

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

1 In the Matter of:
2 IE TMI INVESTIGATION INTERVIEW
3 of Thomas L. Mulleavy
4 Supervisor, Radiation Protection
5
6
7
8

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

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12 June 4, 1979
(Date of Interview)
13
14 July 6, 1979
(Date Transcript Typed)
15 300
(Tape Number(s))
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21 NRC PERSONNEL:
22 Dale E. Donaldson
23 Gregory P. Yuhas
24 Owen C. Shackleton
25

988 356

7909-90176

T

1 SHACKLETON: The person speaking is Owen C. Shackleton, the time is now
2 12:55 a.m., pardon me, p.m., eastern daylight time, June the Fourth, 1979.
3 This is an interview of Mr. Thomas, middle initial L and in Low, Mulleavy,
4 last name is spelled M as in Mike, U-L-L-E-A-V-Y. Mr. Mulleavy is a Super-
5 visor, Radiation Protection, Three Mile Island Nuclear Power Station,
6 employed by the Metropolitan Edison company. Present to conduct this
7 interview from the U. S. Nuclear Regulatory Commission is Mr. Dale E.
8 Donaldson, first name usual spelling, D as is David, A-L-E, middle initial
9 E, as in Easy, last name, Donaldson, D as in David, O-N-A-L-D-S-O-N. Mr.
10 Donaldson is a Radiation Specialist assigned to Region I. Also present is
11 Mr. Gregory P. Yuhas. First name G as in George, R-E-G-O-R-Y, middle
12 initial P as in Peter, last name Yuhas, Y as in Yellow, U-H-A-S. Mr. Yuhas
13 is a Radiation Specialist assigned to Region I. My name Owen C. Shackleton,
14 the first name O as in Oboe, W-E-N, middle initial C as in Charlie, last
15 name Shackleton, S as in Sam, H-A-C-K-L-E-T-O-N, I am an investigator
16 assigned to Region 5. This interview is taking place in trailer 203 which
17 is parked on the south side of the south security gate at the Three Mile
18 Island Nuclear Power Station. Just prior to this interview I discussed
19 with Mr. Mulleavy the two page document that we originally showed him from
20 the U. S. Nuclear Regulatory Commission which he initially signed on the
21 first interview on April 24, 1979 in which it advised Mr. Mulleavy of the
22 authority of the U. S. Nuclear Regulatory Commission to conduct this inves-
23 tigation, its scope and also his rights to refuse to be interviewed or to
24 submit any form of a signed statement. Mr. Mulleavy do you still still
25 understand the information contained in this document and understand that
 it still prevails at this time.

1 MULLEAVY: Yes I do.

2

3 SHACKLETON: And do we the U. S. Nuclear Regulatory Commission have per-
4 mission to tape this interview?

5

6 MULLEAVY: Yes sir.

7

8 SHACKLETON: And would you like a copy of the tape and or a copy of the
9 transcript?

10

11 MULLEAVY: I would like a copy of the tape and the transcript.

12

13 SHACKLETON: Alright sir that will be provided to you.

14

15 MULLEAVY: Thank you.

16

17 SHACKLETON: Also at the, prior to going on tape I presented to Mr. Mulleavy
18 a one page document which explains to him Section 1001, Title 18, U. S.
19 Code concerning fraud and false statements and Mr. Mulleavy also signed
20 this document that he understood the paragraph contained on this one page
21 document. And now gentlemen I will turn the meeting over to Mr. Yuhas to
22 conduct the initial part of the interview or is that the way you would like
23 to do it gentlemen?

24

25

1 YUHAS/DONALDSON: Alright, fine.

2
3 DONALDSON: I want to clear up just a quick point on emergency accounta-
4 bility procedures. On going through some of the documentation, there were
5 several memorandums issued regarding accountability, one of which was
6 signed by yourself dated October 13, 1978, that outlined a procedure to be
7 followed for a revised accountability technique, I'm going to show you a
8 copy of that memo at this time, and ask you to tell me whether or not you
9 recognize that and acknowledge that you did in fact issue that memo.

10
11 MULLEAVY: Yes, I did.

12
13 DONALDSON: Ok, I'd like to call your attention to the bottom area that's
14 highlighted in red and reads, "The proper procedures would be changed to
15 reflect the new accountability of non-essential personnel."

16
17 MULLEAVY: That's correct.

18
19 DONALDSON: To your knowledge was that procedure ever updated and corrected?

20
21 MULLEAVY: I can't tell you that right now, I don't know, I'd have to look.

22
23 DONALDSON: Do you know who's responsibility it was to change that procedure?
24
25

1 MULLEAVY: Len Landry was handling changes and instrumental in changing the
2 procedure.

3
4 DONALDSON: Is it a normal practice to issue a memorandum to supercede an
5 existing procedure.

6
7 MULLEAVY: No it isn't.

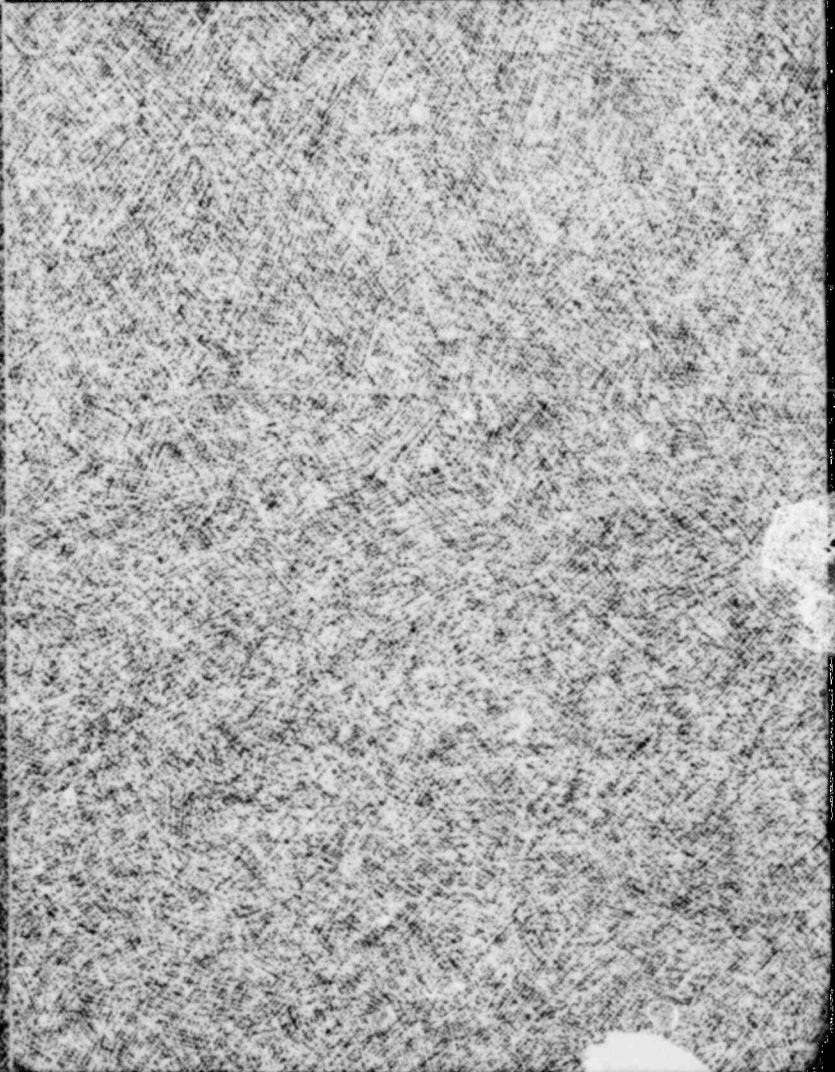
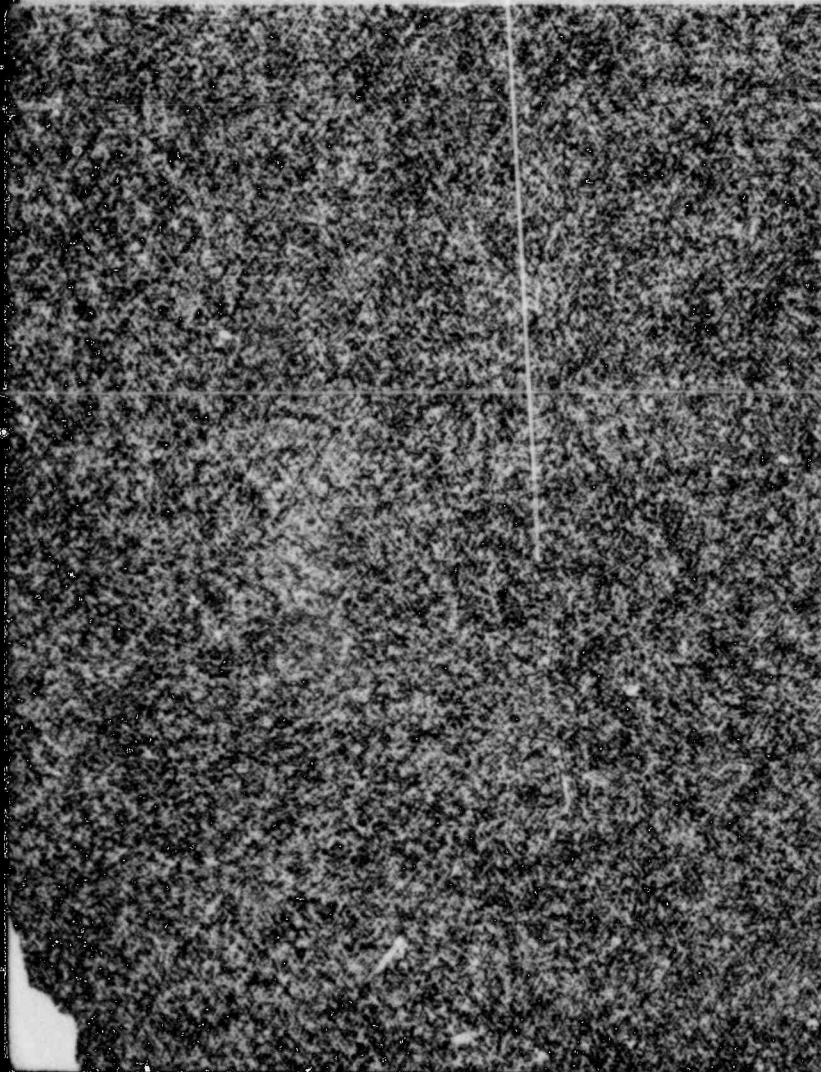
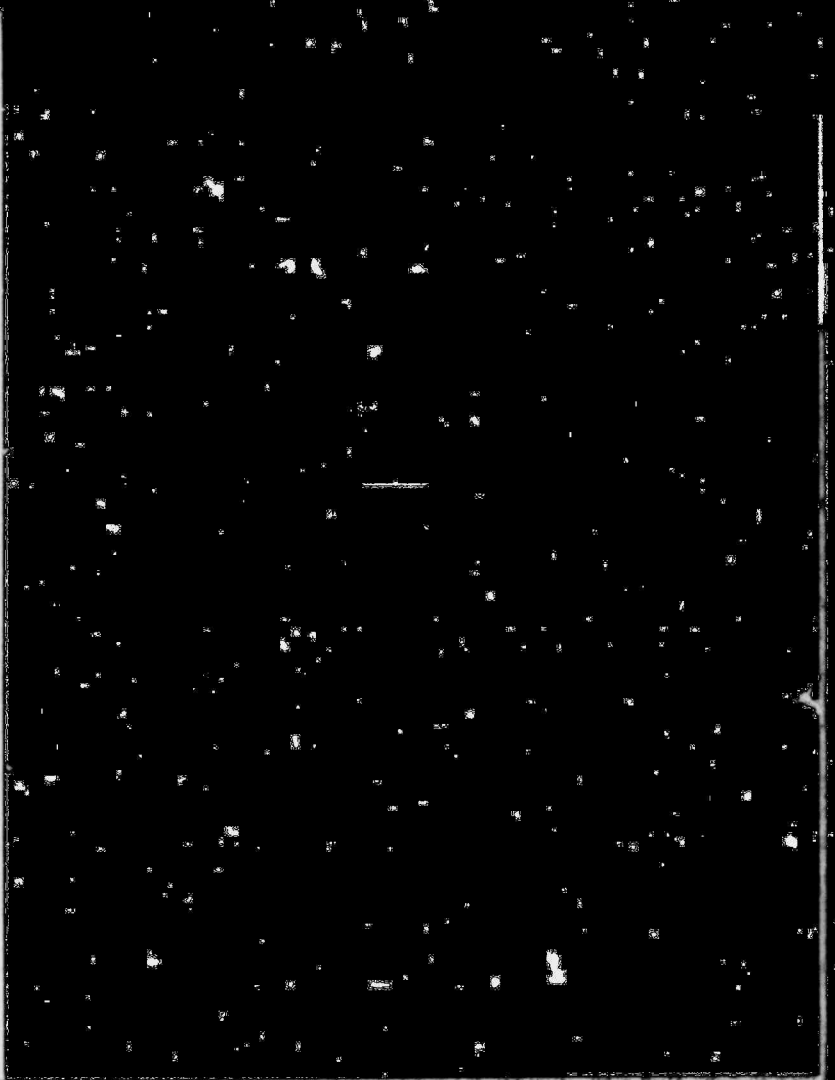
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9 DONALDSON: What is the requirement regarding the Emergency Plan Imple-
10 menting Procedures, prior to implementation?

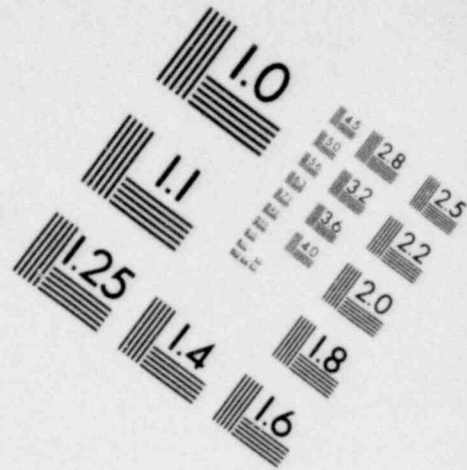
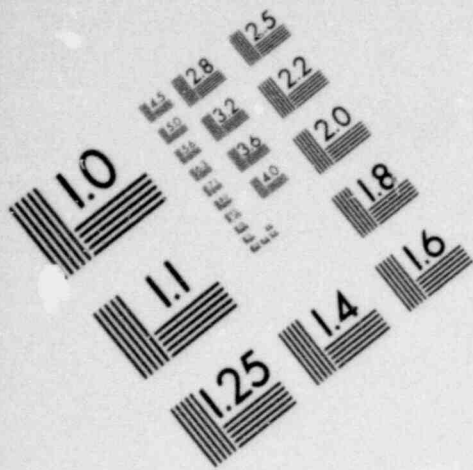
11
12 MULLEAVY: Either a TCN or PCR.

13
14 DONALDSON: And had that been, had a TCN or PRC, that is a Temporary Change
15 Notice or a Permanent Change Request been issued at the time this memo was
16 distributed.

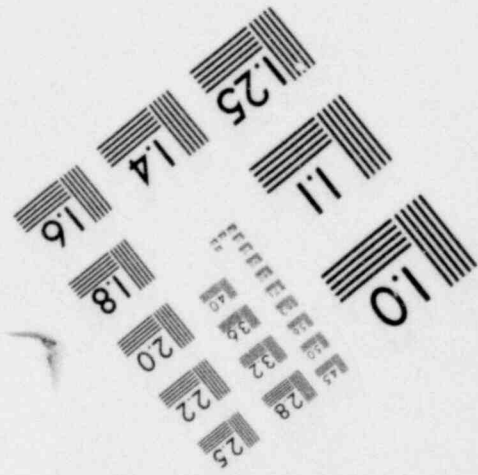
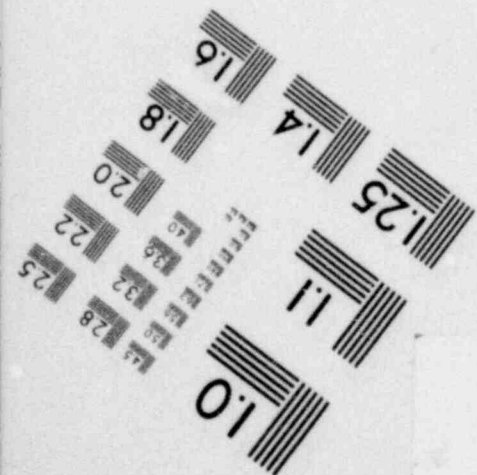
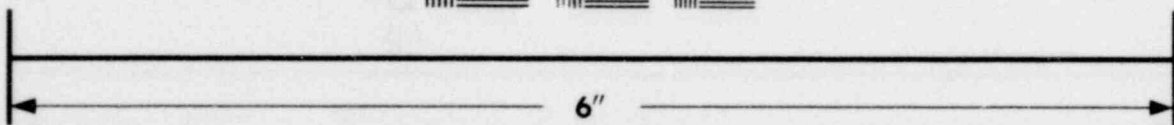
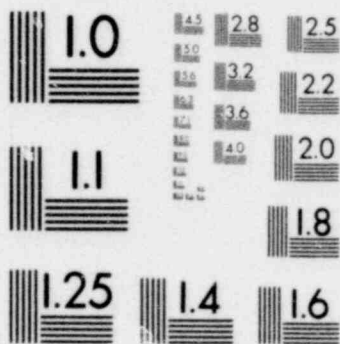
17
18 MULLEAVY: I can't be sure.

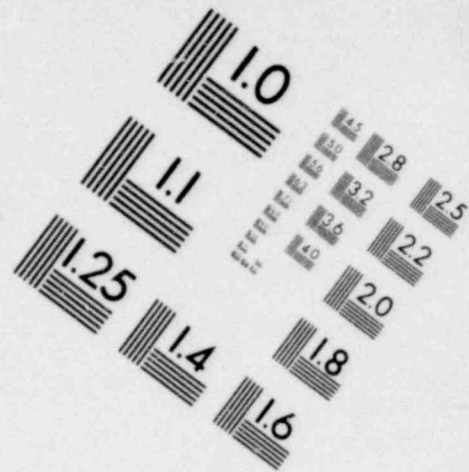
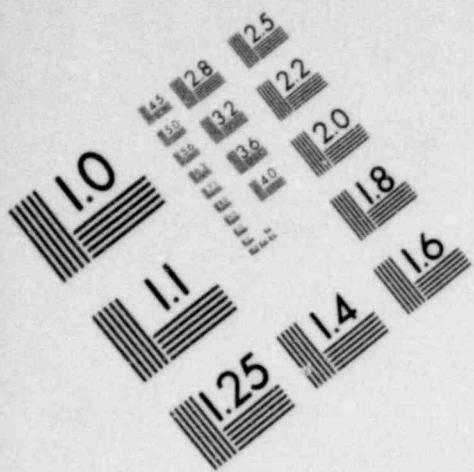
19
20 DONALDSON: Let me ask you now, I'll call your attention to another memoran-
21 dum dated November 3, 1978, and it was issued by W. J. Busansky, Assistant
22 Site Protection Supervisor and it also outlines in somewhat more detail the
23 texts of your memorandum of October 13, have you ever seen that memorandum
24 before?
25



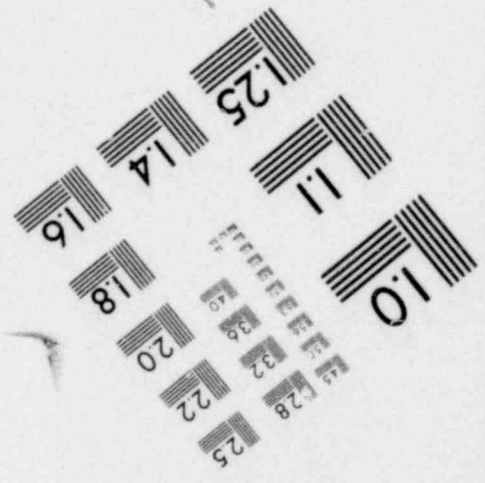
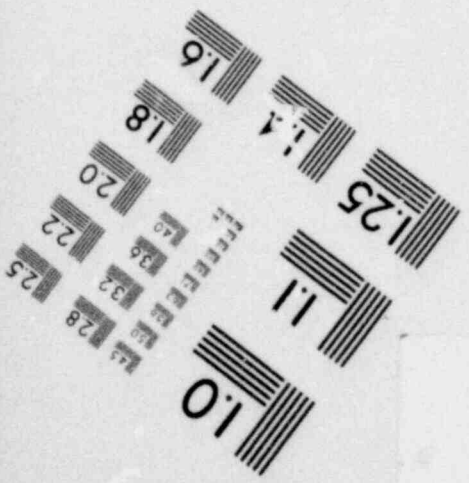
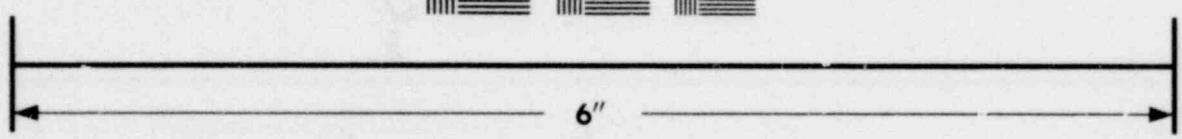
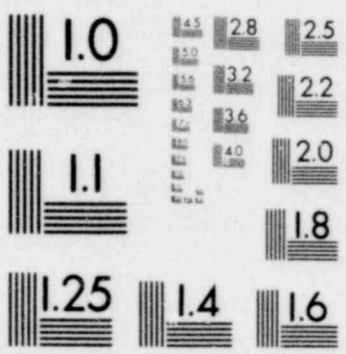


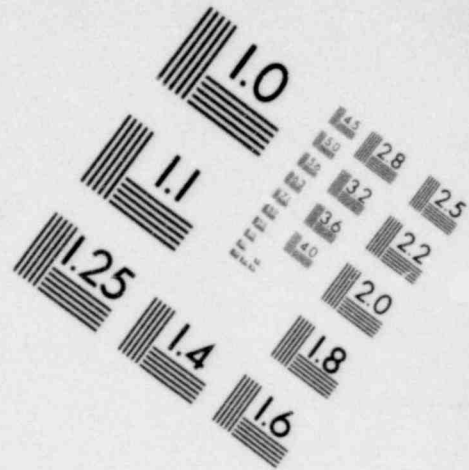
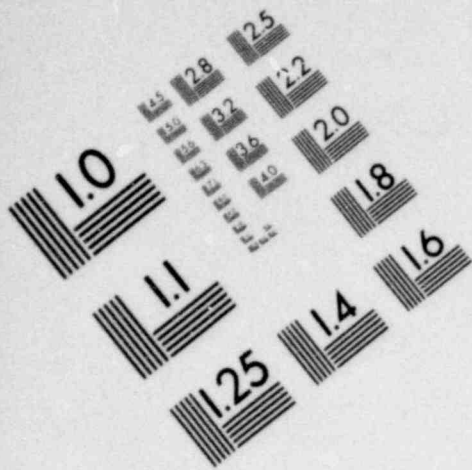
**IMAGE EVALUATION
TEST TARGET (MT-3)**



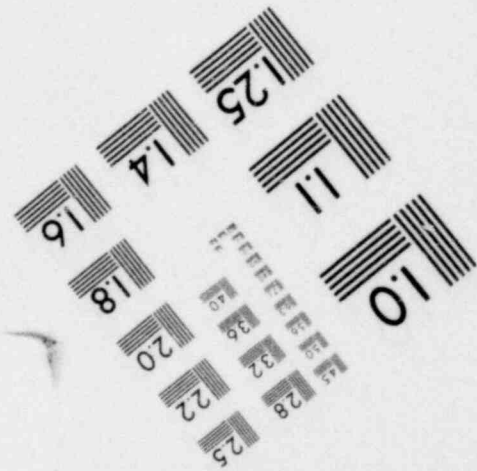
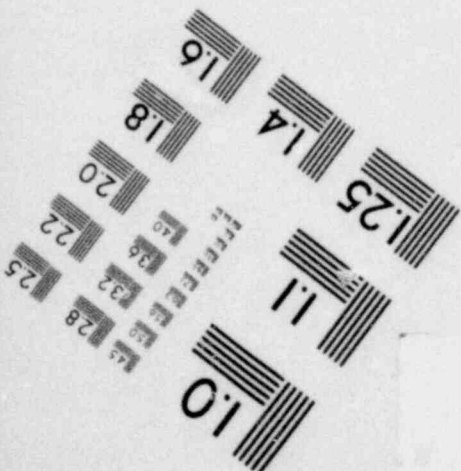
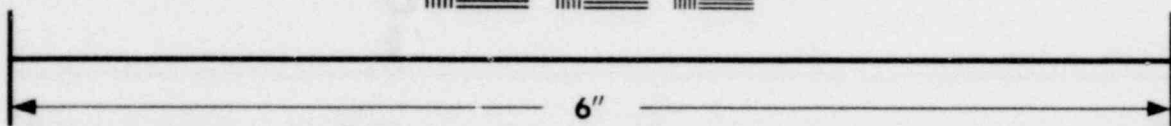
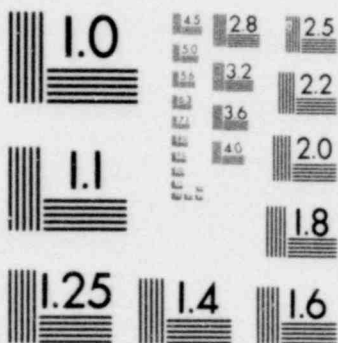


**IMAGE EVALUATION
TEST TARGET (MT-3)**





**IMAGE EVALUATION
TEST TARGET (MT-3)**



1 MULLEAVY: Yes I have. Ok, yeah.

2
3 DONALDSON: Did you inquire or pursue that memorandum at that time to
4 determine whether or not the procedures had in fact been upgraded?

5
6 MULLEAVY: No.

7
8 DONALDSON: The existing procedure that I have with a date on it for Proce-
9 dure 1670.7 entitled Emergency Assembly Accountability and Evacuation, was
10 dated 2/15/78 and is Revision 3, I'm sure your familiar with it but again
11 I'll let you take a look at it, now supposedly this is a controlled copy,
12 copies of controlled procedures that we are on distribution for. Is that
13 or would you have any way of knowing whether that is a current procedure?

14
15 MULLEAVY: I wouldn't have any way of knowing at this, this should be
16 stamped in red if it is a controlled copy.

17
18 DONALDSON: Ok, we received copies rather than the exact copy. In other
19 words it is a controlled copy but it's not the original controlled as it
20 were.

21
22 MULLEAVY: If it is a control copy this should be the most recent one
23 according to Carol Nixdorf's group.
24
25

989 001

1 DONALDSON: Ok.

2
3 MULLEAVY: That should be the one currently in effect.

4
5 DONALDSON: One final question regarding some activities that you were
6 assigned prior to the twenty-eighth and I'm referring now to a memorandum
7 regarding radiation emergency drills, this was a memorandum issued to a
8 number of individuals where actions items were assigned for resolution,
9 where the memorandum was issued over the signature of Mr. L. J. Landry, the
10 title he used at that time was Emergency Drill Coordinator, and there are
11 three action items listed on here that relate to you. One is to insure
12 that newly revised site maps have replaced those outdated, the second is
13 emergency monitoring equipment must have inventory and operational checkout
14 prior to use, especially the SAM-2 and the third item listed for your
15 action was the change to accountability procedure 1670.7. I'll show you
16 this memorandum and ask you to comment on whether or not that action was
17 completed.

18
19 MULLEAVY: The first two actions were, the third was not. As far as...

20
21 DONALDSON: Are you acknowledging then, then it was as far as you were
22 aware your responsibility to initiate the change to the accountability
23 procedure?
24
25

989 002

1 MULLEAVY: Yes sir.

2
3 DONALDSON: And I would be correct in assuming that if the procedure were
4 current that someone else would have issued the change but to your knowledge
5 you did not.

6
7 MULLEAVY: That's correct.

8
9 DONALDSON: One other question in the area. . . I'd like to get into training
10 a little bit. There have been a number of interdepartment memorandum
11 either either typed or handwritten relating to the development of, of
12 lesson plans for training in the emergency category, now I believe that the
13 statement in your emergency plan is that there would be lesson plans developed
14 and that appropriate tests or assignments would be assigned for each indi-
15 vidual or persons who attend the training. In going through a number of,
16 of memoranda which had been entered into the record as a group under the
17 number TM508, for reference purposes, I find a number of memos from the
18 training section basically Frank McCormick, starting sometime back around
19 June or July and going all the way up through the second of, I'm sorry
20 through January, February of 1979 regarding the fact that the existing
21 lesson plans were inadequate and that lesson plans to meet the requirements
22 of the emergency plans were to be submitted. To your knowledge were these
23 lesson plans ever completed and submitted?
24
25

989 005

1 MULLEAVY: Yes they were.

2
3 DONALDSON: At approximately when were these lesson plans completed?

4
5 MULLEAVY: I can't give you the date, I really don't know. That was handled
6 through Frank McCormick and Len Landry.

7
8 DONALDSON: Referring now there was a memorandum dated 9/21/78, this
9 was a discussion with yourself, Mr. Beers, and Mr. McCormick, that occurred
10 on the twenty-first, and discusses the various requirements of training in
11 procedure 1670.9, and it indicated among other things where training was
12 still required to meet the requirements of that procedure, it indicated the
13 inadequacy of lesson plans that had been submitted, and that everyone
14 agreed that lesson plans must be upgraded to cover the requirements of
15 1670.9. Am I to assume then that the upgraded lesson plans did in fact
16 take place sometime after that meeting?

17
18 MULLEAVY: I believe so.

19
20 DONALDSON: So would I also be correct in assuming then that any training
21 that had been conducted prior to September 21 or the development of these
22 lesson plans would have been conducted without a lesson plan?

23
24 MULLEAVY: I believe you're saying, was the inadequacies in the lesson plan
25 there. What are you asking me? I'm not sure.

1 DONALDSON: It, it had been determined that the lesson plans did not result
2 in training that met the requirements

3
4 MULLEAVY: No no, no no. It said the lesson plan was inadequate, it didn't
5 say the training was inadequate. That the lesson plan he was using could
6 have been inadequate as stated or as written. I don't believe it said the
7 training was inadequate.

8
9 DONALDSON: It stated that. . . indicated inade. . . of lesson plans sub-
10 mitted for the section.

11
12 MULLEAVY: Right, right. That's a paperwork item.

13
14 DONALDSON: Ok. Then I guess what I'm saying is that the guidance that the
15 individual used for conducting that training. . . could have been outside
16 of the bounds that is described by the plan, in other words the general
17 areas to be covered may not have been covered?

18
19 MULLEAVY: May not have been covered completely, on the lesson plan itself.

20
21 DONALDSON: Or in the training?

22
23 MULLEAVY: No, I can't say in the training?
24
25

1 DONALDSON: How would we, how would we know whether or not the training
2 that was conducted did in fact meet the requirements. Is there some nota-
3 tion somewhere made of what was presented and what documents were used?
4

5 MULLEAVY: I believe in looking over the particular records, the material
6 that was in the document was presented, I would have to take a look at the
7 lesson plan to see where the inadequacies are.
8

9 DONALDSON: How would you find out what lesson plan or what items had been
10 covered in the training.
11

12 MULLEAVY: Going through the lesson plan.
13

14 DONALDSON: How would you know whether that lesson plan was in fact. . .
15

16 MULLEAVY: And speaking to the instructor himself.
17

18 DONALDSON: Ok. Call your attention to a training program administrative
19 form. This is more or less for example.
20

21 MULLEAVY: Right.
22

23 DONALDSON: I'm sure your familiar with these forms. . .
24
25

1 MULLEAVY: That's correct.

2
3 DONALDSON: For example under Section 8 after the signature of the training
4 coordinator, there's a statement that says, "attached lesson outlines and
5 items covered."

6
7 MULLEAVY: Right.

8
9 DONALDSON: Do you routinely do this?

10
11 MULLEAVY: Not on each one, no. There is a general outline, and then every
12 subsequent class we just refer to that.

13
14 DONALDSON: Ok, I note on this one for example, there is no reference.
15 What, what outline or lesson outline or topics would you have covered in
16 the Emergency repair party training on this date for example?

17
18 MULLEAVY: There is a lesson plan, there is an outline, I can't tell you
19 right at the moment what it is, but it's the grouping, I believe it's the
20 grouping of where the individuals come, where there clothing is, what is
21 expected of them, the emergency exposures that they could receive. . .

22
23 DONALDSON: Ok. . .
24
25

1 MULLEAVY: Where they form, I'm . . .

2

3 DONALDSON: You would have no way of knowing what it is, you would have no.

4 . .

5

6 MULLEAVY: . . . Not be knowing with what you have there, no.

7

8 DONALDSON: Ok. What . . . as an instructor in a course under the Emergency
9 Plan, what is your requirement or procedure when someone notifies you that
10 the training that they have had appears to be problematic, that is they
11 don't feel they've gotten what they should have gotten out of it, or they
12 feel incapable of doing what they're suppose to do after that training has
13 been conducted?

14

15 MULLEAVY: By procedure?

16

17 DONALDSON: By procedure.

18

19 MULLEAVY: I don't believe there is anything by procedure, is there? No
20 doubt there must be.

21

22 DONALDSON: We'll go to the . . .

23

24 MULLEAVY: Is he reaching for the procedure?

25

989 003

1 DONALDSON: Training procedure 1670.9. . .

2
3 MULLEAVY: If a guy comes in, we'll talk to him usually.

4
5 DONALDSON: I'm reading from section 3 of 1670.9, entitled Emergency Training
6 and Emergency Drills, under paragraph 3, Training Programs, the highlighted
7 text here states that the identification and correction of weak areas, as
8 identified in each program will be the responsibility of each instructor.
9 I wonder if you could briefly tell me how you identify, and correct weak
10 areas in training when you conduct it?

11
12 MULLEAVY: If I'm conducting it myself and if I go off on a tangent what
13 they want to hear, that's very hard to list that in a lesson plan, but if
14 they feel an area is weak, we go off with that group and correct that, that
15 might not be a weak area in another group.

16
17 DONALDSON: Has anyone approached you, either within the last year any time
18 stating that they felt the training that they had had in a particular area
19 regarding the emergency plan deficient and they absolutely needed to have
20 some additional training in order to perform their duties?

21
22 MULLEAVY: No not specified that way, no.

23
24 DONALDSON: How was it specified?
25

1 MULLEAVY: There had been complaints on training, yes indeed, there are
2 complaints always on training. That there never is enough.

3
4 DONALDSON: Ok, what were the nature of these complaints, who made these
5 complaints?

6
7 MULLEAVY: Oh I can't tell you really. I . . .

8
9 DONALDSON: You didn't think enough to write them down, or or, they weren't
10 that significant, or . . .

11
12 MULLEAVY: No, in your speaking of emergency repair party, if they were
13 that significant, it was reported back to their particular department who
14 at the time, was conducting that training.

15
16 DONALDSON: What about other areas, did you have any, obviously I don't
17 know if you had any complaints. . .

18
19 MULLEAVY: Yes there were some, as a matter of fact now that you think
20 about it there were auxiliary operators who felt that they were inade-
21 quately trained on the SAM-2's. This was discussed, I do recall this one
22 is discussed with Len and we thought about either giving it maybe twice a
23 year, rather than on a requal program and we got Len involved in the requal
24 training on the SAM-2's because he was running the calibration of them.
25

1 DONALDSON: Were there any other individuals outside of the auxiliary
2 operators who expressed the need for additional training in the area of the
3 SAM-2?

4
5 MULLEAVY: Yes, our own people.

6
7 DONALDSON: Ok, and how were those comments handled?

8
9 MULLEAVY: Those comments at the time I believe we had one shift, we said
10 that shift would be getting that particular training, we did not however
11 get to it.

12
13 DONALDSON: You did, you did not make the corrective training or you just
14 did not get around . . .

15
16 MULLEAVY: We did not get to that training, I believe there was one shift
17 that had not specifically had the formal training.

18
19 DONALDSON: Tell me how do you evaluate whether or not in the case of SAM-2
20 training the individual has in fact grasped the purpose of the training
21 program and whether or not he can operate the equipment when the training
22 is over?

23
24 MULLEAVY: Questioning during the session and response to the training
25 session.

1 DONALDSON: So by questioning the person you find out that they can operate
2 this piece of equipment?

3
4 MULLEAVY: We give them all the opportunity, we give all of them the oppor-
5 tunity to run the equipment after the session, I can't tell you whether
6 everyone came up "hands on", I know we generally end the session with
7 individuals grouped around the table where the instruments are and then we
8 show them each step. Now have them all turn the knobs, perhaps not.

9
10 DONALDSON: Again there are, are comments that, in the training program
11 relative to correction of weak areas, and there's also a statement that
12 tests or assignments will be given to check the progress of the student.
13 What kind of tests do you give?

14
15 MULLEAVY: One, I've forgotten which session, there are a couple of exams
16 that we give the individuals written exams, the other tests on that parti-
17 cular one on the SAM-2, rather than giving them a written exam we do provide
18 that "hands on" if they want to take that opportunity, there.

19
20 DONALDSON: So you are willing to certify someone as qualified to perform
21 lets say, radiological monitoring activities using the SAM-2 even though
22 they may not have demonstrated an ability to use the equipment?

23
24 MULLEAVY: That's correct. Once they had been through that session we felt
25 they were able to recognize that equipment, and by procedure, to run it.

989 012

1 DONALDSON: Ok, then your, your evaluation of the effectiveness of the
2 training that you normally outline in your administrative form under Section
3 7, is more subjective than objective?

4
5 MULLEAVY: That's true.

6
7 DONALDSON: How would you categorize the validity of any evaluation that
8 might come based upon on that kind of subjective evaluation?

9
10 MULLEAVY: In knowing the group that you're teaching.

11
12 DONALDSON: Then if it could be determined later that in fact training was
13 not adequate could we question the validity of that evaluation?

14
15 MULLEAVY: You could if an individual said no, afterwards that he didn't
16 feel he was qualified but at the time he felt he was. . .

17
18 DONALDSON: Would that also be true if the individual. . .

19
20 MULLEAVY: It could happen . . .

21
22 DONALDSON: . . . Demonstrated, demonstrated his inability to operate the
23 equipment, say through a drill, or something of that nature?

1 MULLEAVY: Probably, if we took them out and drilled them they may not know
2 something specifically, but I feel after the session they should recognize
3 whether they are able or not sure at the time.

4
5 DONALDSON: Would you feel safe in saying though that after a session, you
6 could in fact definitely state, yes or no that each individual in. . . who
7 had taken the training could operate or couldn't operate?

8
9 MULLEAVY: I think so, I think so, they would be at least be able to recognize
10 and by procedure, run the instrument.

11
12 DONALDSON: Ok, so then you would say then that your evaluations, the
13 evaluations that you have written would be accurate?

14
15 MULLEAVY: I would hope so.

16
17 DONALDSON: Ok.

18
19 YUHAS: A couple of quick questions. First off, are you familiar with an
20 inventory of 0 to 20r pocket dosimeters?

21
22 MULLEAVY: Of an inventory?

23
24 YUHAS: I have reviewed your calibration records and I note that in January
25 you calibrated fifteen 0 to 20r pocket dosimeters that apparently normally
you stored in the Unit 1 Chem HP area.

989 014

1 MULLEAVY: In the, in the drawer in the lab area, yes.

2
3 YUHAS: Do you know what became of those during the emergency?

4
5 MULLEAVY: No I don't.

6
7 YUHAS: Did you issue 0 to 5r pocket dosimeters to personnel when the ECS
8 was activated on the morning of the twenty-eighth?

9
10 MULLEAVY: Not specifically to my knowledge did we hand them out, no. All
11 were wearing the other pocket dosimeters.

12
13 YUHAS: I have results of airborne activity in the Unit 1 control room of
14 10^{-7} microcuries per cc of iodine on the morning of the incident, do you
15 what the basis of coming up with the iodine number was at that point?

16
17 MULLEAVY: That particular reading could have been on our particular GeLi
18 analysis and if that was capable of being used. . . I don't know what time
19 that sample was taken.

20
21 YUHAS: The time of the sample was the afternoon after the ECS had been
22 evacuated to the control room, you were back in Unit 1 control room and
23 this was like 11:00.

24
25
989 015

1 MULLEAVY: This was in the control room?

2

3 YUHAS: This was in the control room.

4

5 MULLEAVY: Oh, alright, that was done on a SAM-2, I'm sure.

6

7 YUHAS: Where did the SAM-2 come from. . .

8

9 MULLEAVY: The SAM-2 we had brought up to the control room. . .

10

11 YUHAS: Do you know where it came from?

12

13 MULLEAVY: No I don't. We asked to have something set up we could use.

14

15 YUHAS: Briefly let me go over the availability of SAM-2's on the morning
16 of the incident.

16

17

18 MULLEAVY: I may be wrong.

19

20 YUHAS: You had four kits initially. . .

21

22 MULLEAVY: Oh, I know where it came from. . .

23

24 YUHAS: You had one kit in your office. . .

25

1 MULLEAVY: Syd Porter brought it.

2
3 YUHAS: No, Syd Porter wasn't there on the morning of the twenty eighth.

4
5 MULLEAVY: Ok.

6
7 YUHAS: Let me review the availability of SAM-2's. You had one kit in your
8 office, that apparently had a defective SAM-2.

9
10 MULLEAVY: That's correct.

11
12 YUHAS: You had three out in the process center, Egenrieder and another
13 Tech went out, Dupes and they checked these out, they found one of them had
14 an inoperable SAM-2.

15
16 MULLEAVY: That's right, and that's when they called me to find out about
17 the other one.

18
19 YUHAS: Right, ok, so the first team that went out was an onsite team, they
20 took a kit with a good SAM-2. The second team that went out was team
21 Charlie, that went to Goldsboro, they took the kit with the bad SAM-2. And
22 then the third team that went out, team Bravo, was Egenrieder and he took
23 the one remaining good SAM-2.
24
25

1 MULLEAVY: Umhum, ok.

2

3 YUHAS: So to the best of my knowledge, that was. . .

4

5 MULLEAVY: Wasn't one available.

6

7 YUHAS: . . . depleted the whole inventory of SAM-2's available. And I'm
8 at a loss to explain where you came up with a 10^{-7} number for iodine becau
9 to the best of my knowledge from interviews. . .

10

11 MULLEAVY: No, I think all we had was a Ludlum up there.

12

13 YUHAS: That's right.

14

15 MULLEAVY: Now that you mentioned, I didn't have it. The only sample I
16 know was sent off was out to the, that one hospital, and that was an offsite
17 dose. First one I heard, I don't know where that came from. . .

18

19 YUHAS: In other words, we're, we're trying . . .

20

21 MULLEAVY: Yeah.

22

23 YUHAS: . . . To explain, one, why people were on masks, and two, where
24 this huge iodine mill came from because the other indications were short
25 lived noble gases?

989 013

1 MULLEAVY: Why they were on masks, I can answer that, because we were able
2 to read particulate filters. . .

3
4 YUHAS: Right.

5
6 MULLEAVY: And that's why we went to the masks, it was on particulate only,
7 and we then later demonstrated that that wasn't necessary due to the decay
8 which we ran samples continually. . .

9
10 YUHAS: Do you remember about when you came off masks that day?

11
12 MULLEAVY: We came off them in the afternoon and then we went back on for a
13 while, because, and then we found out Unit 2 was also in masks and I discussed
14 with Dick Dubeil who was over in Unit 2, and I was in Unit 1's control
15 room. . . and it seems to me we came on early evening, we came out of the
16 masks.

17
18 YUHAS: The time you were in masks though, you did not have any charcoal
19 absorbing cartridges available, is that correct?

20
21 MULLEAVY: We had them available, but I couldn't read them.

22
23 YUHAS: No, no, let me clarify that, I mean for the masks.
24
25

1 MULLEAVY: Oh, for the masks, no, no, no, no. I thought you meant a collec-
2 tion charcoal.

3
4 YUHAS: Let me change. . .

5
6 MULLEAVY: No we didn't.

7
8 YUHAS: Let me change the subject, are all Rad Chem Techs available to be
9 assigned to the emergency environmental monitoring teams in the event of a
10 radiation emergency.

11
12 MULLEAVY: Yes they are.

13
14 YUHAS: Ok. You indicated earlier that one shift may not have received
15 training in the SAM-2. Do you know specifically who those individuals are?

16
17 MULLEAVY: I think it was Pat Donnachie's shift, I'm not sure. I believe
18 it was his shift.

19
20 YUHAS: When did you become aware that these individuals had not been
21 received rather . . .

22
23 MULLEAVY: About a month before the accident?
24
25

989 020

1 YUHAS: A month before the accident.

2
3 MULLEAVY: Yes.

4
5 YUHAS: Ok. Was. . . did you become aware of it because Donnachie complained
6 to you or something . . .

7
8 MULLEAVY: Yes sir.

9
10 YUHAS: Do you remember, or can you recall the, the connotations of his
11 complaint?

12
13 MULLEAVY: I don't recall the exact words, no but I do recall that he made
14 me aware of that fact that his, I believe it was his complete shift did not
15 have the formal SAM-2 training.

16
17 YUHAS: Who normally inputs training documentations that appear on the
18 station resumes, or the station. . . the individuals training records?

19
20 MULLEAVY: That is a job that I have given to Pete Valez, who is a Radiation
21 Protection Foreman.

22
23 YUHAS: In reviewing the training records, I have a whole stack of training
24 records here that were provided to me by the licensee and it's a computer
25 listing of training provided, and here's this, an example I'm showing you
now, this is a product of those input sheets, is it not?

989 021

1 MULLEAVY: Yes it is.

2
3 YUHAS: Ok.

4
5 MULLEAVY: This is something I believe generated through the training
6 department.

7
8 YUHAS: Alright, ok. The next document I'm going to show you is is
9 something called "Training Program Administrative Form". This form is
10 entitled "Operation and Use of the SAM-2", it indicates that this training
11 was provided on 9/12, 9/13 and 9/14, the location was TMI, the course
12 duration was a two hour session, which was a lecture, the instructors were
13 Mr. Tom Mulleavy and Syd Porter, lists numerous names of people in attendance,
14 the signature of the instructor is T. Mulleavy, dated 9/16/77, signature of
15 the training supervisor is Richard W. Zechman, and the date is not quite
16 clear. On the back of the form, the instructor's evaluation, the following
17 comments appears, "All individuals were responsive to the material as it
18 was presented, they were allowed to use the equipment and each demonstrated
19 his ability to use the equipment", the instructor's signature is Thomas L.
20 Mulleavy dated 9/16/77. Mr. Mulleavy did you in fact fill out that form?

21
22 MULLEAVY: Yes I did.

23
24 YUHAS: Did you list the names on that sheet? Is that your handwriting?
25

989 022

1 MULLEAVY: No. No this isn't, that's . . . I'm not sure it looks like Pete
2 Valez's writing . . . the names.

3
4 YUHAS: Did you sign that sheet on the back?

5
6 MULLEAVY: Yes I did.

7
8 YUHAS: Did those people in fact receive that training on that date, Septem-
9 ber 16, '77.

10
11 MULLEAVY: 9/12, 9/13 and 9/14. I cannot be sure right now whether all
12 those individuals were or were not there. I did sign this, I did make this
13 form out with the instructors evaluation, I do recall the incident because
14 Syd Porter was the one who set the classes up and I made this out for him
15 and I did sign it.

16
17 YUHAS: So what you're saying is you do not know . . .

18
19 MULLEAVY: The names, the names . . .

20
21 YUHAS: Whether or not the people attended the course?

22
23 MULLEAVY: The names on there are not my writing
24
25

989 025

1 YUHAS: Do you know if those people attended the course?

2
3 MULLEAVY: I can't tell you whether or not they did right now, it says here
4 they did, and I assume this is correct, but I do see Donnachie's name here.

5
6 DONALDSON: Did you check the attendance list to find out if they had in
7 fact attended before you signed the form indicating. . .

8
9 MULLEAVY: I did not.

10
11 DONALDSON: Is this a common method of, of completing documentation of
12 training someone else fills out the attendance list for you if you've been
13 the instructor?

14
15 MULLEAVY: No.

16
17 DONALDSON: And you sign it?

18
19 MULLEAVY: It was filled out this way because Syd Porter is not here, and I
20 did attend those three sessions, so therefore I made it out for him.

21
22 YUHAS: Procedure 1670.9, "Rad Mon, Monitor Team Training", in that course
23 outline it says that the individuals suppose to be trained for the equipment
24 located in the emergency kits. You'll see on the training record in front
25 of you that that was provided apparently 9/28/78 and I think you were the
instructor on that, is that correct?

989 024

1 MULLEAVY: Where are we now?

2
3 YUHAS: Look at these up here, recent months.

4
5 MULLEAVY: Oh, ok. Now what, what was your question? Did I teach this.

6
7 YUHAS: Did, did you teach that course?

8
9 MULLEAVY: I may have, I don't know, I don't recall right off the bat.

10
11 YUHAS: Ok, when you teach that course, Rad Monitor Team Training, does
12 that include SAM-2 training?

13
14 MULLEAVY: Yes.

15
16 YUHAS: At this time I'd like to show you a training program administrative
17 form Rad Monitor Team Training, TMI, the training was reported 9/28/78, and
18 it lists the names of Pyke, Donnachie, Dimeler, Heilman, and Mulleavy.

19
20 MULLEAVY: Ok.

21
22 YUHAS: Do you remember performing that that session?

23
24 DONALDSON: Tom here's the second page of that I have on this . . .
25

989 025

1 MULLEAVY: Ok, maybe we did, I don't remember. I'd like to verify their
2 writing on that, that looks like they signed it.

3
4 YUHAS: Those individuals have indicated with the exception of yourself,
5 that they did in fact sign these sheets.

6
7 MULLEAVY: They did, ok. Alright.

8
9 YUHAS: Did you sign your name to that sheet.

10
11 MULLEAVY: That is my writing, yes.

12
13 YUHAS: Did that, did that course follow the outline as described by the
14 procedure?

15
16 MULLEAVY: It should have, yes.

17
18 YUHAS: Did it include SAM-2 training?

19
20 MULLEAVY: Yeah, yeah. . .if that's . . .

21
22 DONALDSON: Is it possible. . .

23
24 MULLEAVY: Wait, wait, now just . . .
25

989 025

1 DONALDSON: Is it possible that someone else . . .

2

3 MULLEAVY: It is . . .

4

5 DONALDSON: . . . Filled this form out for you and handed it to you and
6 told you what it included and had you sign it? Who's writing would that
7 be on top where it says, Lesson Course the Rad Monitoring team training and
8 where it says, TMI, is that your writing?

9

10 MULLEAVY: No it isn't.

11

12 YUHAS: Is the back page of that your writing. . .

13

14 MULLEAVY: This is mine, yes.

15

16 YUHAS: . . . The instructors evaluation?

17

18 MULLEAVY: Yes, this is mine, but I'm not sure whether this is 1690, or
19 1670.9, I do remember a session in the lab which we went through. . . no, I
20 know what this is, this is not that. This session right here was on a
21 response to the technicians to the emergency plan because there was some
22 question by this particular group on what would they do and who could take
23 over for myself, this was a structural thing, that's what this is.

24

25

989 027

1 YUHAS: So your indicating that the, the form that you signed, is in fact
2 not representative of what the training is describing according to procedure.
3

4 MULLEAVY: That's true, that's true. This is not correct here.
5

6 DONALDSON: I wonder if you'd comment then on your instructors evaluation
7 which I'll read into the record, it states, "Individuals asked many questions
8 and after the session I feel that they are now able to conduct themselves
9 in an emergency in an acceptable manner."
10

11 MULLEAVY: Yes, alright fine. Now, there, there are many things that they
12 must do in an emergency, and what brought this on is the fact that they
13 told me, do I go to the control room, do I stay here, what do I do when
14 you're not here, so that's what spurred this particular one. . . now what
15 was the date on this? 9/20/78, yeah. Cause this was before our drill last
16 year. And this is what they had questions on and that's what we went over.
17

18 DONALDSON: Now you appear to be very responsive to their concerns about
19 what they would do if you were not here. . . again I guess I wonder why
20 since their primary duty would be working offsite teams, and they had made
21 you aware of the fact that they didn't know how to operate the SAM-2 . . .
22

23 MULLEAVY: No their primary duties before they go offsite at night are
24 where do they structually go, before the other individuals come in, who
25 sends them offsite, where does the senior tech go, all of these things were

1 questions in their minds, that's what spurred this on, we did it for others
2 but I don't know if it was documented. There were other sessions like
3 this.

4
5 DONALDSON: How many other session took place in 1978 where training forms
6 were filled out either after the fact, and may not have been representative
7 of the training that was provided or may indicate erroneously, that certain
8 people were trained as required yet had not been?

9
10 MULLEAVY: I don't know, I can't say that there are any others than this
11 one. The reference to the comment here, now that could have been made out
12 by the training department, because we stated that this was for the radiation
13 monitoring team, the bottom portion on occasion has been made out by the
14 training department to correlate it with their training records and how
15 they keep this data. That could be erroneously the wrong reference.
16 That's probably what happened. That was sent over there blank because not
17 knowing what their tracking system is for the training. This was probably
18 put in wrong. Where it says on the top, the lesson course, was radiation
19 monitoring team training, and this was a special deal, this wasn't in 1670,
20 it was something that they didn't know how to perform and what do we do in
21 the event you're not here, do I go to the control room, do I stay here,
22 what happens to the lab, who sets it up, they had valid questions, so these
23 were special sessions, not stated in the plan. . . and we decided to take
24 the credit for it.
25

989 027

1 YUHAS: Who's responsibility is it to fill out this input information on
2 the bottom of the sheet.

3
4 MULLEAVY: Whether it is the instructor or not I it probably is, the respon-
5 sibility of the instructor, but I had asked, on occassion from the training
6 department, what do we put down there, well you tell us what it is and
7 we'll put the tracking on there for you, under the comments. That's a
8 tracking system but I see now it's important, isn't it. Because it may
9 reference the wrong thing.

10
11 YUHAS: Right, exactly. . .

12
13 MULLEAVY: I think that's what happened.

14
15 YUHAS: Do you . . .

16
17 MULLEAVY: Cause there should be others like this.

18
19 YUHAS: If these guidance, words of guidance were provided to you by the
20 training department as to they will accept responsibility for filling this
21 out could you give us an idea of how frequently you sent forms in where the
22 bottom portion of course description is in fact course coding lecture and
23 whether it's time. . .
24
25

989 030

1 MULLEAVY: It could be almost all of them, I believe. It could be, I'm not
2 saying it was.

3
4 YUHAS: Can you speak just to your personal reference. . .

5
6 MULLEAVY: If I put the, if I put the lesson course down there. . . and
7 such as this, this is Radiation Monitoring Team training, location at TMI,
8 it could have been that they, that this. . . obviously it's different
9 writing down there, that this form which was sent in and I filled out, well
10 I put my name because I wanted credit for this, myself, and then making the
11 evaluation which is a true evaluation of the group, but as far as correlating
12 it with the computer system, that was done by the training department, now
13 that was an incorrect reference.

14
15 YUHAS: Do you remember the drill that was conducted in November of last
16 year, November of '78?

17
18 MULLEAVY: Oh, we had many of them, yes.

19
20 YUHAS: This would have been the drill that was audited by the NRC?

21
22 MULLEAVY: Yeah.

23
24 YUHAS: Did you sit in on the critique of that drill?
25

989 031

1 MULLEAVY: Yes.

2
3 YUHAS: Are you aware that both environmental monitoring teams did not
4 successfully use the SAM-2.

5
6 MULLEAVY: I don't specifically remember that being a paramount thing at
7 that critique, no. Because it would have been had it been. . . I'm not
8 sure what you mean by successfully using, coming up with a final number, or
9 the equipment didn't function, or what?

10
11 YUHAS: They were unable to get the equipment to work.

12
13 MULLEAVY: No I don't remember that.

14
15 YUHAS: The problem that we have here, is the training records that I'm
16 showing you are the training records that Mr. Heilman, Mr. Donnachie, Mr.
17 Pyke and Mr. Deimler, all their training records indicate that they in fact
18 received training in the hi volume sampler and use of the SAM-2 instrument
19 on 9/14/77, ok. It's been our findings of this investigation that they in
20 fact did not receive training on the SAM-2 and have not yet received training
21 with the exception of one individual who was personally tutored by Syd
22 Porter after the incident, ok. All these individuals during the incident at
23 one point or another, were assigned to the environmental monitoring teams
24 or in fact they would likely be called on to use the SAM-2. It is our
25 concern one, that the record is incorrect, ok, . . .

989 032

1 MULLEAVY: I, I will have to agree. . .

2
3 YUHAS: No we're going back, we talking, this input record that you signed
4 indicates that the guys received the training, and that they in fact, each
5 individual demonstrated his ability to use the equipment, ok. We're very
6 concerned about that. These individuals have stated they did not attend
7 that training session.

8
9 MULLEAVY: Umhum.

10
11 YUHAS: In addition, reviewing this form, the one regarding Rad Monitor
12 Team training in accordance with procedure 1670.9, you have just described
13 to us that that in fact not what was provided?

14
15 MULLEAVY: That's correct according . . .

16
17 YUHAS: It's something other than what's described on this perform, this
18 form, which again, you signed.

19
20 MULLEAVY: Umhum.

21
22 YUHAS: Was not provided to these individuals.

23
24 MULLEAVY: Umhum.
25

989 035

1 YUHAS: In reviewing the critique of the drill conducted on 11/8, we noted
2 that these individuals were in fact assigned to the emergency monitoring
3 team training and in fact were incapable of operating the SAM-2's as noted
4 by Mr. Ruppert who was observing one team from GPU and Ms. Good who was the
5 observer of a different team. These same individuals were assigned and
6 again could not operate the SAM-2. You had indicated that these individuals
7 complained to you in September of '78 that they had not received SAM-2
8 training, and were not capable of operating equipment and yet your procedure
9 was revised in February of '79 indicating that only those individuals who
10 had been trained would in fact. . .

11
12 MULLEAVY: Would operate . . .

13
14 YUHAS: . . . Be assigned to jobs that they had been trained to do. And
15 now we find that the individuals were in fact assigned to operate the
16 equipment or be on environmental survey teams during the incident and they
17 had never received training even after they had brought it to the attention
18 of the responsible supervisor.

19
20 MULLEAVY: That's correct.

21
22 YUHAS: I'd like to give you this opportunity, opportunity for you to
23 comment on the fact that a, we're in a bit of a mess here?
24
25

989 034

1 MULLEAVY: It looks very much like we are, ah yes, I, I really can't comment,
2 I think you said an awful lot.

3
4 YUHAS: So to go back and in terms of the errors on the form that you
5 signed dated 9/16/77, you did not list the names of the individuals, is
6 that. . .

7
8 MULLEAVY: No I did not, that's, that's true, yes that is not my writing.

9
10 YUHAS: Do you know who listed the names of the individuals?

11
12 MULLEAVY: I don't know, I can only surmise, I recognize the handwriting,
13 I believe, but I can't tell you for sure who that is.

14
15 YUHAS: Who do you believe it is?

16
17 MULLEAVY: I believe that's Pete Valez's writing.

18
19 YUHAS: For the record, on the training program administrative forms, you
20 yourself are aware that more than one form has been submitted with the
21 bottom section, that is the coding of the actual, the date and the fact,
22 the catalogue number or the course, the duration of the course, whether it
23 was lecture or on the job, and the entry that goes onto, onto the individuals
24 training records, is not in fact completed by the instructor?

25

989 035

1 MULLEAVY: That does not, or has not in this case been completed by the
2 instructor.

3
4 YUHAS: Are you aware of other instances where it has not been completed by
5 the instructor?

6
7 MULLEAVY: I can't give specifics, but I believe yes I have handed these in
8 without the categorization on the bottom completed, yes.

9
10 YUHAS: Do you supervise the individual who is responsible for implementing
11 the, the input to the training records?

12
13 MULLEAVY: Yes sir.

14
15 YUHAS: At this time, I would like to provide you with a copy of another
16 training program administrative form and this form is called Unit 2 HP and
17 Chem Startup at TMI, and it lists numerous HP techs, the date of the form
18 was 12/1/78, its classified as on the job training, and I'd like you to
19 first read for us Item 7, which is the instructor's comment from the form
20 and then acknowledge whether or not you were involved in this were, aware
21 of it prior to it or your comments on it now.

22
23 MULLEAVY: Ok, this particular form was made out by Pete Valez who was the
24 instructor on this or the individual taking the credit for the instruction,
25 this particular training that is recognized here was a combination of

989 036

1 chemistry and health physics training, and that was on the job and as far
2 as the HP portion of it, we had all the individuals go out into the field
3 and draw maps, which we hoped would familiarize them with the Unit 2 area,
4 and they drew 'em up my survey maps. They also were asked to look up RMS
5 systems and to go out into the field, this was mostly on their own, to go
6 out into the field, take maps, we gave each one of the individuals a set of
7 maps for Unit 2, and they were to go out and find the RMS system, find
8 sample points in chemistry, find out where the tanks were and so forth,
9 when they came back they did have the opportunity of discussion, with
10 either myself or the foreman or Karrie Harner, who was also instrumental in
11 this so it was a on the job, it was mostly a self study with instructions
12 given to go find these things, if you have problems come back, we'll go
13 over some of the things with you, it was a familiarization area with,
14 starting up at Unit 2. Specifically chemistry because the chemical sample
15 plants, they had to know where they were and so forth. So,

16
17 SHACKLETON: This is a continuation of the interview of Mr. Thomas L.
18 Mulleavy, the tape went off, the end of the cassette at 1:42 p.m., we're
19 re-beginning this side of the cassette at 1:43 p.m., eastern daylight time,
20 and we'll return back to the questioning when the tape went off.

21
22 YUHAS: Mr. Mulleavy you were just about to to read the instructor's comment
23 and make you evaluation of that.
24
25

989 037

1 MULLEAVY: On this particular form here we had the instructor training
2 evaluat on was written by Pete Valez, it says during the past six months
3 the Techs have been getting good instructions in both HP and Chemistry
4 aspects of the Unit 2 startup. My comment on that particular one is that
5 the instruction given was a self study course, more or less, we gave the
6 individuals maps to follow, as far as the HP aspect, those particular maps
7 in conjunction with the maps there, road maps, system description, or not
8 descriptions, but system piping diagrams and the individuals on the HP
9 aspect were asked to draw survey maps of the areas, it was in hopes that
10 they would learn where the shield walls were, where the compartments were,
11 different tanks and so forth, possibility of looking for hot spots, RMS
12 system, see where they were located and so forth, that was my hopes in
13 getting individuals familiar with the area. The chemistry aspects, they
14 were asked to learn sample points, they were given the, again found in the
15 diagrams that were given to them sample points where the chem tanks were,
16 sample points of the tanks that they may be asked to do, this was mostly a
17 self study course, they were asked if they had problems to bring those
18 problems back, we would then discuss them with them and set them right on
19 their track again. That's what this depicts.

20
21 YUHAS: Did each individual draw survey maps?

22
23 MULLEAVY: Groups of them as the, as the test, or as the training group
24 came over to the HP area, they were asked to draw them, now whether each
25 specific individual drew their own maps, no, I would say as one group left

989 030

1 and a new group came on I would show them what was done and ask them to
2 continue on.

3
4 YUHAS: What method of evaluation was made to determine if each individual
5 was in fact familiar with the differences between Unit 1 and 2 and familiar
6 for instance with the radiation monitoring systems with Unit 2?

7
8 MULLEAVY: There was no formal method established of determining whether
9 they were uptaking this material or not, there was no exams, only discussions.

10
11 DONALDSON: I just have a couple final questions regarding this emergency
12 training. Emergency director training is outlined and retraining procedure
13 also and I note that vast majority of the emergency director training is
14 accomplished through reading assignments? Is that allowed by your procedure?

15
16 MULLEAVY: I don't believe it is no.

17
18 DONALDSON: Thank you. Another memorandum here which is dated February 1,
19 1979 and it's to you from Frank McCormick and again it's a hand written
20 memo, I note there a lot of internal hand written memos and the subject is
21 "Advanced HP for AOB's". Ok, now I'm asking this kind of question relative
22 to this in the contexts that and AOB who becomes an AOA all of a sudden
23 becomes eligible to be a monitoring team member in an emergency. The memo
24 goes on to say . . .
25

989 039

1 MULLEAVY: Not, not all of a sudden becomes eligible. . .

2

3 DONALDSON: Well. . .

4

5 MULLEAVY: They become eligible well, alright, I will agree with that.
6 They become eligible but they are not sanctioned until they pass the course.

7

8 DONALDSON: I'm interested to know then how you sanction them, do you keep
9 a list of people who are currently qualified to perform various emergency
10 duties, do you keep that list at the ECS somewhere?

11

12 MULLEAVY: They have HP on their badge.

13

14 DONALDSON: So you would just grab somebody with HP on their badge?.

15

16 MULLEAVY: Yes, umhum.

17

18 DONALDSON: That you realize of course, is not in the procedure, it states
19 that all individuals within a given job category, in this case, rad chem
20 techs, and AOA's will be assigned monitoring teams. . .

21

22 MULLEAVY: Umhum.

23

24 DONALDSON: That was up until February when you had changed it and stated
25 that those who are qualified, is that correct?

989 040

1 MULLEAVY: Yes.

2
3 DONALDSON: Let me ask you how would you know if an HP were qualified or
4 not? He he wouldn't have that on his badge would he?

5
6 MULLEAVY: No he wouldn't, no.

7
8 DONALDSON: Back to the memo, the memo states, " you must include rad
9 monitoring team training in accordance with HPP-1670.9, must be clearly
10 identified as such in program outline in content detailed in lesson plan,
11 not doing this leaves two options, either or which is desirable, one, run
12 another special program for all AOB's before they advance to A, or two,
13 advance them to A without this training," and the parenthetical comment is
14 "boo, hiss bad, violation, citation" etc., etc., and the question to you
15 is, "How about it?" signed Frank McCormick. How about it, what happened?

16
17 MULLEAVY: Nothing. Nothing happened about that particular one. I talked
18 to Len about it, we showed that, talked about it, but did not act on it.

19
20 DONALDSON: When you say did not act, do you mean that either you did
21 promote these individuals without the training, or the individuals were not
22 promoted, what was the, what happened?

23
24 MULLEAVY: Nothing happened in conjunction with that. The individuals
25 were neither promoted, we did not act on that memo at all.

989 041

1 DONALDSON: Ok.

2
3 YUHAS: I'm going to read off a few names, an advanced health physics
4 training course was provided for several AO's to go from AOB to AQA and
5 it's dated 6/27/78. These individuals involved Mr. Demmy, Mr. Fountain,
6 Mr. Kohl, Mr. Miller and Mr. Wilson. Do you remember instructing that
7 course?

8
9 MULLEAVY: Yes.

10
11 YUHAS: This is indicated as a forty hour lecture course.

12
13 MULLEAVY: Yes.

14
15 YUHAS: I'm going to pass you that training program administrative form,
16 and first ask you if the bottom is in fact your hand writing or someone
17 elses?

18
19 MULLEAVY: The bottom handwriting is someone elses.

20
21 YUHAS: Did . . .

22
23 MULLEAVY: In fact I didn't make this out at all.
24
25

989 042

1 YUHAS: You were the instructor though is that true?

2
3 MULLEAVY: Yes I was

4
5 YUHAS: Ok. Did the course in fact run the full forty hours, or was it an
6 amended course?

7
8 MULLEAVY: This was a forty hour course, yes, yeah.

9
10 YUHAS: You're fairly confident in saying that?

11
12 MULLEAVY: Yes, yeah this one, if this was the last one ... wait a minute
13 now.

14
15 YUHAS: Have you, in a previous courses. . .

16
17 MULLEAVY: No, there was one after this.

18
19 YUHAS: Have you in a previous course amended the requirements for the A0
20 training?

21
22 MULLEAVY: This particular course, excuse me, this one was an eighty, this
23 was a two week course, there was one after this that we did modify.

24

25

989 045

1 YUHAS: Ok. The course is normally eighty hours isn't that correct?
2

3 MULLEAVY: Yes it is.
4

5 YUHAS: Now you're indicating that that course was forty hours?
6

7 MULLEAVY: No, no no. I'm not. This has total of eighty hours here.
8 Course duration is eighty. Lecture hours was forty.
9

10 YUHAS: Ok, right. Excuse me. Have you amended the scope of that course
11 as described in procedure I think it's HP-1690 that lists very specifically
12 what these people are suppose to get for instance, use of various instruments,
13 calibration scalers and shielding, have you changed the scope of the course?
14

15 MULLEAVY: Yes we did. We did a pilot program on that as a modified advanced
16 program to see what the individuals would do with that particular one in
17 the eighty hour course I found that there was too much free time and it
18 could be condensed into a more meaningful program, this was a test group
19 and there was much talk about it and we did involve the training department,
20 we involved the operations crew, we involved Dick Dubeil, and so forth and
21 on to see what their feeling was an we did a test group on this last session.
22 We found that they did receive the training rather well, we cut out some of
23 the shielding calculations because we felt that that was a little heavier
24 than what they really should have, and it got rather involved in the eighty
25 hour program. It would. . . felt that it wasn't necessary we did cut out

989 04

1 some of the field trips, we did give them the required, I felt, the required
2 training that was found in the eighty hour course, we cut out a lot of
3 their free time, study time on the job, and which they did accomplish, the
4 exams were equally as good, as we had found with the eighty course, eighty
5 hour course and I feel that it went rather well. We have not however
6 changed procedural documentation to reflect that the forty hour is equally
7 as well as the eighty hour. But it was a test group and we felt that the
8 last group did rather well.

9
10 YUHAS: Did you . . . comensurate with conducting this test did you issue a
11 temporary change notice to the procedure 1690 indicating that a revised
12 lesson plan was going to be used. . .

13
14 MULLEAVY: I did not.

15
16 YUHAS: To meet as a test group?

17
18 MULLEAVY: I did not.

19
20 YUHAS: So someone reading the records then would assume that the full
21 course as provided in the health physics procedure was in fact provided...

22
23 MULLEAVY: Structurally if they look at the training record I believe it
24 does say a forty hour course and it's changed to a modified advanced and
25 the lesson plan reflects that.

989 045

1 YUHAS: And the people who passed the exam were in fact issued HP. . .

2
3 MULLEAVY: Yes sir they were.

4
5 YUHAS: . . . Stickers for their badge?

6
7 MULLEAVY: Yes they were.

8
9 YUHAS: The next one I'm gonna ask you to comment is the advanced HP recer-
10 tification and it is dated 12/18/78. And its a requal, I guess primarily
11 for ops and HP certified AO's as best I can tell, why don't you take a look
12 at that one and and comment on it, on what's going on there.

13
14 MULLEAVY: Well, first of all the list of names looks like the same hand-
15 writing, so obviously one individual made that out, four hour requal program,
16 which is they did have a written test and the instructor's trainings evalu-
17 ation says very good, whether that was based on the written test, probably
18 was, and that is Pete Valez signature given on 12/18/78.

19
20 YUHAS: Did Mr. Valez fill out the front part of that form?

21
22 MULLEAVY: No Mr. Valez did not. Looks like one individual filled that
23 out, that's not his handwriting, no. Usually one member of the group who
24 was attending will fill it out. It isn't indicated that one individual
25 must sign his own name.

989 046

1 DONALDSON: I'd like to show you another memorandum dated 9/8/78, and the
2 subject is Responsibility During a Rad Emergency on a Back Shift. And it's
3 to Units 1 and 2 shift foreman, shift supervisors.

4
5 MULLEAVY: Yes.

6
7 DONALDSON: Are you familiar with that memorandum? Have you seen it before?

8
9 MULLEAVY: Oh yes, this came out of the operations crew didn't it? Yeah,
10 ok.

11
12 DONALDSON: I note there that that particular memorandum assigns backshift
13 emergency duties, to not only HP technicians, but also individuals who are
14 operational in nature.

15
16 MULLEAVY: Yeah.

17
18 DONALDSON: Was this memorandum, either coordinated with yourself or Mr.
19 Dubeil and was it, is it consistent with the discussions that you had with
20 the C shift technicians that you mentioned earlier, Donnachie, Diemler,
21 Heilman. . .

22
23 MULLEAVY: Umhum. Yes this, what this 9/8/78, and I believe my talk with
24 them was after that, around that time. That was part of this, I found
25 after talking to some of the groups in their, in their training, that all

089 047

1 of a sudden I found that there were some shifts doing things a little
2 differently. This shift supervisor would call his group here, this shift
3 supervisor, oh he wouldn't do that maybe he'd do this particular thing, so
4 in an effort to, standardize, I did go to the operations people and say,
5 ask them to come out with, and you know, let's get all these shift super-
6 visors together and play the game the same way as we're suppose to be
7 doing. So this spurred this on and then we did take this to the groups.

8
9 DONALDSON: What is the normal procedure that is followed when you need to
10 either refine, change, or further describe the methods or procedures to be
11 followed during an emergency? Do you make it a practice to issue memorandums
12 to clarify change or modify the responses outlined in the procedures or
13 just exactly what do you do?

14
15 MULLEAVY: Obviously we did it with a memorandum there the normal procedure
16 should be to write a TCN if we wanted to follow it out right away write a
17 TCN to the existing procedure and then follow it with a PCR within 90 days
18 if the change is going to be a permanent change.

19
20 DONALDSON: In accordance with the emergency plan what individual has prime
21 responsibility for reviewing the emergency plan and initiating changes to
22 the procedures? Maybe it would be the implementing of procedures.

23
24 MULLEAVY: Well, we had a group set up supposedly, that Len was handling
25 those particular things...I can't remember the....

1 DONALDSON: Let me clarify it this way, are the operations people responsible
2 for overseeing the operation on changes to the response plan or is the
3 radiation protection chemistry group?

4
5 MULLEAVY: Radiation protection and chemistry group.

6
7 DONALDSON: I would note that this particular memorandum was signed by M.
8 J. Ross, Unit 1, Supervisor of Operations. Now according to your organiz-
9 ation what authority does Mr. Ross have over the control of operations in
10 the direction of operations in Unit 1? Could he be superceded by the Unit
11 2 Supervisor of Operations for example?

12
13 MULLEAVY: Could be. In the other Unit.

14
15 DONALDSON: Ok. How should this procedure have been issued?

16
17 MULLEAVY: Well if that was going to be something that we all followed and
18 obviously I felt it was good because I presented it to the techs. We
19 should have gone through the aforementioned chain, TCN, PCR.

20
21 DONALDSON: I'm getting a feeling that a lot of little irritants were
22 constantly pointed up with the emergency planning program, either the
23 procedures themselves gave people problems in that they didn't know exactly
24 what to do, the training, the equipment, what happened to these comments...
25 they don't ever seem to have been translated into procedural changes and

989 047

1 procedures seem to pretty much the same now as they were three four years
2 ago?

3
4 MULLEAVY: I believe the thing we're missing is a formal review when these
5 things do come up and I'm sure that's part of the problem with the plan, is
6 the formal implementation of any changes that individuals see. Obviously
7 having over 500 people there are that many different ideas as people see
8 them and how they relate to their own particular job and when they come up
9 and they are good they were implemented. Now formally documented.

10
11 DONALDSON: Has there ever been a program for formally revising the proce-
12 dures? Let's put it this way, what is the normal procedure, do you have an
13 organization on this station that reviews and approves emergency plan
14 implementing procedures?

15
16 MULLEAVY: Do we have a group that normally does that. Generally after a
17 drill there is a group formed that will implement any changes and so forth
18 that is seen. An individual who is responsible to make sure that those
19 changes are made. I don't believe there is a mechanism that states within
20 such a time that those are made.

21
22 DONALDSON: Has there ever been a comment or suggestion made by anyone that
23 such a group be formed?
24
25

989 050

1 MULLEAVY: Surely.

2
3 DONALDSON: Who are these comments made by?

4
5 MULLEAVY: I believe it was yourself.

6
7 DONALDSON: How many times have these comments been made?

8
9 MULLEAVY: Oh, I know of two anyway.

10
11 DONALDSON: What actions considered or reviewed by management to resolve
12 these discrepancies or problems that were noted in the followup?

13
14 MULLEAVY: The formal review as I said after a dr ... and so forth, the
15 formal review is set up at that particular time. Followup is the problem.

16
17 DONALDSON: Has this been an ongoing problem as far back as say 1976?

18
19 MULLEAVY: I believe so.

20
21 DONALDSON: One final question let's talk about drills for just a second.
22 I know that you run several, ... call them on practice drills prior to
23 running a drill which you inform the NRC that you're about to conduct and I
24 believe last year you did in fact run six drills before the November 8th
25 drill which you decided or determined would represent your official "drill

1 to meet the requirements of your emergency plan". Prior to the drill on
2 November 8th, a day before, a week before, two days before, were any indi-
3 viduals given instruction as to what their specific duties would be on the
4 day of the drill that was to be observed by the NRC?

5
6 MULLEAVY: Specific instructions to individuals?

7
8 DONALDSON: For example, either you or yourself if you know if anyone did
9 would approach a technician, a auxiliary operator and say, you will be on a
10 offsite tomorrow because we're having a drill and I would like you to be
11 sure that your team member is so and so?

12
13 MULLEAVY: No. No, because I assigned those and what I generally would do
14 which is to write them down in my little notebook that I carried around and
15 then do that when I got there at the scene.

16
17 DONALDSON: What is your understanding of the purpose of conducting a
18 drill?

19
20 MULLEAVY: To look for spontaneous compliance with our plan as we saw it.

21
22 DONALDSON: How spontaneous or how would you say the evaluation of a drill
23 on November 8th ... would that be a valid indicator of the ability of the
24 organization to function in a real emergency?
25

989 052

1 MULLEAVY: No. No, it would give you an idea on where to go, the thing
2 that I had found the only help in a drill is to know where the equipment
3 is. It familiarizes you with what you're up against at the time. But
4 spontaneity in one of those things really doesn't exist. You're waiting
5 for the actual time to begin. Generally it is known when the siren will go
6 off. And you're ready. It's very difficult to get a spontaneity thing at
7 that particular point because you know it's going to happen.

8
9 DONALDSON: Do you recall after any of the drills the last series of drills
10 that you ran October, November of 1978 any discussions regarding the emergency
11 organization that had been established at Three Mile Island and the ability
12 of that organization to deal with extensive inplant problems?

13
14 MULLEAVY: No, I don't believe that we've ever discussed the ability of the
15 organization for extensive anything. And I doubt if any plan really takes
16 it that far.

17
18 DONALDSON: Had you discussed it in the context of the outline of your
19 organization whether or not the organization allowed any form of inplant
20 radiation protection or surveys, things of that nature to continue?

21
22 MULLEAVY: No. No, it's very hard on a drill because the drills are over
23 in two or three hours. That's what I found most difficult in the actual
24 event. You just can't....
25

989 053

1 DONALDSON: I guess what I'm hearing you say is that the drills negatively
2 condition you?

3
4 MULLEAVY: Oh, no. No, I said before in other interviews conducted by
5 yourself that without the one drill where we made this transition from the
6 primary ECS to the secondary ECS was most beneficial because I knew how to
7 do it. It was very disgruntled that the first time that they made us go
8 from one to the other. But by gum it sure helped me this time.

9
10 DONALDSON: I believe there was a comment or do you recall a comment rela-
11 tive to the adequacy of washdown areas?

12
13 MULLEAVY: Adequacies of washdown areas. I don't think that we've ever in
14 a drill gone to the adequacy or inadequacy of a washdown area. We knew
15 where they were. We knew what we would do in the event that we had to have
16 one but we never did it. We never went that far.

17
18 YUHAS: Getting back to the November drill for the NRC. You mentioned that
19 you wrote down in a book the assignments that you were going to make. Was
20 this the day before the drill or something?

21
22 MULLEAVY: This was the day before or generally that morning because I knew
23 who was on shift and I knew who I wanted where.
24
25

989 054

1 YUHAS: Did you show that book to your rad chem techs?

2

3 MULLEAVY: No.

4

5 YUHAS: Did you discuss it with any of your rad chem techs?

6

7 MULLEAVY: No.

8

9 YUHAS: Ok. We've been told that you assigned individuals prior to the
10 drill specifically what team they were going to be on who they were going
11 to be with.

12

13 MULLEAVY: No.

14

15 YUHAS: You feel confident that you did not?

16

17 MULLEAVY: I feel confident that I did not. I knew that an individual and
18 I had told them ahead of time that your in chemistry you stay in chemistry
19 you guys are in HP. I want you here in HP.

20

21 YUHAS: But you did not say you will be on... . Not to the point letter
22 designation but to the generic term of for instance you four fellows or you
23 six fellows will be offsite environmental you fellows will be onsite envi-
24 ronmental you fellows will be chemistry, did you do that sort of thing the
25 day before?

1 MULLEAVY: I think I differentiated between chemistry and HP people.

2
3 YUHAS: But to the best of your recollection to what extent...

4
5 MULLEAVY: I don't recall them assigning them different areas, no.

6
7 YUHAS: Have you ever had an unscheduled or unannounced drill?

8
9 MULLEAVY: No. No. There was one when they called at home early morning
10 for an accountability to see who could come.

11
12 DONALDSON: Had you every run a drill on the backshift?

13
14 MULLEAVY: Yes, there was a drill. Yes, on the backshift.

15
16 YUHAS: Do you require participation in drills, let's say if you're scheduling
17 a drill for just after normal working on the swing shift, in other words
18 that shift between four o'clock and midnight. Ok, does that drill when you
19 have your training drills do you require that people hold over for overtime
20 and did they participate in the drill?

21
22 MULLEAVY: Yes.

23
24 YUHAS: Do the individuals hold over or do they leave?
25

989 056

1 MULLEAVY: There has been occasion where they have held. Some leave. Say
2 they can't stay.

3
4 YUHAS: Is that cleared through company management prior to initiation of
5 those individuals who would participate and those who are excused from
6 participation?

7
8 MULLEAVY: It's cleared through our own department management.

9
10 YUHAS: So you're cognizant of the fact whether or not people...

11
12 MULLEAVY: Yes.

13
14 YUHAS:people actually went to the drill?

15
16 MULLEAVY: Yes.

17
18 YUHAS: Are the training records then accurate as to who participated and
19 who didn't?

20
21 MULLEAVY: I believe they are, yes. That was taken from usually the ...
22 made up during the critiques...

23
24 YUHAS: Are technicians invited to participate in the critiques?
25

1 MULLEAVY: They are invited, yes.

2
3 YUHAS: How is this invitation extended?

4
5 MULLEAVY: There is a critique afterwards. Any one who wishes to stay may
6 stay.

7
8 DONALDSON: Are comments from the participants at the technician level
9 solicited?

10
11 MULLEAVY: Yes, they...uh..solicited, they are entertained, whether they
12 are solicited or not I can't be I can't be sure whether they are specifically
13 asked for comments.

14
15 DONALDSON: I might mention that any critique I've every attended, the only
16 ones to present comments are the observers.

17
18 MULLEAVY: If an individual has a comment he may comment. They certainly
19 do in other instances. They are not discouraged.

20
21 YUHAS: Just a couple of questions away from emergency planning. Do you
22 know Mr. Bill Allen, from Pennsylvania Power and Light?

23
24 MULLEAVY: Yes.
25

089 058

1 YUHAS: Did Mr. Bill Allen come on site in the first three days to assist
2 you?

3
4 MULLEAVY: I don't believe in Unit 1's Control Room. In the first three
5 days?

6
7 YUHAS: Yes.

8
9 MULLEAVY: I can't remember. He may have up in Unit 2's Control Room.

10
11 YUHAS: Was there something that might construe as a secondary ECS established
12 at the Observation Center early in say the first later part of the first
13 day?

14
15 MULLEAVY: As far as manipulation of offsite teams, there could have very
16 well been.

17
18 YUHAS: Do you know who was administrating that?

19
20 MULLEAVY: No I don't.

21
22 YUHAS: Is there...do you know of any way of determining the numbers and
23 job descriptions of various outside health physics technicians that arrived
24 to support you in the first three days?
25

1 MULLEAVY: I have no idea. I've stated before that I was told I've forgotten
2 how many days into the drill that I worked for someone else and I knew
3 nothing of this group.

4
5 YUHAS: So essentially yourself, speaking for yourself and I guess having a
6 knowledge somewhat of Mr. Dubiel you people really were so involved in
7 inplant coordination of offsite activities that you had no idea that of the
8 number and the types that for instance RPMs from different plants were
9 arriving...

10
11 MULLEAVY: I had not idea what that function of the Observation Center
12 which I felt went haywire. I had no idea that all these people were here.

13
14 YUHAS: Had you had an idea of who was here and their capabilities, would
15 you have used them in the plant?

16
17 MULLEAVY: Certainly would have. Yes. Once the EB group and I recognized
18 those particular people they were most helpful. But that was after we
19 regrouped and went in over to Unit 2 and set up our HP office over there.

20
21 YUHAS: Who best could describe to me when the arrival of for instance
22 charcoal cartridges from MSA was delivered to the site? Do you know the
23 mechanism, were they just kind of loaded on the back of the truck and
24 dumped at the process center, do you know if it went, we're trying to
25

1 MULLEAVY: I don't believe that they...I know that I talked to Dave Limroth
2 about that or was in a meeting when it was asked of him. And he was oper-
3 ating out of the Observation Center and I don't know myself. I know that
4 they all of a sudden were available and it was my understanding or after
5 talking to Dave Limroth that these things ... everybody had from the outside
6 just sensed them. And I am not sure when they arrived. It just in my
7 recollection they were here all of a sudden.

8
9 YUHAS: That was the evening of the 29th you first started seeing charcoal
10 cartridges.

11
12 MULLEAVY: Yes, because I believe we began to have them on our hips then.
13 The respirator.

14
15 DONALDSON: On the first day team training, there are two parts to that.
16 There's the requirement for the multi-media recertification which is every
17 three years and while certification is current they receive a review of the
18 multi-media course aspects and also a requirement second part to review
19 each year the contents of procedure 1670.11 which is emergency medical for
20 injured or contaminated persons. Did you conduct any of those courses
21 during 1978?

22
23 MULLEAVY: Not for the first aid, no that's done by Earl Gee and his group,
24 the safety group.
25

1 DONALDSON: Does Earl Gee also review procedure 1670.11?
2

3 MULLEAVY: He does not I believe review that particular procedure although
4 we do have an annual drill which is our medical drill which is conducted by
5 Radiation Management Corporation. We do have one session, the day before
6 the medical drill where we do invite operations personnel, HP personnel to
7 attend that evening I invite the ... at the Observation Center our ambulance
8 crews from the area. A letter on the call is sent to those particular
9 individuals indicating when it's going to be. We generally have Radiation
10 Management Corpotion here to give them a session in the evening on their
11 responses to medical emergencies. The following morning Hersay Medical is
12 sent a group, Radiation Management goes over there to conduct a session
13 with them and then in the afternoon of the following day we usually have
14 our drill.

15
16 DONALDSON: You mentioned that you invite operations people. I believe the
17 people assigned to the first aid rescue teams would be aux operator, A's
18 again and rad chem technicians.

19
20 MULLEAVY: That's right.

21
22 DONALDSON: You say invite. And during that course you cover the procedures
23 to be followed in the 1670.11 are infact all the people who are assigned to
24 that team, do they attend?
25

989 062

1 MULLEAVY: No, I don't believe all of them do because they're not all here
2 at that particular time and to have a session for each one of them we have
3 not addressed that.

4
5 DONALDSON: Do all people who could potentially be assigned to that team
6 participate in the drill?

7
8 MULLEAVY: No.

9
10 DONALDSON: Then it would be conceivable that some of the individuals who
11 are listed on this training record as being current in their training for
12 first aid. Is it possible that some of these individuals may have received
13 the multi-media refresher yet not received a refresher in procedure 1670.11
14 or participated in the drill?

15
16 MULLEAVY: I would have to see what those training records are. I'm not
17 sure whether 1670.11 is addressed with Earl Gee. I don't believe so.

18
19 DONALDSON: In the past has it been your responsibility to conduct the
20 1670.11 review?

21
22 MULLEAVY: To conduct the drill.

23
24 DONALDSON: To conduct the drill.
25

989 063

1 MULLEAVY: Right.

2
3 DONALDSON: I don't have anymore questions.

4
5 YUHAS: Just one additional question and that is ... having a lot of problems
6 trying to establish dose accountability in the first three days. What
7 I've run up against is discrepancies between values that for instance
8 appear in the ECS Log as the guy's dosimeter read out and indicated this or
9 an individual was standing in ECS and took his dosimeter over to read it
10 out because he had got a large exposure and he remembers that it reads
11 this. But when I look at the form five, your computer printout, there's
12 not a good correlation between these other document values of what the
13 TLD's read and what appears on the form five. When did you first get any
14 kind of dose update for individuals from the TLD system, can you remember
15 the date?

16
17 MULLEAVY: Probably about a week after the incident when we began to get
18 the forms from the TLD people which had bogie numbers on them. It was
19 probably about a week afterwards.

20
21 YUHAS: In..when you were administering the ECS in that three or four day
22 period what measures were taken so that individuals were aware of their
23 dose?
24
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1 MULLEAVY: It was by those forms sent out on a shiftly basis I believe.
2 These were dose tracking forms. And they came to all the departments, well,
3 let's see operations came to us in the Unit 2 Control Room and they had a
4 bogie number on them where an individual would not go above or supposedly
5 not go above that number, so that we could keep him well within limits for
6 the quarter.

7
8 YUHAS: This was during the first three days?

9
10 MULLEAVY: No, no, no. The first week is the first time I saw that.

11
12 YUHAS: Excuse me, let me clarify. The period of time that I'm speaking of
13 is the majority of dose problems occurred the morning of the 28th until
14 really the night of the 30th.

15
16 MULLEAVY: I saw nothing on any exposures at all during that time.

17
18 YUHAS: So essentially the only method you had or you didn't have that the
19 individual had was either if he kept track of it himself by note or if he
20 tried to remember how much he had accumulated based on verbal contacts.

21
22 MULLEAVY: Now that is correct.

23
24 MULLEAVY: Now that was myself. And that was my own situation that I did
25 not know their particular exposures. Other than you know what the guys

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1 were calling us in and saying I have so much we were asking them what they
2 had on their dosimeters. That was the offsite teams and what they were
3 getting.

4
5 YUHAS: Ok. In the first period of time who was assigned responsibility for
6 dose accountability? TLDs or whether it was pocket dosimeters...

7
8 MULLEAVY: That was taken away, rushed offsite and I don't even know who
9 was in charge of that group. I do know, only because I had to go over to
10 the Observation Center to pickup my TLD, did I even see what kind of a
11 complex was over there and who was running the show over there as far as I
12 know Mike Buring was there and he had set up the TLD equipment all of the
13 equipment was taken offsite and being handled by the group offsite.

14
15 YUHAS: Yuhas...

16
17 MULLEAVY: I have nothing to do with that...during that time.

18
19 YUHAS: Again, I'm trying to confine my comments to the first three days
20 and I don't from what you're describing setup and everything I think that
21 must be later than the first three days. I think the first couple days the
22 TLD reader didn't leave the site until the 29th. I think Egenrider...

23
24 MULLEAVY: Egenrider did do some reading...
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1 YUHAS: ...was doing the only reading....

2

3 MULLEAVY: ...background was getting much..very high out there. Cause I do
4 recall one comment of him mentioning the background there. Then I believe
5 that's when it was taken off. I'm not sure what day it was.

6

7 YUHAS: I'd like to thank you for coming over Mr. Mulleavy, I don't think
8 we have any further questions at this time.

9

10 SHACKLETON: This is the conclusion of this interview of Mr. Mulleavy.
11 Time is now 2:19 p.m. Eastern Daylight Time. June 4, 1979.

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