it is not really a low
24 volume. It has a variable volume, and they take those. That sample.
25

1 ESSIG: Approximately what flow rate?

2
3 MULLEAVY: Five SCFM.

4
5 ESSIG: In how many minutes?

6
7 MULLEAVY: About four to five minute run.

8
9 ESSIG: Okay. Let me borrow that procedure for just one second. There is
10 just one point that I wanted to ask you about on one of the procedures on
11 outside monitoring. It says--I am looking now at procedure 16-70.6, which
12 is the offsite monitoring procedure. One of the points that it makes was
13 that the ECS may direct the monitoring team to do certain things. Such as
14 if a continuous air monitor--I presume they really mean air sampler and not
15 air monitor. You mean one of the regular environmental air sampling
16 stations that are in... or am I wrong on that? "If a continuous air monitor
17 is located in the designated area, replace the charcoal and particular
18 filters with clean filters and make gross radioactivity determinations from
19 dirty filters. Retain dirty filters for a precise laboratory analysis."

20
21 MULLEAVY: That is the radiation monitoring environmental stations that we
22 are talking about.

23
24 ESSIG: These are routine fixed filtered stations?

1 MULLEAVY: That is correct.

2
3 MARSH: Tom can I ask you to give the citation you are reading on? Is
4 there a procedure number on that?

5
6 ESSIG: Yes, I gave the procedure number. It is procedure 16-70.6 Revision
7 2, dated January 16, 1978. I was reading from paragraph 2.1.15 of the
8 procedure. I will get to the question I wanted to ask you in a minute
9 here. It also says that if a TLD station is nearby, collect the TLD and
10 return to the ECS for evaluation, replacement new TLD; and then it goes on
11 to say place sufficient TLD's at either the continuous air monitor, or a
12 convenient representative location in a designated area, to permit reading
13 TLD's every four hours during emergency. Do know if any time consideration
14 was given that?

15
16 MULLEAVY: Consideration was given to changing the environmental monitors.
17 I discussed that with Bev Good who is our reading representative for the
18 environmental, and she at that particular time thought it was best that we
19 leave them on for this duration, not knowing how long it would be at the
20 time, but not to fuss with those right at this particular moment.

21
22 ESSIG: OK, you discussed with Bev Good. Was she actually there?

23
24 MULLEAVY: Yes, she was.

25
892 274

1 ESSIG: So her recommendation was to leave the TLD samples. To leave them
2 go for now, this is the recommendation she made on the 28th? Leave air
3 samples in place and in addition leave the TLD's?
4

5 MULLEAVY: Yes.
6

7 ESSIG: Now getting back to this procedure just for a second. I don't want
8 to be labor the point too much. Going back to that same Paragraph 2.1.15,
9 where it speaks to placing TLD's, and I believe it is talking about additional
10 TLD's. at either the routine monitoring stations or at another representa-
11 tive location in the area. To your knowledge was it ever, was that consi-
12 dered, to put additional ones to be retrieved every three or four hours?
13

14 MULLEAVY: Not at that particular time. Later on--again I am not sure
15 about the exact time. We discussed with Sid Porter, who brought the area
16 monitor and the area TLD's and so forth, and those were changed, and we
17 replaced them with the additional set. I believe that was on the 29th or
18 30th. Changing out the normal ones that we do change every month.
19

20 ESSIG: OK. Let's see. The interface with the people doing the actual
21 assessment of the offsite impact--you indicated that there was one of the
22 nuclear engineers was in the Unit 1 site, where you were later on in the
23 morning and the rest of the day, and then there was also one in Unit 2
24 site. Were they essentially doing the same job?
25

1 MULLEAVY: I don't believe that they were actually communicating with each
2 other. The engineer that we had was following the plume. He was taking
3 care of correlating the offsite readings. He was changing our map to
4 reflect these particular readings, and the reports that we were getting in
5 from the offsite teams, and taking care of that particular aspect. As far
6 as his communication with Unit 2's dose assesor, I don't believe that the
7 two of them were communicating directly, one with the other. The mere fact
8 is that I don't believe that each one was near a particular phone, that
9 they could conveniently converse.

10
11 ESSIG: Did you have occasion to communication with the one in region...

12
13 MULLEAVY: The only one that I communicated with was Dick (Dubiel) over at
14 Unit 2 control room.

15
16 ESSIG: Getting back to the survey teams just for a minute. Do you know if
17 one of the individuals on the survey team would have been given the job to
18 record the actual survey measurement and/or then radio them in, or did they
19 just radio them in as there taking them.

20
21 MULLEAVY: They are to record them on their map as they move along. That
22 is a suggestion to them, that they record it on the map. They do have
23 paper and tablets with which to record this information. They should
24 record and have it on their envelopes that they draw up the samples from or
25 on, and that data should have been recorded on those envelopes.

1 ESSIG: I think Dale asked some questions along this line a little bit
2 earlier? I would just like to come back to it just briefly. During the
3 collection of the air samples, I believe that we had established that you
4 had some occasional positive ones, or you had a positive one early some
5 time that morning, which was taken up to the State for analysis. What were
6 your feelings about that sample in terms of--was it believable to you? Did
7 you have any feeling one way or another, whether or not you had expected
8 the iodine to be there, or did you talk with Dick about this? As I under-
9 stand the level we were talking about on a couple occasions was 10^{-8} micro-
10 curies per cc, I think as high as 10^{-7} .

11 MULLEAVY: We did discuss it and we looked at the dose rates in those
12 particular areas. We did see that we had some lengthy stay time in those
13 particular areas, in looking it up on the chart. I was not worried at that
14 particular time because I did not think that those levels were that bad at
15 the moment, if they indeed were iodine levels. I had no reason to disbelieve
16 them, but having never seen iodine levels go off-site, it was hard to
17 believe that we were actually experiencing this. I was relieved to hear
18 back from the State eventually that they did not see any iodine in those
19 samples.

20
21 ESSIG: Do you happen to know what their minimum detectable activity was?
22

23 MULLEAVY: No, I don't know what that number was.
24
25

1 ESSIG: Dale, if you have an additional question and would not mind asking
2 it now, I would appreciate it. We are at a break point. Fine.

3
4 MARSH: Time to roll the tape over, so I have 1:05 a.m., April 25. I am
5 reading about 470 on the meters so at this time I am going to change sides
6 on tape.

7
8 MARSH: Time is 1:06 a.m., April 25. This is Bob Marsh. We still have the
9 same people present, and Dale, I think you just received the ball from Tom
10 Essig.

11
12 DONALDSON: Ok, Tom. Let me just briefly address documentation and logs of
13 actions taken. Is it a normal procedure for the ECS and the ECC to maintain
14 a log?

15
16 MULLEAVY: Yes, it is. We do maintain our particular log as far as sampling
17 goes by the sample sheets that we receive as they come in from the off-site
18 teams. Those particuclar sample sheets are then given to the man who is
19 maintaining the board, and then put together by this individual. The
20 engineer who is taking the data from the offsite teams generally is the one
21 who begins a log.

22
23 DONALDSON: On the morning of the 28th, were you apprised when accountability
24 of individuals had been completed?
25

892 278

1 MULLEAVY: Yes.

2
3 DONALDSON: You received a muster listing?

4
5 MULLEAVY: We received an OK listing from the guards. There was indeed, I
6 believe, two individuals missing at the time, and they were found without
7 us going out looking for them.

8
9 DONALDSON: The accountability system then appeared to work.

10
11 MULLEAVY: Yes, it did.

12
13 DONALDSON: Were you, during the initial stage, and toward down the ECS,
14 were you authorizing access and egress into the facility?

15
16 MULLEAVY: Yes.

17
18 DONALDSON: How long did that continue, or when did that stop?

19
20 MULLEAVY: That stopped shortly after I received no more calls, once we hit
21 Unit 2's control room, but we did receive a few calls at Unit 1 when we
22 were still there, to either let or not let individuals into the plant site.

23
24 DONALDSON: In regard to performance of equipment, what was the status of
25 equipment on the morning of the 28th?

892 279

1 MULLEAVY: We had three operational units.

2
3 DONALDSON: By units, you mean what kind of units?

4
5 MULLEAVY: The kits, the emergency kits.

6
7 DONALDSON: How many are normally available?

8
9 MULLEAVY: Four.

10
11 DONALDSON: How long had the one kit been out service?

12
13 MULLEAVY: About one month.

14
15 DONALDSON: And the reason?

16
17 MULLEAVY: Len Landry was working on it. There was a board that had to be
18 replaced in the SAM-2 kit.

19
20 DONALDSON: Could you characterize the demonstrated reliability of the SAM-
21 2 systems, since you have had about a year and a half?

22
23 MULLEAVY: Well, we had probably 75 percent of the units in operation. One
24 seemed to go, and then another one on the next inventory, something would
25 be wrong with it. I would say the one kit was not functional when we had
this incident.

1 MARSH: You had previously indicated you did experience some equipment
2 difficulty during your first start when you settled your teams. What are
3 you making reference to there?

4
5 MULLEAVY: That was a technician going for the fourth kit, and it happened
6 to be in the possession of Len Landry at the time. He went to get it and
7 of course it was not operational, and that was the difficulty that we
8 experienced.

9
10 MARSH: Anything over and beyond that?

11
12 MULLEAVY: We had an air sampler go after it was used a couple of times,
13 and we had to send to send another out from the ECS, that was to the North
14 gate. Then we received word that another SAM-2 was not functional, and we
15 had to replace with the fourth one that we had gotten from Sid Porter, so
16 then we only had three operational again. So, the on-site team, we took
17 their kit and used that for an off-site.

18
19 MARSH: Do your duties involve any of the control of the TLD's and the
20 dosimeters to plant personnel?

21
22 MULLEAVY: By the control?

23
24 MARSH: The issue and the call back of those. There has been some comment
25 previously about a possible shortage of dosimeters that once these were

1 given out they were kind of hard to reclaim, and that there may have been
2 some shortage of the dosimeters themselves.

3
4 MULLEAVY: At that particular time of the game, no, we didn't have a shortage
5 of dosimeters. We had plenty in Unit 1's control or Unit 1's ECS because
6 we had just come out of an outage for which we had ordered many low range
7 dosimeters.

8
9 MARSH: How about during the second and third days of the event?

10
11 MULLEAVY: They began to get in short supply because we were not getting
12 them back from individuals, and as the plant staff grew, we did run short.

13
14 MARSH: Did this present any severe problems, and how did you counter them
15 when you began to run short?

16
17 MULLEAVY: We began to recall and put notes out at the processing center
18 that please to return their dosimeters. We then stopped issuing dosimeters
19 at random to anybody who came into the plant site. We started out by
20 issuing them at the North gate as the bus loads of people came in. Thus,
21 we were not getting a return on them, so we stopped that and drew that back
22 to each control point, the Unit 2's control point and the Unit 1's HP
23 control plant. This kept them where they were most needed.
24
25

1 DONALDSON: Did you experience any communication difficulties in the initial
2 setup of the ECS?

3
4 MULLEAVY: No, we did not.

5
6 DONALDSON: We had--someone else had mentioned that there was a difficulty
7 in establishing the tie line between the control rooms.

8
9 MULLEAVY: The tie line between the control rooms is the hot line.

10
11 DONALDSON: One of the phones that were talking about setting up, could get
12 to Unit 2 but they couldn't they could get the Unit 1 control room. This
13 is a three party hook up. Is it not?

14
15 MULLEAVY: Yes.

16
17 DONALDSON: There is Unit 1, Unit 2 and the ECS all along the same line.

18
19 MULLEAVY: That is correct. We have got one line that goes directly from
20 the ECS to the Unit 1's control room, which we use the gatronomic system, so
21 we have Line 1 and Line 3 and then we have the turbine hall phone system,
22 which we go direct up to the control room. When I arrived all of those
23 lines were working.

24 . 892 283
25

1 DONALDSON: All communications were normal

2
3 MULLEAVY: Yes.

4
5 DONALDSON: You recall off hand what the SAM-2 minimum detectable activity
6 detectable amount is. I realize it will vary with background.

7
8 MULLEAVY: It does vary, I believe it is. Now with the volume that we are
9 taking, I think it is within the range of above 5×10^{-9} .

10
11 DONALDSON: When these samples were indicated to be positive, had anyone
12 evaluated the MDA under the existing conditions to determine where or not
13 those samples could be thrown out as unreliable at that point.

14
15 MULLEAVY: No.

16
17 DONALDSON: In retrospect, do you think that would of been a good idea?

18
19 MULLEAVY: To throw them out.

20
21 DONALDSON: No, to look at the MDA of the systems that were being used. To
22 give you a better handle on whether or not the results were believable or
23 not believable.

24 .. 892 284
25

1 MULLEAVY: Well, I think if we had to bring them back in again, whether
2 they were believable or not, to bring them in and have them evaluated right
3 away--not to send them off to a hospital somewhere or through the State,
4 but to have a facility closer to us. No obviously we didn't anticipate we
5 couldn't use our own system, which obviously looks wrong right now. I
6 believe that those samples should have come back and we should have evaluated
7 right away. It was a long time from the time we sent them off by helicopter
8 to the State that we finally got an evaluation back.

9
10 DONALDSON: Now throughout the course from the 28th through the 30th the
11 levels of radioactivity within the auxiliary building and specifically
12 levels of iodine in the buildings began to build. Is that correct?

13
14 MULLEAVY: That is correct.

15
16 DONALDSON: In simple terms I guess throughout this early period and through
17 the period of 28th, could you explain why no iodine was released? Do you
18 have any feel for that.

19
20 MULLEAVY: Why no iodine was released during the first few days?

21
22 DONALDSON: Right. In other words, the trend seems to be that there would
23 be iodine in the environment. They were seeing iodine in the auxiliary
24 building. Everywhere they looked there was iodine in the IWTS the IWFS.

1 MULLEAVY: I believe that our filtration system was taking care of it,
2 until we probably had a break through.

3
4 DONALDSON: Let's go to Friday, that would have been the 30th. Around the
5 morning of the 30th then into the early afternoon there was an activity in
6 the area of recommendation of protective actions being implemented for
7 selected members of the population in the environment. Where were you
8 located when this recommendation to be made public?

9
10 MULLEAVY: I was at home.

11
12 DONALDSON: You were at home at the time.

13
14 MULLEAVY: Yes, I was in the 7:00 in the evening to 7:00 in the morning
15 shift.

16
17 DONALDSON: So as of 7:00 you would have knowledge of the situation up
18 until 7:00 in the morning. When you heard that, what was your initial
19 reaction?

20
21 MULLEAVY: Are you speaking of the evacuation?

22
23 DONALDSON: Yes, your personal...

24
25 892 286

1 MULLEAVY: My personal feeling of it: foolish.

2
3 DONALDSON: Could you expand on that.

4
5 MULLEAVY: Yes, I think it was. At the time, I don't think enough informa-
6 tion was there, and I think the populace was unduly burdened by this parti-
7 cular evacuation notice. I don't feel that the Governor knew, nor was being
8 told enough, to make that particular evaluation, and if he had known the
9 full score, I don't think he would of ever done it.

10
11 DONALDSON: Now there are those who will say, and who believe, that such a
12 recommendation was prudent based upon the potential for the escalation of
13 off-site consequences because of potential for melt-down and break-through
14 of filters and on going or continuing releases. In light of that do you
15 still feel that the recommendation was incorrect?

16
17 MULLEAVY: Yes.

18
19 DONALDSON: Would you care to elaborate on why?

20
21 MULLEAVY: Again I don't feel that the potential was there. I think that
22 at that particular time, the situation was in hand through our own operations.
23 In looking at the transcript that preceded that evacuation notice, I don't
24 think those people were fully informed either that made those recommendations
25 to the Governor.

1 DONALDSON: To your knowledge had any of the levels in the environment, any
2 of the projected doses, exceeded any of the lower limits of the protective
3 action guides adopted by the State of Pennsylvania.
4

5 MULLEAVY: I don't believe so, no.
6

7 DONALDSON: Can you pin-point a time, maybe on during 30th if it did occur
8 (I don't know if it did or didn't) when the emergency organization sort of
9 began to evolve to one of a recovery operation?
10

11 MULLEAVY: During our particular shift at the begining of the 30th, we on
12 my shift were told and advised that we should begin to--I will take that
13 back, it was on the 29th as a matter of fact--that word came out that if we
14 did not begin to recover and get back to some normality, that we would
15 answer to the Commission for not making this particular move. It was
16 received by individuals on our particular shift as, of sort of feather
17 ruffling, but in looking back now I am glad that it happened that way.
18 However it evolved I dont know. Stories and rumors were flying about;
19 however, it did make us take a look at our actions. It helped us to get
20 back to reality, to show us what we were doing and to begin to pull the
21 reigns back in again, and say yes I guess you are right maybe we ought to
22 start reestablishing our particular areas taking a firm footing, establishing
23 a ground, and looking to a goal to get back to our HP control point, look
24 to see where we were, and we then began to try that particular rule.
25

1 DONALDSON: You think that, as early as the 29th, it was a good decision to
2 begin moving.

3
4 MULLEAVY: I think so.

5
6 DONALDSON: Did this organization evolve smoothly or were there some diffi-
7 culties encountered?

8
9 MULLEAVY: Oh, there were difficulties encountered.

10
11 DONALDSON: To what do you attribute the major cause of the difficulty?

12
13 MULLEAVY: Total upset of our particular little world that we were living
14 in. It is very difficult to reestablish when we began to see our own
15 establishment being what we thought was taken over by some other group or
16 another outfit, as people began to come in and throw ideas our way. We saw
17 our own control diminishing and we saw others trying and many times succeeding
18 in forming ideas in our minds on what should be done. Some were good I
19 felt, and I do believe that that one particular little shot into, "Hey
20 boys, start establishing your ground and get back to something that is
21 normal." That is when it began.

22
23 DONALDSON: Do you know of any time at all during the 28th through the 30th
24 when the trains happened to have blocked either one or both of the entrances
25 to the Island.

892 289

1 MULLEAVY: Yes, I believe the North gate was blocked for a period of time.
2 I had heard that. I did not know that to be a fact other than somebody
3 said, "Yes, we were blocked on the island for a short while."
4

5 DONALDSON: There are provisions, are there not, for contacting Con-Rail to
6 ensure that these this kind of blockage does not occur.
7

8 MULLEAVY: Yes, we have their number, and we could have called them to have
9 that train moved.
10

11 DONALDSON: Do you know if they were or were not contacted?
12

13 MULLEAVY: I do not know that, no.
14

15 DONALDSON: OK. Tom, do you have any other questions before we?
16

17 ESSIG: Yes, I think I have just a couple more. Do you recall who the
18 technician was that you sent? There was the one that essentially made the
19 first outside survey over at Goldsboro.
20

21 MULLEAVY: I don't know the group. We did send one of the offsite teams
22 there, and I don't recall who that team was, or who was on that particular
23 team.
24

25
892 290

1 ESSIG: I think you mentioned when earlier when we were talking about the
2 helicopters being made available, and if I remember what you said correctly
3 you indicated that there were surveys on a couple of islands.

4
5 MULLEAVY: Yes there was an island over Northeast of us. We had hoped to
6 send a helicopter over there, and then there was some concern of whether it
7 could land on that particular island or not. We, I don't believe we did
8 send a helicopter there, because the wind shifted before we dispatched it,
9 and we went to Olmstead. I think there was some trees in the way. We
10 discussed that at the time.

11
12 ESSIG: Why were you interested in surveying on this island? Are they
13 inhabited?

14
15 MULLEAVY: No. That happened to be the closest point off-site in that
16 particular wind direction at the time.

17
18 ESSIG: I guess there are some homes on some of the islands, are there not?

19
20 MULLEAVY: Yes, there are. There is some habitants.

21
22 ESSIG: Were you aware of any people that were there at the time?

23
24 MULLEAVY: No, I believe they are inhabited but not in the winter time.
25 Mostly in the summer. They are mostly summer cottages.

1 ESSIG: Let me just ask one more question. I think we started to get to it
2 earlier but,. Your involvement, Wednesday, Thursday and Friday--would you
3 characterize it as being pretty much the same; that is, you were directing
4 the on-site and off-site survey teams through approximately Friday?

5
6 MULLEAVY: I would say, Friday, the involvement diminished somewhat because
7 it began to be taken over by another group, which was off-site, which was
8 at the observation center. They were busy establishing something which we
9 were not aware of, and beginning to direct the activities from the observa-
10 tion center. There was another rad group being established of which I was
11 unaware of at that particular time.

12
13 ESSIG: Ok, but this would have been composed of some of Dubiel's other
14 people or?

15
16 MULLEAVY: No, I don't believe it was Dubiel's--other people, it was another
17 group. I believe it was another group, the EB group (Electric Boat) was in
18 and they began to establish HP controls and directives and so forth. I
19 gradually was taken away.

20
21 ESSIG: Without your knowledge, and I gather from what you are saying that
22 pretty soon EB was directing the off-site surveys and you just sort of
23 phased out.
24
25

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1 MULLEAVY: We just phased out, and then we went over to the Unit 2's control
2 room, and this was later on. We went to over Unit 2's control room and we
3 began our involvement totally then with Unit 2 and directing HP activities
4 in the auxiliary buildings.

5
6 ESSIG: You were working at that time, 7:00 p.m. to 7:00 a.m. So that
7 Friday evening when you came in some time during that particular shift then
8 you were

9
10 MULLEAVY: I was slowly being phased out.

11
12 ESSIG: And then at some point you decided, well, it appears like I have
13 been phased out of directing the off-site surveys and so I will get with
14 Dubiel and...

15
16 MULLEAVY: That is right, and we began our efforts in other directions. In
17 fact, I was called by this particular individual over there to... He
18 wanted to talk to me.

19
20 ESSIG: Who was that?

21
22 MULLEAVY: Mr. Graber. I didn't know who he was, and he asked me to come
23 after 7:00 in the morning. Over there he talked to me for two days, and
24 finally one 7:00 o'clock in the morning I received a call from him and he
25 said I am still waiting for you.

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1 ESSIG: This would of been Saturday morning?

2
3 MULLEAVY: Yes. So I went over and talked to him, and he told me--he
4 showed me an organizational chart which I had not seen before, and he said
5 you realize you are now working for me. "Oh," said I. (Laughter) He said
6 does that cause you any problems, and I said no it didn't. However, I had
7 wished that Met-Ed had told me this.

8
9 ESSIG: Did Dubiel have no knowledge of this?

10
11 MULLEAVY: No. Well Dubiel had also been asked to report to Graber, and
12 Graber told me that he had had trouble in getting with Dick. He thought
13 Dick was avoiding him, and I said well I didn't really think he was but he
14 has been pretty busy. Dick didn't know at that particular time, I don't
15 believe, of this new structure. So that happened. I don't know why. The
16 structure is still there; however, in asking about it through Met-Ed we
17 were told that that didn't exist, and don't worry about it.

18
19 ESSIG: OK. I think that's about all the questions I have, unless you have
20 some additional ones Dale (Donaldson).

21
22 DONALDSON: No, I don't. Tom, you have been through it. You are one of
23 the handful of experts in the world right now, from the School of Hard
24 Knocks, in the area of response to incidents of this magnitude. What I
25 would like you to do is. I am going to give you the floor for the rest of

1 the tape and I want you to discuss some things. I want you to discuss the
2 effectiveness of your emergency plan in general. I prefer to have you
3 discuss the strengths as well as the weaknesses. Any recommendations you
4 have for anyone else who may be in your position, either in the planning
5 end or the response end. Recommendations for us, the Commission, in terms
6 of additional rulemaking, if you think that's necessary. In conclusion,
7 gripes, complaints anything at all--let it hang out.

8
9 MULLEAVY: The plan itself basically is good as far as it goes. I will
10 tell you why I say that in a minute. The equipment that we had to use did
11 indeed malfunction, as most equipment will do on occasion, and always seems
12 to when you need it most. Perhaps we should have had more to select from,
13 say six or seven kits, so that needing maybe four or five you would of had
14 that equipment. Statistically, maybe it would of all worked better that
15 way. The organization and so forth I have no problem with the organization
16 of it. Communications as far as offsite teams leaves a little bit to be
17 desired. The walky-talkies offsite, and so forth. Getting them is a
18 chore. Making them work--in some areas, we had lost communication with
19 some individuals. They had the foresight as we had directed them to do, to
20 go to public telephones and call us back. The incoming communications,
21 then, to the plant under those circumstances I think should be individual,
22 where an individual can call back to us on an own separate line or on a
23 couple of lines in. We are deficient in the incoming call lines, which I
24 believe we only have three trunk lines coming in. So, I may be incorrect
25 in that, but there are not that many phone lines coming into the plant that

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1 an individual on an offsite team could select a line knowing that he would
2 get through right away to a party such as the ECS. A little deficient on
3 that. If his walky-talky doesn't function, then we know there are some
4 areas in which they dont. We lost them for periods of time in the outside
5 world, which was difficult and delayed in getting results back.

6
7 Getting results back, and so forth, if we could have analyzed it quicker,
8 rather than sending it off to the State would have been a help for use. We
9 could have determined whether we did or did not have iodine right off the
10 bat, and whether it alleviated a lot of fears and so forth that we did
11 have.

12
13 The structure again of our particular thing. I have no problem with the
14 structure of it. The communications in plant was good as it could be. It
15 was exciting, it was a lot of excitement, a lot of concerns, a lot of
16 people get involved. We had always said that the structure would fall
17 apart because there would be so many people involved that those who were
18 supposed to be making the decisions wouldn't be allowed to. For the first
19 couple of days that did not hold true. We did make some decisions. We had
20 communications in-plant and so forth. Later on too many people got involved.
21 It was very difficult to know who to follow, who was making the decisions,
22 who was doing what. I think that in discussing that aspect with many
23 different outfits who were here, they also felt some confusion on who to
24 follow, who was really running this show. Very difficult to find that out.
25 I dont know if that could be corrected or not, because in an incident or

1 disaster type of situation it is very hard for one individual to become
2 predominant and actually have that individual calling the shots. There is
3 too many people involved. That made it hard. We didn't know who to follow.
4 We didn't know who was running the show. As I mentioned before, I found
5 that I was working for somebody else who thought that they were directing
6 the HP activities. It was very difficult. The instrumentation and so
7 forth--fine, we don't have any problem with that,... mention maybe we
8 should have more to select from. Outside concerns and offsite consultants
9 and so forth were beneficial. They had ideas. We followed some of them,
10 and thought we should follow some individuals' suggestions. They were good
11 ones. Some had poor suggestions. We balked at them and we didn't follow
12 those. That's it. But all and all it is hard in a particular scenario to
13 direct day after day activities in the drill. As I said before, the drills
14 never lasted that long. During the fourth and fifth day, how can you
15 possibly know how to react, because you are out of the immediate situation,
16 you are starting to recover. You recover the operation. It should be
17 taken into more detail in emergency planning.

18
19 DONALDSON: Just one final comment or question in the area of drills. Do
20 you feel... I guess this one was an intuitively obvious kind of statement.
21 Drill programs--do you feel they are necessary?

22
23 MULLEAVY: Oh, yes.

24
25
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1 DONALDSON: Do you feel the fact that the NRC observes the drills causes a
2 program to be upgraded and a little more attention given to it?

3
4 MULLEAVY: Oh, sure, I do.

5
6 DONALDSON: Do you have any recommendations for the Commission in its
7 inspection and enforcement functions or in future guidance or assisting in
8 the area of emergency planning.

9
10 MULLEAVY: I think that more effort should be put on the State. I thought
11 that the State could have been better. They could have helped us a little
12 more. We did communicate with the State on day one, day two, and so
13 forth, and I don't think that their direction helped us an awful lot. I
14 think that just looking at the State's emergency plans is a valid concern
15 for all of us.

16
17 ESSIG: Tom, I appreciate your comments and your candor, and thank you for
18 taking time off work to help us out. I know everybody in the future will
19 be interested in these tapes, and take to heart what you said. I know we
20 will. Thank you.

21
22 MARSH: The time is now 1:36. Tom, just because we are coming to the end
23 of the tape, doesn't mean we have to quit. If you've got more to say,
24 please, I will put more tape on here. If you feel you have covered it...
25

1 MULLEAVY: I think we have covered just about everything. I think anything
2 further would just be rambling on.

3
4 MARSH: OK, at this point then at 1:36 reading 932 on the meter, I am going
5 to terminate the tapes. Let us all say thank you for your time recognizing
6 you are coming on for full work shift. OK, the time now is 1:36.

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