

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

1 In the Matter of:

2 IE TMI INVESTIGATION INTERVIEW

3 of Richard W. Dubiel, Supervisor, Radiation Protection and Chemistry,
4 Metropolitan Edison Company

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

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21 NRC PERSONNEL:
22 Mark E. Resner
23 Thomas Essig
24 Larry Jackson
25 Dale E. Donaldson

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1 RESNER: The following is an interview of Mr. Richard W. Dubiel. Mr.
2 Dubiel is employed by the Metropolitan Edison Company at the Three Mile
3 Island site and he is a Supervisor of Radiation Protection and Chemistry.
4 The present time is 4:23 p.m. Eastern Daylight Time and today's date is
5 May 8, 1979. This interview is being conducted in Trailer 203 which is
6 located just outside of the South Gate to the Three Mile Island facility.
7 Individuals present for this interview are Mr. Thomas Essig. Mr. Essig
8 is the Chief, Environmental and Special Projects Section with the U. S.
9 Nuclear Regulatory Commission in Region III. Also present is Mr. Larry
10 Jackson. Mr. Jackson is a Radiation Specialist with Region II of the U.
11 S. Nuclear Regulatory Commission. Also present, Mr. Dale E. Donaldson.
12 Mr. Donaldson is a Radiation Specialist with the Nuclear Regulatory
13 Commission in Region I. Moderator for this interview is Mark E. Resner.
14 Mr. Resner is an Investigator with the Office of Inspector and Auditor,
15 U. S. Nuclear Regulatory Commission at Headquarters. Prior to taping
16 this interview, Mr. Dubiel was provided with a two-page document which
17 apprised him of the authorities, scope and purpose of this investigation.
18 In addition, it apprised him of that he is entitled to representative of
19 his choosing should he desire to have one present and also he is not
20 compelled to talk to us. The second page of this document, there are
21 three questions which Mr. Dubiel has answered and I will state these for
22 the record.

1
2 RESNER: Number one, do you understand the above? Mr. Dubiel has checked
3 yes, is that correct?

4 DUBIEL: That's correct.

5
6 RESNER: Number two, do we have your permission to tape the interview?
7 Mr. Dubiel also checked yes, is that correct?

8
9 DUBIEL: That's correct.

10
11 RESNER: Number three, do you want a copy of the tape? Mr. Dubiel has
12 checked yes, is that correct?

13
14 DUBIEL: Yes I do.

15
16 RESNER: Okay you will receive a copy of the tape. At this time I ask
17 you to provide a brief resume of your experience, educational and job
18 experience in the nuclear industry.

19
20 DONALDSON: I think you already did that.

21
22 DUBIEL: Yes, that was provided on an earlier interview.
23
24
25

1
2 RESNER: Fine, we'll forego that for this tape then and at this point
3 I'll turn the questioning over to Mr. Jackson.

4 JACKSON: On the morning of the 28th, there was water accumulated in the
5 floor of the Auxiliary Building early and I have heard it stated that at
6 least one and possibly more individuals walked in this water and did not
7 get contaminated. Now, do you know if this water was cleaned up and put
8 into tanks and subsequently came back up in the floor contaminated?
9

10 DUBIEL: Larry I can only give you an opinion on that. First of all I
11 can confirm that there were individuals that did go through the water
12 actually got their feet wet, their shoes wet and subsequent monitoring
13 showed them to be not contaminated indicating that that water which was
14 apparently backing up through the floor drains was of low level activity
15 if any. My opinion on what the early stages, what the water we were
16 seeing could have been, I know very well prior to the incident the
17 radiation levels or activity levels in the Primary Coolant in Unit 2
18 were very low. Other than some Sodium 24 of about a 10 to the minus 2
19 magnitude, no other isotopes were showing up above approximately 1×10
20 to the minus 4, 2×10 to the minus 4; relatively clean water. That
21 being further diluted as it got through or combined with other leakage
22 in the Auxiliary Building through pump seal water leakage and things of
23 that nature. I feel the activity was pretty low in all of our waste
24 tanks in Unit 2 meaning the Miscellaneous Waste Tank, the Aux Building
25

1 Sump Tank, things of that nature. And I feel, it's my opinion that in
2 the early stages, what water we did start adding to the Auxiliary Building
3 was in fact still low level and that the water that was being forced
4 back up into the, onto the floor through the floor drains was low enough
5 activity level where it would not even end up contaminating a shoe
6 should one walk through it. I don't remember the specific time, but
7 very early prior to 7:30 I believe, one of the technicians and I believe
8 it was Michael Janouski, ran through the Auxiliary Building, and as a
9 matter of fact it was much earlier than that now that I think about it,
10 it was back prior to 7 o'clock; went through the Auxiliary Building and
11 had the operators that were in the Building evacuate, he was going
12 through to assure that everyone was out of the building. At that time
13 he did in fact go right through the water. And he has stated to me
14 since that when he checked himself at the with the hand and foot monitor
15 and with a portal monitor it did not alarm either instrument. So I feel
16 that water was old water, combination possible of some reactor coolant
17 but primarily clean water that had been accumulated on the Auxiliary
18 Building side prior to the event.

19
20 JACKSON: Okay. Do you know if any time that morning that an effort was
21 made to pump the sumps down and get that water in the tanks?

22
23 DUBIEL: Well the problem really was that we didn't have much capacity
24 in any of our tanks. I don't recall whether I mentioned this earlier
25

1 but just a little background, we were coming out of the Unit 1 outage,
2 coming out of an outage that had liquid waste problems associated with
3 them, by that I mean first of all we had a fairly sizeable crud burst in
4 Unit 1 giving us relatively high crud levels in our liquid and secondly
5 we had a vent occur where approximately 200, excuse me 20,000 gallons of
6 fuel transfer canal water was spilled into the basement of the Reactor
7 Building and subsequently pumped into the Liquid Waste Systems via the
8 Reactor Building sump. With all of these events going on plus the
9 typical water that is generated during an outage and the fact that Unit
10 1 and Unit 2 shared a common miscellaneous waste and RC waste system,
11 Unit 2 water was not being processed and discharged at a rate that would
12 have allowed it to have sufficient amount of volume available. So when
13 the water started backing up I really believe at that time, it was due
14 to the fact that all of our tanks were full and it just had no place
15 left to go. The Aux Building sump on level automatically pumps to the
16 sump tank, the sump tanks should it overflow overflows right back to the
17 floor into the Aux Building sump. It's essentially a closed loop and
18 when you get into that situation, you're in a point where you're gonna
19 start backing up through floor drains. We did make an effort and I
20 really can't recall exactly what time it was but sometime during the
21 first day and continued through the next couple of days to establish
22 which tanks in Unit 2 contained pre-accident water, water that did not
23 include the extremely high levels of iodine and dissolved gases from the
24 event such that we could start sending those tanks to Unit 1 without
25

1 jeopardizing Unit 1's Auxiliary Building from both the radiation and
2 contamination airborne activity standpoint. So it was a process that
3 took place starting on the 28th, my memory is that it was something that
4 really started towards the early afternoon maybe a little bit sooner at
5 12 noon, 1, 2 o'clock something in that ballpark we had people starting
6 to look and take tank level readings, we were trying to get dose rate
7 information in the vicinity of the tanks as that was a pretty quick
8 indicator of which tanks had what. It was very easy to tell which ones
9 got, had any liquid that was post event liquid.

10
11 JACKSON: Do you recall if this kind of information is written down in
12 any log?

13
14 RESNER: That's Jackson asking that question.

15
16 DUBIEL: I don't know for certain I believe that the operators' logs
17 might or should possibly show any transfers that were made, such as, I
18 recall a Neutralizing Tank going over. I recall a portion of a Miscellaneous
19 Waste Storage Tank going over, things of that nature. I think they are
20 logged in the operators' logs.

21
22 JACKSON: Okay. Part of the question was directed at our process of
23 looking at tank levels on the morning of the incident and trying to
24 determine from tank levels and such and possibly subsequent analysis,
25

1 what the path was from containment or from reactor coolant system into
2 these various tanks. So it had been stated by an individual that, in
3 our organization, that he heard that there's been an effort to clean
4 that water up off the floor early on the 28th, which matter of fact
5 tanks levels and ...
6

7 DUBIEL: I think the, when the wording clean it up might be misconstrued,
8 I believe the effort was to lower of at least one tank level somewhere,
9 such that we could actually just let the floor drain down through the
10 drains and I think that was the only effort I don't know of any other
11 attempts to remove water from the building. It was strictly to lower
12 the level by providing space for it in the Aux Building sump by making
13 room in the subsequent tanks.
14

15 JACKSON: Okay, I think that's enough on that one. I'll ask you to
16 switch your thinking now to the Aux Building HVAC or heating and ventil-
17 ation system. Had there been any major modifications to this system
18 since the Pre-Op Testing was completed?
19

20 DUBIEL: I am not aware of any major modifications to the HVAC system
21 since startup, I recall a couple during the startup program and also
22 plans but no actual modifications during that period of time.
23
24
25

1 JACKSON: What modifications were made during the startup?
2

3 DUBIEL: The single modification that sticks in my mind is the bypass
4 line around the Auxiliary Building filters, the original design was to
5 have a bypass line such that under normal conditions we would not be
6 flowing through our system and that particular line, the dampers them-
7 selves were louver dampers and I don't recall exactly what their leakage
8 was but it was significant and it could not be reduced to an acceptable
9 level and the line was blanked.
10

11 JACKSON: So these systems operate in service, normally right, the
12 filters?
13

14 DUBIEL: The filters would normally operate in service, yes.
15

16 JACKSON: With the filters normally in service what criteria do you use
17 for testing the filters?
18

19 DUBIEL: For those particular filters there is no tech spec criteria for
20 testing them for the Auxiliary Building filters.
21

22 JACKSON: But are they tested?
23
24
25

1 DUBIEL: They were tested during startup with a DOP and freon plus the,
2 I'm not sure I'm fairly certain that the charcoal was bought to Reg
3 Guide 1.52 Specs, I can't be sure that I know it was on the other systems
4 and I think they're all provided together.
5

6 JACKSON: So to your knowledge then, there is no test requirement on
7 these systems like every 730 hours this type?
8

9 DUBIEL: No sir, there's no requirement.
10

11 JACKSON: What's then the plant's experience with the waste gas system,
12 I'm jumping around a little bit here but I'm trying to pick up loose
13 ends
14

15 DUBIEL: Okay.
16

17 JACKSON: Has there been any problems with a leak tank or the waste gas
18 system in previous, during previous operations?
19

20 DUBIEL: I think, I don't think that we can say that there's been any
21 problems or that there hasn't been any problems, I think the one thing
22 we can say is that, well I can say from a radiological standpoint that
23 if we had any leakage it was non-radioactive. The operations personnel
24 might know that we had problems due to the excess nitrogen leakage or
25

1 usage in the system I can tell you that we looked at a couple of waste
2 gas decay tanks to release to the environment through normal release
3 permits and found nothing, no activity whatsoever meaning that the tanks
4 were pumped up with nitrogen through the vent header system rather than
5 with any waste gas, I think this relates back to the fact that we were a
6 brand new plant it looks like we had a pretty good tight core and that
7 the gas, dissolved gas activity in the coolant really had not begun to
8 build yet so I wouldn't expect to see radioactive gases in the system
9 that could give you a indication very quickly of a problem I wouldn't
10 expect to see them at that point in the plant life.

11
12 JACKSON: Okay. So you never had any kind of burps in the building?

13
14 DUBIEL: No sir. We have had no problems whatsoever on Unit 2 from
15 radiological standpoint.

16
17 JACKSON: Okay. To your knowledge has there been any problem with
18 balancing the ventilation system between Unit 2 and Unit 1 as far as,
19 did you ever have any problem I guess what you just told me was you
20 didn't have any activity levels probably, that were significant enough
21 to pick up as problems but say from Unit 1 to 2 or vice versa?

22
23 DUBIEL: Yes we, there we have had problems. We've had on a couple of
24 occasions run into small releases in Unit 1 that would very quickly
25

1 start showing up in some of the Unit 2 exhaust systems primarily the
2 Fuel Handling Building exhaust systems where we'd see it. The Unit 2
3 systems to my knowledge, ventilation HVAC systems, have not been balanced.
4 There was an effort that was ongoing at the time, particular situation
5 of not having design flows established was identified and was picked up
6 as one of the work items and was in progress at the time. We had a
7 couple of engineers assigned I don't know specifically the engineer, but
8 it was from Ron Warren's group which is the Unit 2 Mechanical Engineering
9 group. They were assigned I think they were still in the early stages
10 of going through and taking flow measurements in the various cubicles at
11 that time of the accident.

12
13 JACKSON: I'm skipping around again. During the first three days we had
14 various sketchy information on some of the gaseous releases and also
15 liquid releases, I say liquid, I mean IWTS, Industrial Waste Treatment
16 System and there was some reports generated for this period that gave
17 numbers based on certain concentrations and certain flows of dilution
18 waters. Did you become involved in generating those reports?

19
20 DUBIEL: Not in generating the reports, I was involved in the front end
21 of that, which was actually the taking of samples and identifying what
22 isotopes existed in what sumps and what, by what means we could discharge
23 the sumps so as to provide assurance that we would not exceed MPC at the
24 final discharge.

25

1 JACKSON: On the some of the reports that were after the fact that said
2 we released this many curies of Iodine-131 were you involved in making
3 the assumptions on what concentrations you had at certain periods?

5 DUBIEL: Well, you saying assumptions, the concentrations that we had
6 were identified by grab sampling and subsequent counting on a GeLi MCA
7 system.

9 JACKSON: Okay but I've seen a statement or two that said. I think this
10 related specifically to the Industrial Waste Treatment System that said
11 we didn't have enough, essentially it was said we didn't have enough
12 data available for this period and therefore we assumed the average
13 concentration from 3/28 until 4/1 or something like this.

15 DUBIEL: No. I was not involved in any of the tail end work which was
16 to put the whole picture together if there were periods where there
17 might of been data missing it could be due to two factors, one we could
18 of had data and misplaced it or it could of been that for a period of
19 time there was no data taken I really couldn't answer that.

21 JACKSON: Okay fine. I believe that's all the questions I have.

23 RESNER: We're having a short delay here on deciding on a line of ques-
24 tions.

1 DONALDSON: Okay. I'll pick it up.

2
3 JACKSON: Dale I have only about 4 or 5 questions, if you want to go go
4 ahead.

5
6 RESNER: For the record note that Mr. Jackson is no longer present
7 during the interview and that

8
9 DONALDSON: Donaldson, hit it Tom.

10
11 RESNER: How much time do we have left on this side?

12
13 NOT IDENTIFIED: At least 20 minutes.

14
15 ESSIG: Dick this is Essig speaking, like Larry Jackson I'm probably
16 gonna, I got a bunch of loose ends here that I kind of want to tie
17 together I've been in on both of the discussions with you before and so
18 I think I pretty much understand the extent to which you involved in a
19 lot of areas but there is still a couple of tail end questions which I'm
20 certainly asking several people that I'm trying to piece it together and
21 I'm not asking you because I think that you necessarily have the entire
22 answer but just because you were there and you may have been involved.
23 The questions are this. Your Meteorological Contractor, by the way I'm
24 switching now to the offsite dose calculations. Picture your side of
25

1 the things. Your Meteorological Contractor, Pickard, Lowell and Garrett
2 became involved on Wednesday and were estimating atmospheric dispersion
3 values during the day and as I understand that these were provided to
4 the corporate office, Mr. Dave Karl; the corporate meteorologist late in
5 the day like around 5 o'clock or so. And at some time they were later
6 made available to the site, I think they went to the ECS. Are you aware
7 of any attempt by either yourself or by any of the others that were
8 either in Unit 2 with you or in Unit 1, of an attempt to reassess the
9 releases that had gone on in light of the more realistic Chi/Q values
10 which had been provided by the actual on line met data as opposed to the
11 previous ones which had been estimated using the Isoflex.

12
13 DUBIEL: The only thing I'm aware of Tom is that late in the afternoon
14 on Wednesday the 28th there was an effort being made in Unit 1 Control
15 Room which was ECS at that time to use the X/Q and I'm now assuming
16 because I don't know for a fact that it was a Pickard and Lowell updated
17 X/Q's, I know that they were trying to go back and re-establish a Q
18 factor or a release rate curie per second. At that time there's a
19 fairly major effort to try to do that by calculating, back calculating
20 from field survey data to an actual release rate. I myself was not
21 involved in that end. I do not know that the updated X/Q's for a fact,
22 now that you mentioned that it seems to make sense but I can't be sure
23 on that.

24
25

1 ESSIG: I have a related question and early in the day on the 28th in
2 discussions with Mr. Crawford and Benson, the nuclear engineers who were
3 involved in some of the offsite dose calculations they had indicated
4 that I think it was Mr. Crawford that had said he had made the initial
5 prediction of the offsite dose rate in Goldsboro which he had discussed
6 with you and he seemed to recall that the initial prediction was something
7 on the order of either 10 R per hour or 40 R per hour, it was a 10 R
8 intergrated dose or something like that but I wasn't holding him to that
9 because we'll check the records on that but the point was that it was a
10 fairly significant dose rate predicted for Goldsboro. And then sometime
11 later I think the record bears out the fact that it was about an hour
12 and a half later it was subsequently verified that it was in fact less
13 than 1 mR per hour in other words the prediction was conservative by
14 about 4 orders of magnitude. Now Mr. Crawford indicated that he subse-
15 quently, then using the Procedure 1670.4, The Offsite Dose Calculation
16 Procedure, he proceeded to iterate to home in on the true source term
17 using the method outlined therein where you take the ratio of the offsite
18 measured to the offsite predicted or it maybe the other way around and
19 apply it to the source term and attempt to home in what the source term
20 really is. And as I understand what he told me that there were about
21 three attempts made to do this, making the calculation using the dome
22 monitor reading, the extrapolated dome monitor reading and then making
23 the calculation, shall we say, in the forward direction which is from
24 source term through atmospheric dispersion to offsite dose rate and
25

1 there were about three or four iterations and I think it was indicated
2 to me that the last iteration they were predicting for whatever sector
3 it was, something on order of 2 mR per hour and it was measured to be
4 something less than 1. It might of been measured with a PIC-6 which
5 doesn't indicate below 1.
6

7 DUBIEL: That's correct.
8

9 ESSIG: But then it was indicated to me that the actual estimation of
10 source term by the methods outlined in 1670.4 was discontinued, that is
11 the calculation in that particular forward direction was discontinued
12 and instead calculations were now being made at a backward direction,
13 that is they were taking the measured dose rate, the atmospheric dispersion
14 value and getting it back to an apparent source term which would give
15 you that. Okay with that preamble, then do you know what use was being
16 made of the source terms that were generated in that manner? They were
17 being given to somebody and I have reason I think that somebody might of
18 been either you or Mulleavy and I'm not sure of what was being done with
19 them.
20

21 DUBIEL: Those source terms, first of all I don't recall any of the
22 calculated source terms so I feel fairly confident in saying they were
23 not being fed back to me. The field data itself was about the only data
24
25

1 that I was actually going on as far what the levels were offsite whether
2 or not they are being fed to the ECS within Tom Mulleavy I really don't
3 know. There was sometime early in that afternoon that those people that
4 you mentioned Howy Crawford and Mike Benson and Tom Mulleavy and all the
5 people at ECS established themselves in Unit 1 including the nuclear
6 engineers Crawford and Benson, who'd previously been in the Unit 2
7 Control Room with me. At that point I essentially became kind of a
8 outsider as far as the offsite doses were concerned. I was monitoring
9 the radio messages, what we were taking notes to see, what levels were
10 being recorded so that we would have a handle on it but we were not in
11 fact doing any calculations or back calculations in the Unit 2 Control
12 Room.

13
14 ESSIG: Okay. Do you know that at any time that I should preference
15 this question by a comment, that I may have asked you this in the most
16 recent interview that we conducted of you but the copy of the tape that
17 we made, we have the original but the copy of the tape was bad and I was
18 gonna listen to it again to see how you responded but I don't have it so
19 I think I maybe asking you something that I asked you previously so I'll
20 ask you to bear with me on this one. The procedure 1670.6 for Offsite
21 Surveys, one of the items in there to be considered is the placement of
22 TLD's at special locations, TLD's which could be removed on a very
23 frequent basis like every four hours, these would be in addition to the
24 TLD's that are out as part of the normal routine, radiological environmental
25

1 monitoring program which I think we have established by interviewing
2 various people that those TLD's were pulled in the afternoon of the
3 29th. Now my question is, do you, were you aware while you were involved
4 with the offsite survey helper, if any consideration was given to placement
5 of TLD's in additional locations for the purpose of attempting to intergrate
6 over a number of these so to speak hills and valleys which we're having
7 in dose rate as the wind was shifting the dose rate seemed to be going
8 up and down rather rapidly, were you aware of any were those considered
9 at all and if so what was the result of that consideration?

10
11 DUBIEL: Thinking back, I know for a fact that we did not put any additional
12 TLD's out. The item was addressed and the results was that the TLD's
13 would be, existing TLD's, part of the existing radiation monitoring
14 program, the offsite monitoring program. Those TLD's would be changed
15 at a increase in frequency, increased frequency, but no additional TLD's
16 would be put out.

17
18 ESSIG: Did you in fact even have any TLD's of sufficient sensitivity,
19 the environment calcium sulfite TLD's to, did you have them on hand even
20 to put out at the?

21
22 DUBIEL: We did not. No.
23
24
25

1 ESSIG: Did you have to get those from your contractor, from RMC or
2 teledyne?

3
4 DUBIEL: That's correct.

5
6 ESSIG: Okay. My next question and I think I have maybe oh perhaps one
7 or two more and it concerns any guidance or instructions, oral instructions
8 which may have been given to the offsite survey teams initially. First
9 of all, it was, I think it was re-established reasonably early that the
10 radioactivity that was being measured offsite was in fact 80 Kev gamma,
11 well it was Xenon 133 which then we know it emits a 81 Kev gamma. And
12 I'm just wondering if any precautionary statements, such as measuring
13 that low energy gamma with a closed window GM might not be advisable
14 because of the fact that that GM might grossly under respond to the 81
15 Kev gamma, do you know if any precautionary notes were given or were
16 they instructed to take all open window readings or what kind of instruc-
17 tions might of been given?

18
19 DUBIEL: I don't recall that any specific instructions relative to open
20 or close window readings were given initially. I don't recall specifically
21 when we started going to a dual reading, in other words, an open window,
22 an closed window reading. The initial surveys I believe were done with
23 PIC-6's which has does have a window but it's a relatively small area.
24 And I think that also is the reason why a lot of the numbers were less
25 than 1 mR since that is the minimum sensitivity.

1 ESSIG: Yes.

2
3 DUBIEL: Or minimum scale reading that you could actually see. Again I
4 can't tell you when we gave the instruction nor can I tell you exactly
5 how the instruction was transmitted but at some point in time during the
6 first day it started coming back as both open and closed window readings
7 for each dose rate that was taken. I can't tell you who gave that
8 instruction or when.

9
10 ESSIG: Were most of the instruments used during that first day? Were
11 they either the Eberline PIC-6 or the Eberline R02? Were there in fact
12 any GM's even used the first day?

13
14 DUBIEL: There were some GM tubes used. I think the teams themselves
15 and I don't have a real good handle on exactly which teams had what
16 problems but I do recall several of the PIC-6's failing, they're not a
17 very rigid instrument and being replaced by the E-520, the Eberline
18 E-520 which is a GM tube. I think from readings it was pretty obvious
19 which instruments were being used since we did at some point in time get
20 down to a .01 mR per hour scale reading and I think that is indicative
21 of switching over to a GM tube in a E-520. But I think predominantly
22 first of all the PIC-6's were used initially and I think that the R02's
23 which are probably the most abundant source of dose rate instruments in
24 plant at the time were probably the first replacements put out in the
25 field and subsequently some E-520's were involved.

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1 ESSIG: Okay. Another follow on question of that, with regard to the
2 use of well in particularly the R02 in the helicopter surveys, I think
3 you're perhaps aware of the Mylar window and any pressures you ever
4 pushed on one with your fingers and you can get a scale that fluctuates
5 because you're affecting the volume and were you aware of any precautionary
6 notes given to the teams that were, the individual that would be in the
7 helicopter hanging the R02 out the window which might be subjected to
8 some pretty stiff air currents from the helicopter blades?
9

10 DUBIEL: I am not aware, I did not even know what type of instrument was
11 in the helicopter, to be honest with you.
12

13 ESSIG: Okay.
14

15 RESNER: At this point we'll break the tape to change it. The time is
16 now 5:04 PM.
17

18 RESNER: The time now is 5:05 PM and this is a continuation of the
19 interview Mr. Richard W. Dubiel. Mr. Donaldson, or excuse me, Mr. Essig
20 will continue questioning.
21

22 ESSIG: Dick, there's one other point that Larry Jackson I think touched
23 on a little bit and it's a point of that I'm a little confused about is
24 exactly how it was handled. One time during the first three days following
25

1 the event and I obtained this information from talking with one of the
2 fellows that was in the ECS and his recollection of it was a little
3 fuzzy and so I wanted to see if I could ask you while it was a little
4 fuzzy in that he later amended that to indicate like he thought it was
5 indicated but the question is, at some time during the first three days
6 there might have been an indication that there were releases occurring
7 via Unit 1, via the Unit 1 vent, the plant vent, I guess there, are
8 there enough, I'm not this familiar with the actual system itself as
9 some of our other fellows are, but are there enough ventilation cross
10 connects between fuel either fuel handling building or Aux building that
11 is conceivable well I know your sample, your sample lines for Unit 2 is
12 in Unit 1.

13
14 DUBIEL: Right.

15
16 ESSIG: Were you aware of any releases occurring, these would presumably
17 be Unit 2 releases that were occurring from the Unit 1 vent?

18
19 DUBIEL: I can not recall that we did in fact have releases in Unit 1
20 other than those associated with the actual drawing of letdown samples
21 in Unit 1. As a matter of fact, we were expecting to see fairly signi-
22 ficant levels of gas going out the Unit 1 Stack while we drew the Unit 2
23 letdown sample. But I don't recall and I don't believe that Unit 1 had
24 a major problem of releasing, I image that they probably saw some upscale
25

1 deflection in gases and subsequently you did that, that would also
2 indicate on iodine whether or not the charcoals actually showed iodine
3 or not, I don't know. I don't think that the ventilation system cross
4 connects are all that significant. There're significant in one specific
5 area and that is the where fuel pool to fuel pool is wide open. But the
6 rest of the building is relatively tight and with relatively small
7 openings were either connected through door ways where it's not very
8 difficult to establish a flow or a positive flow in one direction. I
9 don't believe that there was a significant amount of activity going
10 over, although I'd imagine there'd be some indications in Unit 1.
11

12 ESSIG: Okay. With regard to the letdown sample that was collected, you
13 indicated that there would be a, that was anticipated that there'd be
14 some releases associated with it. Was this to your knowledge factored
15 in to the source term calculation procedure that we were just discussing
16 a little bit ago, the Procedure 1670.4 for Offsite Dose Assessment?
17

18 DUBIEL: No, I don't believe it was. When I said that there'd be some
19 increase level or some, we were concerned about it. I don't think our
20 concern was that it would make very large difference in what the total
21 station effluent was showing at the time but it would be different,
22 considerably higher than what Unit 1 was putting out at the time.
23
24
25

1 ESSIG: Okay. That maybe was the source of the confusion that it was
2 small relative to the total station releases were.
3

4 DUBIEL: That's correct.
5

6 ESSIG: But that it was large compared to what Unit 1 was putting out.
7

8 DUBIEL: Right.
9

10 ESSIG: Okay. And one other question, this has to do with the position
11 I'm not sure exactly what its proper name is, but we talked with a
12 couple individuals who or one individual who stated that he was called
13 the ECS Coordinator and then we heard also the position called ECS
14 Director and I guess I would just like to establish for the record, to
15 your knowledge do you know which is the proper name or are they two
16 positions, or are they in fact one position. I talked with Mr. Tsaggaris
17 earlier today and he indicated to me that he was the ECS Coordinator for
18 the period from noon on Friday till about midnight on Friday night the
19 30th and he had relieved Mr. William Potts, who had served in that
20 position. Do you know if there's any distinction between these two
21 positions or are they just one position that goes by a couple of different
22 names?
23
24
25

1 DUBIEL: I think the confusion is that under our Emergency Plan the
2 individual in charge of the emergency control station was Tom Mulleavy
3 and at the time of the event, his duties included not only getting the
4 offsite and onsite monitoring teams but also to be concerned about the
5 personnel onsite, dose rates and airborne activity, problems that might
6 arrive at various assembly areas, and things of that nature. Also to
7 provide health physics control over the, any emergency maintenance that
8 might be necessary. The position that the two gentlemen, Bill Potts and
9 Alexis Tsaggaris were assuming essentially was a position that developed
10 several days downstream of the actual event. It became rather than what
11 we'd expect the ECS Director to do in the 6-10 12 hours immediately
12 following the accident. It became a position more of just coordinating
13 the on and offsite well, first of all the offsite monitoring which is
14 airborne and dose rate but also the onsite monitoring and sampling for
15 IWT sewage and things of that nature. Essentially it evolved into a
16 coordinator's job rather than a directors job, if you will, I don't
17 believe that there were ever two people in charge of the ECS at any
18 given time. I think they'll all the same thing, it's more.

19
20 ESSIG: So what I understand, let me just give it back to you assorted
21 in my own words and so that I can see if I have a picture of what was
22 going on. Initially, on the 28th you and Mulleavy, were after the ECS
23 had been relocated up to the Unit 2 Control Room. You and Mulleavy were
24 there together essentially, and then you were split apart when he went,
25

1 when the ECS was relocated from the Unit 1 Control Room or the Unit 2 to
2 the Unit 1 Control Room.

3
4 DUBIEL: That's correct.

5
6 ESSIG: He was in the, he was functioning in a sort of a combined ECS
7 Director and the position of then which later sort of revolved to a
8 Coordinator.

9
10 DUBIEL: That's correct.

11
12 ESSIG: He was sort of holding down all of that during the first day.

13
14 DUBIEL: That's correct.

15
16 ESSIG: Okay. Then at some time, okay I can pick up the other end with
17 from the interview of Alexis Tsaggaris by knowing that he was functioning
18 as the ECS Coordinator for the period from Friday, noon to Friday midnight
19 and Potts was functioning in that capacity sometime before him but could
20 you fill in as best you recall whom, when that, when the need was foreseen-
21 ing to develop that and who might of been functioning in that capacity
22 because Tsaggaris didn't come onsite until noon Friday.

1 DUBIEL: That's correct.
2

3 ESSIG: Potts had it sometime before that, the shift immediately before
4 that and I'm just trying to establish who might of had it from say
5 Wednesday between Wednesday you perhaps foresaw a need for it, either
6 Wednesday or Thursday.
7

8 DUBIEL: I'm kind of at a loss for a period of time in there. The, it
9 look, I think that the situation essentially involved with Tom was there
10 until sometime after midnight on the 29th into the early morning hours
11 of the 29th, I'm not exactly sure when he finally left. I know he left
12 prior to my leaving. And when he left, I believe that the entire offsite
13 dose or monitoring coordination effort was being done by personnel at
14 the Observation Center and whose those personnel were is, the only
15 individual I can remember over there was Earl Gee and he was there at 8
16 o'clock in the evening but I believe that that group had taken over Earl
17 Gee and I'm just trying to think and for the life of me I can't think of
18 who else was there. I stopped over about 8 o'clock in the evening to
19 grab a sandwich over there and I recall Earl at that time.
20

21 RESNER: We'll take a short break.
22

23 DUBIEL: Earl Gee was on the phone, I believe Sandy Larra was there. I
24 don't remember who else, there's several people around a table, the map
25

1 was laid out on the table and they were calling, radioing into the
2 helicopter to the offsite monitoring teams. So they essentially had
3 assumed all the responsibilities of the offsite monitoring program.
4 The, their function eventually moved back in plant. I don't believe
5 that occurred for a day or two, it may have been with Alexis coming in.
6

7 ESSIG: I'm wondering if it didn't occur with Potts coming in.
8

9 DUBIEL: It could have. Excuse me, you're right. Potts was there
10 before Alexis and I don't remember when that actually occurred.
11

12 ESSIG: Did you have any contact with Potts when he came on board? Were
13 you aware that he had sort of taken over as a ECS, what became an ECS
14 Coordinator or would this of been done under Mulleavy?
15

16 DUBIEL: I didn't have any contact with him that I can remember. I
17 think though the problem on, I had very little recollection of what
18 transpired in the early morning hours of the 29th. I think I left the
19 site sometime around 6 o'clock and I really have, I can recall that Tom
20 and I did some discussions about how we could get people to relieve us
21 and I recall the foreman, we sent some foreman home early so that they
22 could come back in at a set time to relieve us. I believe there were
23 some foreman scheduled to come in at 7 o'clock in the morning and I
24 think I left at 6. I was about ready to fall on my face at that time
25

1 and I think there might have been an hour there where there was no one
2 in the Unit 1, Unit 2 Control Room from the health physics supervision
3 group. Whether Tom was relieved on station or whether it was turned
4 over to a, possibly a Unit 1 Supervisor, a Superintendent or something
5 of that, I really don't know. I just can't remember for that period of
6 time.

7
8 ESSIG: We have another interview scheduled with Mr. Mulleavy so I'll
9 ask him what his recollection was.

10
11 RESNER: (Says something but can not hear because of airplane going
12 overhead).

13
14 ESSIG: I think with that, that pretty much concludes the immediate list
15 of questions that I have, notes that I've made and Dale, if you want to
16 pursue the questions that you have there, the floor is yours.

17
18 DONALDSON: At this point let us go back and review one thing real
19 quick. We talked briefly about the emergency organization and on looking
20 it over I don't see where the responsibility for Emergency Health Physics
21 coverage on that and I feel you had a comment that you could make that
22 once more.

1 DUBIEL: Well the actual responsibility for what we've termed our Emergency
2 Repair Party, has rested with the individual in charge of the Emergency
3 Control Station, however, I think in, that particular responsibility was
4 based on past experiences and what we had anticipated as far as where we
5 would actually be directing our personnel from. I think we felt that
6 following any accident, that the Unit 1 Health Physics Lab would be the
7 plant at which we would be dispatching all of our Emergency Repair
8 Maintenance personnel. During the event, however, it was pretty obvious
9 that we wanted to try to isolate the two units. We shut the door between
10 the two units, such that any entries had to be made from Unit 2 and the
11 responsibility really, I came to the Unit 2 Control Room, I assumed that
12 responsibility, although I think you'll find in the plan it's designed
13 to be with the ECS.

14
15 RESNER: Another short break.

16
17 (There is an airplane going overhead and they are talking amongst them-
18 selves).

19
20 DONALDSON: Okay. Under emergency conditions, what criteria do you use
21 to establish exposure limits? Specifically, who can authorize an individual
22 to take emergency exposures?
23
24
25

1 DUBIEL: Dale, the, I'm trying to recall the wording in our Emergency
2 Plan, the authorization I believe as it's wording in our Plan is that
3 the Superintendent or I should, let me rephrase that, the Emergency
4 Director can, in fact, authorize and I believe the wording requires that
5 the individual be informed of the expected or anticipated exposure at
6 the time or prior to the entry and it must be on a voluntary basis.
7

8 DONALDSON: Did you and Gary Miller have a discussion at any time on the
9 28th regarding who would authorize various exposures and what procedures
10 would be followed in granting access or directing that certain actions
11 be taken in radiologically contaminated or wherever radiation was located?
12

13 DUBIEL: I don't recall Gary Miller and I having that type of discussion.
14 I believe that on the 28th, the entries that we were making and the
15 levels that we were seeing allowed us to feel relatively confident that
16 we could stay close to the 3 rem per quarter guideline. So I don't
17 believe it became an issue on the 28th.
18

19 DONALDSON: Prior to the entry of individuals for the various activities,
20 pulling chemistry samples, building tours for assessing conditions or
21 performing maintenance work, did you yourself personally provide any
22 direction or briefing as to protective clothing requirements, stay times
23 and the expected exposures?
24
25

1 DUBIEL: I gave, I filled almost every individual that went in. I feel
2 confident I got every individual that went in, I had a chance to talk
3 with them. There were not altogether that many entries made. Essentially,
4 what I was giving as direction was we were, first of all I was, we were
5 going in full protective clothing, scott air packs, the main thrust of
6 the exposure control from my standpoint, I was first of all concerned at
7 the individuals would in fact enter all areas with a teletector into
8 those areas with a teletector extended in front of them as such that
9 they what levels they were getting into prior to getting into the areas.
10 Also, I was trying to give them some quick things to think about in the
11 area of dose rate that they could convert R per hour to R per minute it
12 was my real, was what I was trying to get them to think about rather
13 than try to worry about R per hour versus how long there're in there. I
14 though if they could convert the dose rate to an R per minute, they'd
15 have a pretty good handle on how much time they had to stay in an area.
16 I was using one and half rem as a guideline to shot for and my purpose
17 in doing that was that I felt that we had to give ourselves about a 1
18 1/2 rem margin of error, both from, primarily from the standpoint that
19 if they went up to 1 1/2 rem in an area, it took them some period of
20 time to get out of the building and that typically would run them through
21 some fairly high levels. I also at that time, did not have a real good
22 up to date exposure document on all individuals and I was using the
23 individuals knowledge of their own exposure to date and what information
24 we had from the printout. That we had available to us. To try to control
25

1 that, I felt that there was a definite possibility of an individual or
2 an individual not being sure in underestimating what he had already
3 received for the quarter, or in our documents possibly not being, and I
4 knew they were not up to the minute. They typically lag by well at
5 least to the previous Monday, so we probably a couple of days behind on
6 our printouts. So I was using 1 1/2 rem as the guideline. As far as
7 dose rates in areas, I don't think initially that we really had a good
8 handle and I was using the individuals who were going in as essentially
9 the monitoring team also. And they came back the first thing we would
10 do was to debrief them on dose rates.

11
12 DONALDSON: Were the dose rates written down?

13
14 DUBIEL: The dose rates were written down. I had them in a single text
15 on both the first day and the second day xeroxed layout drawings. I had
16 to cut and paste them together to make them into one single drawing and
17 started recording dose rates on them. I do recall very vividly though
18 that the, all of the dose rates that we had on day one are, I should say
19 that were available to us at about 5 o'clock in the morning on the 29th,
20 which is just prior to me leaving. When I came back in about 1:30 or 2
21 o'clock that afternoon, those drawings, those layouts with the dose
22 rates on them were nowhere to be found. I reinitiated the same type of
23 an effort.
24
25

1 DONALDSON: Would you say that from your standpoint in the Emergency
2 Organization, that the Emergency Director and that the Organization as a
3 whole exerted every reasonable effort to maintain or minimize exposures?
4

5 DUBIEL: Well I think at the time, that there was a conscience effort to
6 minimize exposures. I think that each individual entry was thoroughly
7 reviewed to assure that it was a necessity and that we could things in
8 the quickest possible manner. I think in retrospect, we probably could
9 go back and find things that we did, that we could have gotten away
10 without doing but hind sight is a lot easier. I think at the time, it
11 was a, definitely a conscience effort to minimize exposures.
12

13 DONALDSON: There's a criteria in the Emergency Plan that states that
14 "Site evacuation of all non-essential personnel is to be initiated if
15 gas in the station vent exceeds high alarm setpoint and 2 ARMs exceed 10
16 R per hour". Evacuation at the site occurred at 11:10, somewhat after
17 these conditions occurred. Did you have a discussion with anyone or did
18 you consciously evaluate this criterion and decide not to perform an
19 evacuation on these levels that had been reached?
20

21 DUBIEL: Yes we did. First of all we had the personnel assemble at
22 various assembly areas. There were then efforts made to monitor both
23 the, first, primarily the dose rates in those areas to determine whether
24 or not it was necessary to move people. I can specifically remember the
25

1 Catalytic personnel at the South Assembly Area, actually they were moved
2 down to the South Gate, right outside the trailer here and that area
3 being evaluated. At the time, we had decided that since the wind was
4 actually blowing in the other direction at that time, that there would
5 be no need to move those people and that there might be source of manpower
6 that could be utilized.

7
8 RESNER: Having a short break, be right back.

9
10 DUBIEL: A similiar evaluation were made at the North Assembly Area
11 which is in the auditorium and also at the warehouse. When it became
12 apparent, I believe the north assembly and the warehouse was actually
13 those areas evacuated at some time prior to 11:10, I don't remember
14 exactly when but I believe it was earlier than the actual full site
15 evacuation.

16
17 DONALDSON: What you're saying is that rather than using this criterion
18 based on the station vent, you were using more realistic or more actual
19 radiation levels in the area where people were assembled.

20
21 DUBIEL: That's correct. That's correct. And as the wind shifted from
22 west to around to north, north being downwind, that is when we started
23 running into problems with dose rates at the north assembly area and at
24 the warehouse and I don't recall the time but I believe it was earlier
25

1 than 11:00 o'clock that those people were moved on. The people at the
2 south assembly essentially had no indication of any increased dose rates
3 above background. And it wasn't until probably the 11:10 time that
4 you're referring to that those people were finally allowed to leave and
5 it was not so much an evacuation due to reaching evacuation criteria,
6 but just the realization that we probably wouldn't have or had very low
7 probability of having any need for those people.
8

9 DONALDSON: I believe now, I'm gonna have you give me the date because I
10 don't at this point I don't remember the date. I'm not sure about the
11 date I have written here. Mr. Velez and Mr. Houser took a primary
12 sample and I believe it was early in the morning of the 29th, or was it
13 the 28th?
14

15 DUBIEL: Well I'm gonna disagree with both of those. I believe it was
16 in the afternoon of the 29th.
17

18 DONALDSON: Okay.
19

20 DUBIEL: My recollection is 1600 on the 29th.
21

22 DONALDSON: Okay. That sounds sits in with another time I heard.
23
24
25

1 DUBIEL: Okay. That is the time I believe that that sample was taken.
2

3 DONALDSON: I know I've got it written down. Allright. I'd like to
4 talk about that one for a little bit. Were you on station?
5

6 DUBIEL: Yes I was.
7

8 DONALDSON: Prior to the taking of that sample, did you in fact meet
9 with Mr. Velez and Mr. Houser and brief them and discuss the operation?
10

11 DUBIEL: I spoke with Mr. Velez. I did not speak with, to my, as far as
12 I can remember I don't remember talking to Ed Houser.
13

14 DONALDSON: Could you give me the text of the discussion with Mr. Velez?
15

16 DUBIEL: Essentially, well first of all, Pete Velez is a Radiation
17 Protection Foreman. He's also a, in my opinion, a extremely good Radiation
18 Protection Foreman. He was a former Rad Chem Tech, he's very knowledgeable
19 in drawing of letdown samples, although I don't believe he's specifically
20 knowledgeable in the valve lineup for Unit 2 as in some ways differs
21 from Unit 1 and he's only been trained with the technician on the Unit 1
22 system. My, as I remember the conversation, it was relatively short. I
23 did mention to Pete that the sample should be drawn by dividing up the
24 routine as much as practicable so that one person didn't take the entire,
25

1 do the entire valve lineup and drawing of the sample due to the
2 anticipated dose rates.

3
4 DONALDSON: Now let me just back up a second and touch on this point.
5 You mentioned that you knew that Mr. Velez might not be that familiar
6 with the valve lineups on Unit 2. Would you also discuss the differences
7 or the similarities between adjusting the drag valves and the actual
8 manipulation to open the sample line? Comparisons, are they the same in
9 Unit 1 and Unit 2 or are they different?

10
11 DUBIEL: Okay. As far as the actual sample line, the sample lines them-
12 selves that you would open to purge or to draw a sample from the Recirc,
13 it's essentially the same and it's on the front of the panel in the
14 sample sink. I think that there Pete would be fully aware. He may not
15 know the valve numbering, nomenclature on the valve, the Unit 2 sample
16 valves but they're essentially the same as the Unit 1 valves. It's a
17 very simple thing to do. As far as manipulating the drag valve, there
18 again I don't believe that the system itself is altogether that different.
19 There are some variations between Unit 1 and Unit 2. I guess the point
20 in fact though is that letdown sampling, although it looks simple on
21 prints, is not easy and it takes somebody who has experience in adjusting
22 the system to rapidly establish good letdown flow without popping relief
23 valves and that type of thing.

1 DONALDSON: I guess that I'm saying is do you have, did you sit down and
2 figure out, or mentally figure out how long it would take for the lineup
3 of the valves and figure out how long it would take to manipulate with
4 the system on Recirc, purge the line, pull the sample and determine
5 whether two individuals would be sufficient or whether more would be
6 needed?
7

8 DUBIEL: For that particular evolution, no we did not. I think at that
9 point I pretty much left the evolution in the hands of both Pete Velez
10 and Ed Houser. Ed Houser's background also is strong in health physics
11 and I felt relatively confident that those two individuals could do as
12 good a job in obtaining the sample and at minimizing exposures as any
13 other, anybody including myself. That could of been associated with
14 that.
15

16 DONALDSON: Let me back up to put this whole discussion in perspective
17 and let me ask one question. How important was this sample? Previously
18 during this interview you had stated that after the morning of the 28th
19 or in the early afternoon of the 28th there were no manipulations or
20 entries that were absolutely critical to maintaining the plant in a safe
21 condition. What I'm concerned about here is, who requested this sample,
22 what was the purpose of the sample and how important was it to continue
23 to safe operation of the plant?
24
25

1 DUBIEL: The driving force behind the obtaining of the sample was to
2 determine the boron concentration of the coolant.
3

4 DONALDSON: You've had emergency borated at this time, is that not
5 correct?
6

7 DUBIEL: That's correct.
8

9 DONALDSON: What led someone or whoever it was that requested to think
10 that the boron concentration would be anything other than approximately
11 21, 2150 which I think was the last previous sample taken after emergency
12 boration or there about, or have you calculated that yet?
13

14 DUBIEL: Well, I think the main concern was that we had had the boron
15 samples prior to the core damage after the actual trip but prior to any
16 damage showing levels of 700 and 400 ppm.
17

18 DONALDSON: Those were taken prior to emergency boration, was it not?
19

20 DUBIEL: That's correct.
21

22 DONALDSON: Were there any indications in the IRMs or SRMs to indicate
23 that emergency boration had not been successful?
24
25

1 DUBIEL: Dale, on thinking back I'm having a tough time right now recalling.
2 I do believe that there were many individuals and by many individuals
3 it's kind of hard to put names or even companies. I think they span
4 B&W, the NRC and Met Ed and GPU but there's probably somebody from every
5 organization. That on the second day felt that were still, as a potential
6 of us still being critical in the core. That was a constant topic of
7 discussion.

8
9 DONALDSON: Then in, did you as the Senior Health Physics individual in
10 being involved in these discussions determine that from a risk benefit
11 analysis that this sample should be taken?

12
13 DUBIEL: I felt that that time that it was necessary.

14
15 DONALDSON: Fine. Okay, let's go with the iteration. I believe that we
16 were talking about what has been told to Mr. Velez and we covered the
17 manipulation of the sample lines. Do you recall whether or not you
18 discussed the use of remote handling tools for handling of the sample
19 once it had been taken?

20
21 DUBIEL: At that time Dale we did not. Okay, also I'd like to point out
22 right here that I don't think even at that time we had any feel for the
23
24
25

1 levels of radiation that the letdown was gonna give and it wasn't until
2 the sample was drawn that we got our first real piece of eye opening
3 data that put the whole thing in perspective.
4

5 DONALDSON: I understand that now. I just want to make one thing clear
6 now. You did talk with Mr. Velez, you did not talk to Mr. Houser. Did
7 you either hear through, from Mr. Houser over the telephone or through
8 contacting him directly, did you inform them of the fact that you didn't
9 have any idea of what the dose rates might be and did you ascertain that
10 both individuals, Mr. Velez and Mr. Houser were in fact volunteers?
11

12 DUBIEL: Thinking back, it was never put to them straight forward are
13 you volunteering. However, neither of them hesitated. When asked for
14 the sample, the two of them were ...
15

16 DONALDSON: Did the thought cross your mind to ask them if they were
17 willing to take it and put into the contexts of are you a volunteer.
18 The reason that I ask this, is that your Plan is very specific in stating
19 that all operations of this nature, the individuals will be volunteers.
20 And I think for the record it's important that we go through the thought
21 process in your mind.
22

23 DUBIEL: In my mind, well first of all, no these people were not speci-
24 fically or the question was never specifically brought to their attention,
25

1 "are you a volunteer?" However, I think that I could read into their
2 minds at the time. Looking at the reaction of the individuals and the
3 willingness to do whatever had to be done, to work towards safe shutdown
4 of the plant, there was no question in my mind that the two individuals
5 were willing to do whatever was necessary within reason to assist the
6 overall emergency effort. I think their attitude is what kept me from
7 even thinking whether or not these people were in fact volunteering. I
8 think they were, my opinion is they were. Although it was never asked
9 of them. Also, I think on part of that question you asked about whether
10 or not we spoke of not knowing the exact dose rates. My recollection is
11 that it was, Pete and I discussed it at least to the extent of saying,
12 when we start recircing that sample, we're not gonna know, we don't know
13 what were gonna get and it's got to be approached that way. That we got
14 to look to see what the levels are before we go jumping in and that we
15 got to have some feeling that we can accomplish the objective and still
16 stay within our 3 rem guideline.

17
18 RESNER: When we speak of Pete, this is Pete Velez?

19
20 DUBIEL: Pete Velez, yes sir.

21
22 DONALDSON: Allright. Now, under these conditions, did you discuss the
23 type of dosimetry to be used? Specifically, let me just take a question
24 in time. Do you have extremity badges or TLDs, specifically finger
25 rings or wrist badges?

680 332

1 DUBIEL: We do have extremity TLDs. We did not discuss it. I do not
2 believe the individuals were wearing them.
3

4 DONALDSON: Did you give them a dose limit, a turn back dose so to speak
5 through the operation?
6

7 DUBIEL: Again Dale, the operation, the turn back limit was that we had
8 to have reasonable assurance that we could do the operation and stay
9 within the 3 rem quarterly limit. In this particular case, I was not
10 too concerned about excessive dose in trying to vacate the area because
11 it was just a matter of five steps to be (tape cuts off).
12

13 RESNER: This is the continuation interview of Mr. Richard W. Dubiel.
14 The last tape cut off partially 5:40 p.m., the time now is 5:45 p.m. and
15 Mr. Donaldson will continue to questioning.
16

17 DONALDSON: Since you were not present when the sample I'd like to pick
18 up now after the sample was taken. What was the first call you received
19 from either Mr. Houser or Mr. Velez in reporting back on the results of
20 the operation? Was it shortly after the sample had been taken?
21

22 DUBIEL: Dale, I don't recall the timing of it and nor do I recall who
23 first notified me. I was notified that some period, some point in time
24 within I would say probably within an hour after the sample was drawn.
25

1 DONALDSON: What was the text of that notification?
2

3 DUBIEL: The text of the notification was that we did in fact have the
4 sample, it was being analyzed, Gary Reed was doing the boron analyses and
5 that indications were that Ed Houser may have in fact received slightly
6 more than 3 rem based on pocket dosimeter.
7

8 DONALDSON: Did you receive any indication that your Mr. Houser, Mr.
9 Velez had been contaminated during the operation?
10

11 DUBIEL: I was told that both of them had been contaminated and that
12 they were in fact on there way to take showers and to try to get decon-
13 taminated.
14

15 DONALDSON: Did you issue any instruction to the individual on the other
16 end of the line either to have Mr. Velez or Mr. Houser contact you or
17 did you appoint someone and give direction for followup for these two
18 individuals?
19

20 DUBIEL: No I did not and I think for the reasoning behind that was that
21 I felt first of all Pete Velez was the radiation protection foreman and
22 I felt like if any one was to be sent to assist it would have been a
23 radiation protection foreman and since we already had him there that's
24 the best guy in the world to do the assisting and I think that was my
25 rational on reasoning for not following up any further.

1 DONALDSON: What procedures do you normally follow and what procedures
2 are intended to be followed for individuals during emergencies who are
3 found to have contamination? Let me be more specific, you have a procedure
4 1612, I believe it is on decontamination, is it the intent to follow the
5 basic guidelines of that procedure?
6

7 DUBIEL: Well I think the intent was to follow the guidelines of that
8 procedure I think, well my personal feeling was that we were in a different,
9 in a different ball game here I think and it wasn't really at that point
10 in time that I, that I recognized it, we've had many contamination
11 problems in the five years that I've been here, four and a half years
12 that I've been here, primarily involving the crud products and people
13 working in Unit 1, I don't think we've ever faced an iodine contamination
14 problem which I think is what we really ran into the iodine and some
15 gases and personally I don't think that I really, once I knew what the
16 situation was I don't think that I had the off the cuff knowledge to
17 handle that, it took some time and some talking with people to start
18 getting to a point where I felt comfortable with problems associating
19 with iodine contamination and external contamination.
20

21 DONALDSON: You mentioned it took some time, by what time did you have a
22 grasp on this?
23
24
25

1 DUBIEL: Well I think my, to try to put it in a little bit of a prospective
2 in the time frame I did not hear back from Pete Velez or Ed Houser at
3 the time they, from the time that they left to shower and to decontaminate
4 themselves until I left the site which approximately or I should've left
5 the island was about 11:00 and at that time I went over to the observation
6 center to check in and that's when I first met Ed Houser and found out
7 that Ed in fact couldn't had attempted to decontaminate himself with
8 Pete Velez and was unsuccessful on one spot which either the tip of his
9 forefinger or the tip of his thumb, I don't remember which it was the
10 tip of a finger was the only place that he still showed signs of contamin-
11 ation.

12
13 DONALDSON: Now at, on 11:00 on the 28th, Mr. Houser told you that he
14 only showed contamination in one area?

15
16 DUBTEL: 11:00 on the 29th.

17
18 DONALDSON: We have indications from Mr. Houser or someone else that his
19 hair, portions of his leg, his thigh and a few other areas also remained
20 contaminated.

21
22 DUBIEL: Okay.
23
24
25

1 DONALDSON: In fact for . period of days after the...
2

3 DUBIEL: You're right, I'd forgotten about that, the, if I'm correct I
4 think it was the thumb and the thumb was in fact the hottest spot where
5 the bulk of the contamination was. At that time I do recall now that
6 you mentioned it that he did mention the problems with the hair, problems
7 with the, I think your right on the left thigh and possibly on the arms
8 that were contaminated, but to a much smaller degree.
9

10 DONALDSON: In meeting Mr. Houser and discussing with him, did at all
11 assess the precautions that had been taken or discuss what normally
12 would be done to follow up on an individual who had been contaminated
13 and remained contaminated?
14

15 DUBIEL: We talked for a period of time then, at that time in past
16 practice has been once the individuals has become contaminated to a
17 degree that we could not reasonably remove the contamination it has been
18 our policy that once we establish that the contamination was in fact
19 fixed in the skin and that's further decontamination might in fact
20 deprade the skin or in someway actually be detrimental to the individual
21 rather than removing the contamination, it's been our practice to release
22 those individuals with...depending on the area some possible precautions
23 or followup type methods and then follow the individual for a period
24 days. An example might be if an individuals hands were contaminated,
25

1 we've had individuals in Unit 1 that we've sent home and given instruction
2 to the individual to put on a pair of surgeons gloves when he was eating
3 or smoking a cigarette or something of that nature as a precaution and
4 during the night to put a surgeons glove on and actually tape it firm to
5 the wrist to try sluff some of the contamination off and to come in in
6 the morning with that glove still intact, things of that nature and
7 that's pretty much what we discussed with Ed. We also at that time I
8 started talking to a few of the other people that were there about the
9 potential of using, for instances, potassium permanganate...mild potassium
10 permanganate solution, but unfortunately I was not at the time to familiar
11 with any of those types of procedures I was a little bit reluctant or
12 sceptical of using potassium permanganate without having someone who has
13 gone through the evolution before and is knowledgeable in what concentra-
14 tions and things of that nature.

15
16 DONALDSON: Did you consider the contact of one of your medical consultants
17 to answer this question? Did you discuss it with Mr. Houser or did you
18 just use him with...after your discussion?

19
20 DUBIEL: Dale, I don't believe at that time it was discussed...I'm
21 not....I'm sure it was not discussed with any of our medical consultants
22 and I believe that Mr. Houser was allowed to go essentially as I have
23 indicated earlier with the idea that it would be followed over the
24 period of days and also I recall the thumb being...being wrapped.

25

1 DONALDSON: Who would normally follow this?
2

3 DUBIEL: Well under normal circumstances if something....
4

5 DONALDSON: Let's...not who would normally under these kind of conditions,
6 under your plans and procedures, who should've followed this?
7

8 DUBIEL: Dale, I...I really....I'm having a tough time answering that.
9 I don't know...
10

11 DONALDSON: Aright let's...let's
12

13 DUBIEL: ...Other than it would defininately fall into the situation
14 where the Health Physics group which is divided between myself in the
15 control room and Tom Mulleavy in the ECS that type of an individual. I
16 think though that as far as the emergency plan is concerned I don't feel
17 like at that point in time we were still operating under the structure
18 of the emergency plan.
19

20 DONALDSON: Then you would operating under normal Health Physics procedures?
21

22 DUBIEL: I would feel yeah...at that point in time we were returning to
23 the normal health physics procedures.
24
25

1 DONALDSON: Although there're normal health physics procedures now that
2 we have your HP foreman and yourself engaged in duties that really are
3 not normal in nature, is that correct?
4

5 DUBIEL: That's correct.
6

7 DONALDSON: Did you assign a foreman, either Mr. McCann or Mr. Velez or
8 Mr. Mulleavy or Mr. Huwe or any of the other HP group to assess and
9 followup on Mr. Houser's difficulties?
10

11 DUBIEL: At that time no.
12

13 DONALDSON: Did you request that he leave a urine sample for counting?
14 That he have a whole body count for that no swipes be taken?
15

16 DUBIEL: I did not request that, although at 11:00 when I...or it's 2300
17 when I got over to the observation center. I was informed that the...that
18 that particular procedure at already been followed. It was my understanding
19 that a whole body count had already been taken and that he was already
20 in contact with the RMC people and that urine samples were to be collected
21 and that I believe...I'm drawing a blank here on the nose swipes.
22

23 DONALDSON: Do you know whether anyone did a dose assessment and sat
24 down with Mr. Houser and discussed the significances of that contamination
25 and his exposure during the letdown sample?

1 DUBIEL: I don't...I do not know of anyone that did.
2

3 DONALDSON: What was Mr. Houser's state of mind when you were speaking
4 with him at 11:00 that evening?
5

6 DUBIEL: At 11:00 I felt personally that Ed was...Ed Houser was not
7 overly upset. I felt that Ed was calm that he understood...Ed being
8 involved in health physics for several years prior to becoming a chemistry
9 supervisor. I did not detect any anxiety on his part, I didn't feel
10 that he showed any grave...great concern I...I really felt that he was
11 considerably...very calm under the circumstances.
12

13 DONALDSON: The following day or two did either Mr. McCann or Mr. Mulleavy
14 mention to you that Mr. Houser had contacted them and discussed the
15 situation with them and was somewhat apprehensive?
16

17 DUBIEL: Kerr, Harner who is a chemist, Unit 2 chemist approached me, I
18 believe on Friday. Again the time may not be accurate, but I believe it
19 was on Friday and indicated to me that Ed was in fact very concerned and
20 was...had the feeling that I guess the...the way he put it was that the
21 people didn't care at that time and that kinda concerned me because...you
22 know...quite honestly at that time up until that time I did not feel or
23 didn't have any indication that Ed was in fact so concerned over it and
24 a matter of fact I felt just the opposite based on my speaking with him
25

1 on the 23rd. At that time I called his home I believe... I believe that
2 was approximately 5:00, 1700 on the 30th, it may have been on the 31st,
3 but I believe it was on the 30th. I called his home and found that his
4 number had been changed and that it was an unlisted number which again
5 concerned me quite a bit that that would happen, so I made a point of
6 sticking around he was scheduled to come on at 7:00 that evening so I
7 stuck around until I had a chance to talk with him that night both he
8 and Gary Reed. Gary Reed who had done the chemistry on that sample had
9 shown significant iodine levels on a whole body count which was subse-
10 quently determined to be primarily in the back of his head and the
11 hairline contamination, so I stuck around...

12
13 DONALDSON: That would be at about the thyroid level?

14
15 DUBIEL: It would...slightly above the thyroid level.

16
17 DONALDSON: Do you know how RMC or your...or whoever did this whole body
18 count determines that in fact it's...it is surface contamination?

19
20 DUBIEL: No I do not.

21
22 DONALDSON: Did you check to verify or make sure that that was the case?
23
24
25

1 DUBIEL: I did not follow it through personally to RMC. I followed
2 through the internal channels and talked to some of the HP people that
3 had been familiar with the situation and I was given indication that
4 they determine it to be on the back of his hair through both frisking
5 and I'm not positive although for some reason it sticks in my mind that
6 they clipped some hair off and found the hair to be...you know...quite
7 hot.

8
9 DONALDSON: Has he spoke with both Gary Reed and...

10
11 DUBIEL: That's correct.

12
13 DONALDSON: ...and Houser that...

14
15 DUBIEL: I spoke with them and again when I approached them my main
16 concern at that time was to try to...to find out exactly how concerned
17 they were and to try to put their minds at ease as much as I possibly
18 could especially in...I've had some considerably experience with thyroid
19 doses and based on my experiences in nuclear medicine laboratory in a
20 hospital. I tried to put it in prospective of establishing millirem, or
21 millirad exposures to the thyroid and based on their...the levels that
22 they had seen and also talked to Ed specifically about his external
23 exposure about 3 rem and at that time I...I...I don't know whether my
24 talk with them was that effective or whether they had already started to
25

1 calm down and I spoke with them for probably on the order of an hour and
2 a half and when I left I felt that... and I tried to make sure that they
3 weren't holding anything back and I felt that they were again or at that
4 time not showing any grave concern.

5
6 DONALDSON: At any time did they...did Mr. Houser or anyone else request
7 an evaluation by a medical consultant or doctor?

8
9 DUBIEL: To my knowledge, No.

10
11 DONALDSON: How did you control Mr. Houser's future exposure?

12
13 DUBIEL: Okay,...

14
15 DONALDSON: I believe this occurred just on the switch over of a quarter
16 of course?

17
18 DUBIEL: Well it occurred a couple of days before but at that time the
19 overexposure occurred on the 29th so we had a couple of days and we did
20 have a significant problem of coordinating samples getting samples over
21 to the right Ge(Li) detector, multichannel analyzer system so Ed was
22 essentially put in charge of sample coordinating over at the observation
23 center.

1 DONALDSON: At what point in time or...have you yet computed the skin
2 dose to the individuals who were contaminated or extremity doses. Have
3 you gone back and considered the evolution indications are the individuals
4 did handle the sample with their hands and did not use remote handling
5 tools? Have you tried to reconstruct or fit any extremity exposures?
6

7 DUBIEL: That to my knowledge has not been done.
8

9 DONALDSON: To your knowledge are there...are...at this point in time
10 were there anyother medical symptoms from either of the individuals?
11

12 DUBIEL: No.
13

14 DONALDSON: This is somewhat of a conclusion on your part now, in looking
15 at again the emergency organization I'd like you to...to just think of
16 the way you were constituted and do you feel that the...the control and
17 the followup of these kinds of activities could be better handled if a
18 subgroup within the emergency organization were designated with the
19 responsibility for lets...lets call them routine health physics type
20 functions for lack of a better word?
21

22 DUBIEL: Again you're asking for opinions and I'll be free glad to give
23 those to you. I...in retrospect I think that...I may have already
24
25

1 mentioned that first of all I think that the emergency planning organi-
2 zation...the organization as defined the emergency plans is a well
3 established organization for the first 6, 8 maybe 12 hours. I think
4 there is a need to have a...a post accident if you will...organization
5 defined prior to an event and I think that one of those areas that has
6 got to be established following an accident is the if you will dose
7 assessment group for individuals. The additionally...in thinking back
8 on the chain of events of the first couple of days I felt that if I...if
9 there's one single point that I...where I needed or type of individual
10 that I needed to have with me in the control room to better handle the
11 health physics in the plant it would've been to have one of my foreman,
12 Joe Deman or Pete Velez available inside the control room, I think that
13 some of the point...or questions that you've asked relative to dose
14 rates being documented, logs being maintained things of that nature
15 which I feel we were very very weak on and it was weak because there was
16 just no time to do that type of thing effectively with the number of...the
17 number of personnel...qualified personnel that were available in the
18 control room, okay, I think if I...it took me several days and which day
19 I finally won the battle I don't know but it took me a couple of days to
20 get the point across to the people offsite that were so concerned about
21 the offsite doses that the HP foreman were desperately needed in the
22 plant and I know that the people off...that were handling the offsite
23 doses from the observation center felt that those same foreman were
24 desperately needed over at the observation center and coordinating
25 efforts over there and I think it was a...it was that type of a situation

1 that...that could be alleviated if we could in fact...did in fact have
2 an emergency organization that was defined and would be in place even 24
3 hours after the event would be acceptable. Some period of time after
4 that initial organization has responded to the emergency and the emergency
5 for practical purposes is in some type of a semi-controlled state, we've
6 got a little bit more time to react in...it was... it was a rude awakening
7 I guess when we were about 12 hours into it and we couldn't secure from
8 the drill, you know, and it was...you know what I mean it's...it's...at
9 that point in time you feel like you're going to be there till June, I
10 really did, I felt like I'd never get out of that control room and I
11 didn't have the people to do...or the types of people with the qualifi-
12 cations necessary an HP foreman level person to do the things that I
13 think could be such a benefit right now to...you know...the questions
14 you're asking.

15
16 DONALDSON: Let me ask you another question now. Your plan procedures
17 make provisions for north and south washdown areas which are to be used
18 for decontamination not only for vehicles but for personnel I assume as
19 far as coming offsite your bound to be contaminated. What logic place
20 caused you to use the 500KV switchyard as apposed to your designated and
21 planned north and south washdown areas?

22
23 DUBIEL: Well first of all I don't think we were into a situation where
24 we had significant amounts of vehicle contamination also we still had
25

1 the capability of decontaminating personnel inside and I don't think the
2 number of personnel that were contaminated required us to go to anything
3 more than the 8 or 10 showers that we have available in the service
4 building.

5
6 DONALDSON: There are showers available in the service building?

7
8 DUBIEL: Yes there are...

9
10 DONALDSON: What about the individuals who were evacuated from the site
11 and surveyed at the 500KV sub?

12
13 DUBIEL: Okay, essentially it is my understanding that the...those
14 personnel showed very little contamination as a matter of fact what I
15 mean by very little is I believe they did find occasionally a shoe
16 especially a nice crepe soled shoe that might show some signs of contam-
17 ination but I don't... I'm not aware of any personnel contamination
18 being determined at the 500KV sub other than...

19
20 DONALDSON: You didn't know that before hand though, correct?

21
22 DUBIEL: That's...that's correct. I also did not feel that we would
23 have that type of contamination problem I honestly believe that that
24 time that our major problem was a gaseous release and that also I was
25

1 not completely ignoring the fact that there might be iodines being
2 released I felt that the levels...the indications that we've gotten
3 offsite and onsite indicated a gaseous problem I was more concerned with
4 the typical type of problems you can run into with the inert gases
5 adhering to polyesters and double knits and things of that nature.
6

7 DONALDSON: . Okay Dick, I've just got a couple more questions and then I
8 believe we've got another interview waiting. Let me try to get what I
9 can here. And again I...a simple yes or no on this is sufficient if you
10 have yes then of course we'll get some more. At anytime on the period
11 of the 28th through the 30th were you aware that either your location
12 that you either heard or made any recommendations to the State regarding
13 the need to implement protective actions in offsite areas?
14

15 DUBIEL: No, I was not aware that I also can state that we to my knowledge
16 did not make any recommendations of that nature.
17

18 DONALDSON: Okay, one final question regarding the training program. I
19 realize that the responsibility for training, emergency organization are
20 spread in the number of areas. To your knowledge is the emergency plan
21 training program, that is the program that is presented to the individuals,
22 documented in the form of schedules and lessons plans?
23
24
25

1 DUBIEL: It is I also know that there were some some of the paper work
2 documentation was shall we say slow in getting there. I personally did
3 not have a concern in that the...in fact the training had been done
4 since I in fact was a part of that training. Being trained myself in
5 several of the drills but it was a matter of paper work being...you
6 know...assembled and you know, following up on putting together ah
7 documentation that I knew had been somewhat delinquent and I'm also
8 aware at least a couple of items that are still delinquent.

9
10 DONALDSON: Had you ever been approached either formally or informally
11 by anyone claiming or stating that the...the adequacy of the training
12 that they received was in question. Did they feel uncomfortable with
13 that training?

14
15 DUBIEL: I've been approached on several...at several times by our
16 technicians...

17
18 DONALDSON: Could you give some specific names?

19
20 DUBIEL: The one that I remember most vividly I guess was Ron Evans also
21 Ken Burkeholder. This was...what...what I'm really referring to is
22 incidents that occurred during our emergency drills where they would in
23 fact be assigned to offsite teams and indicate to us that they did not
24 know exactly what they were supposed to be doing and maybe I ought to
25

1 clarify that I think that the biggest single point of contention was the
2 operation of the SAM II equipment. In fact though that we were able to
3 go back and show that the individuals had been instructed and on at
4 least one occasion I know a group of individuals were reinstructed. I
5 think that the...that there's a definite need for more than annual
6 training on a piece of equipment such as a SAM II.

7
8 DONALDSON: Does the current training program allow hands on operation
9 by each individual going through the training?

10
11 DUBIEL: Well your...your choice of the word 'allow' it does not 'disallow'.
12

13 DONALDSON: Let me put it this way is it part of the normal program?
14

15 DUBIEL: By every individual I'm not exactly sure that every individual
16 would get hands on. I do feel that every group and a group could be
17 more... no more than 3 or 4 individuals would in fact operate the equip-
18 ment, now one person might in fact push the bottons while the others sat
19 and looked over that individuals shoulder.
20

21 DONALDSON: Is there any test or evaluation of t' individual's proficiency
22 before he leaves the training situation?
23
24
25

1 DUBIEL: There's an evaluation in that particular area I do not know for
2 a fact that there's an actual test.
3

4 DONALDSON: Okay, I guess that for the present time finishes the questions
5 that I have. I believe Mr. Yuhas sometime in the future would like to
6 get a hold of you and he as a couple of questions he'd like to ask and
7 if anything comes up I'll...I'll try to pick them up at that time. I
8 think what 5 hours 6 hours you've given us, we appreciate it.
9

10 DUBIEL: Right. Thank you very much.
11

12 INVESTIGATOR: Thank you Mr. Dubiel. The time now is 6:15 p.m. and this
13 concludes the interview with Mr. Dubiel.
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