UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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In the matter of:

METROPOLITAN EDISON COMPANY

(Three Mile Island, Unit 2)

- -x

Fifth Floor Hearing Room,
4350 East-West Towers,
Bethesda, Maryland.

Tuesday, January 13, 1981.

INTERVIEW OF DONALD R. NEELY was commenced at 8:25 a.m., pursuant to agreement.

APPEARANCES:

NORMAN MOSELEY, Office of Inspection & Enforcement, Nuclear Regulatory Commission.

JOHN CRAIG, Office of Inspection & Enforcement, Nuclear Regulatory Commission.

VICTOR STELLO, Director, Office of Inspection & Enforcement, Nuclear Regulatory Commission.

ROGER FORTUNA, Esq., Office of Inspection & Audit, Nuclear Regulatory Commission.

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P R O C E E D I N G S

(8:25 a.m.)

Whereupon,

DONALD R. NEELY

was called as a witness by the Nuclear Regulatory Commission Staff in the above-entitled matter and, having been first duly sworn, was examined and testified as follows:

EXAMINATION

BY MR. CRAIG:

Q Would you state your full name for the record?

A Donald R. Neely.

BY MR. MOSELEY:

Q Don, we've asked you to come this morning to ask some questions in continuation of our investigation into the exchange of information on Three Mile Island on the day of the accident.

We have, as you recall, interviewed you one time before, and we will try to minimize the overlap between this and that interview. But we do have some additional questions for you.

First, what I would like to start with is the early morning of March 28th when you were still in the Regional Office. Would you tell us how you first learned about the accident at Three Mile Island?

A Okay. As I stated before, I was in Mr. Crocker's

office briefing discussing our plans for a trip to Oyster Creek. He was the Acting Section Chief at that time for the Radiation Support Section. Mr. Smith came into the office and instructed Mr. Crocker to put together an emergency response team to go to Three Mile Island.

Q Who else --

A That's the first time I became aware of it.

Q Okay. This was about what time?

A It was right around 8:00 o'clock.

Q Okay, who else was in the --

A 8:00 or 8:15, somewhere in there.

Q Okay, was anyone in the office besides you and Bud Crocker?

A No, I don't think so.

Q What all did Crocker tell you? Did he give you any information about the accident? Or did he just say that you were to go there?

A No, he just told me to put together a team, a response team. He didn't have any information either.

Q Okay. And after he told you this, what did you do?

A I then started selecting people to be on the team, and started making travel arrangements, getting the emergency equipment together.

Q Okay, and you then selected the other HP members of the team?

A Yes.

Q And those people were?

A Mr. Plumlee and Mr. Nimitz.

Q And you contacted each of them and told them they had been selected? Or did someone else?

A I'm not sure whether I contacted them, or George or Crocker did. It came out that I selected Plumlee because he used to be a TMI inspector; and Nimitz, to utilize him as -- they recognized that he was junior -- to use him for analysis, sample counting, taking surveys, and things like that.

Q After your discussion with Crocker, who did you talk with?

A I can't remember -- It was -- We had about 30 minutes there, and it was just -- I talked to Donaldson about getting the emergency kits out of the emergency storage room. I went into George Smith's office; there was a conference call going on there.

I was in there for some short time. There were conversations out in the -- outside George's office, and it could have been with Karl Plumlee, or I could have discussed it with Greg Yuhas. That's all I can remember of the people that I might have been in touch with.

Q During the period of time that you were in George Smith's office, you say the speaker telephone was in use then, communicating between the Regional Office and the site?

A Yes, there was -- And at that time, I didn't know who was on the other end. But Greg Yuhas was up near the speaker box and carrying most of the conversation.

Q Did you participate in, or listen to the conversation during the time you were there?

A Just briefly, and it had to do mainly -- if I can remember -- was the readings in the containment on the dome monitor.

Q Do you recall what that reading was?

A At that time, I think it was -- they were reporting 60 R per hour.

Q Okay. And did you meet with George Smith, or have a discussion with George Smith at any time prior to leaving the office?

A I can't remember what -- how we exchanged information. Things were very informal, and it wasn't really well thought out. We were just -- everybody -- we were just trying to get on the road, and we could have been exchanging information, like I say, outside his office.

Q Specifically --

A I can't remember.

Q Specifically do you recall an informal meeting, a standup meeting outside George's office where he was talking to the members of the team? Do you recall such a conversation?

A I don't recall it, but there could have been one.

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Q You don't recall, either way?

A I could have been involved in one, but I -- I'd say I don't know.

Q Could you summarize for us the information that you had about the accident at the time you got in the car to leave?

A Essentially, about the containment dome monitor reading is about all I can remember of the information. The information we had was very vague. From the time we left the office until the time we got to the site, we did not have any communications, and we didn't know what was transpiring in between.

Q Do you know -- You say you knew of the containment dome monitor reading. Could you tell us any other specific information you had about the accident?

A That's all.

Q Do you recall a discussion about the containment pressure or -- about containment pressure, prior to leaving?

A I don't remember any. If I did, it may have not registered to me at that time.

Q Do you recall a discussion about hydrogen prior to leaving the office? Hydrogen in the containment?

A I don't remember.

At that point, I was trying to put the team together, and I don't -- it's hard to say what there was really involved

in.

Q Do you believe that there was information available to people in the Regional Office which was not made available to you prior to leaving the office?

A Would you repeat that?

Q Do you believe there was information available to others in the Regional Office which you were not provided before you left?

A There could very well have been for the people that were in George Smith's office listening to that, the telephone.

Q Do you know of any reason why this information wasn't provided to you and the others?

A I don't know. Again, it may have been provided, but it's been so long, we can't -- you know, it's been so long ago I can't remember.

BY MR. STELLO:

Q Excuse me. I want to make sure that I understand.

Do you know of information that existed in the Region that you didn't get?

A There -- Now this is after the investigation reports, and talking with people -- there was -- you know, at this point, I don't know whether it was information that was provided afterwards, or, you know, if it was discussions with people once we got to the site, you know, so I don't really

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know whether -- what the office knew. All I know is that we had very little information going into our response to the accident.

MR. MOSELEY: Do you have that list that we were using yesterday?

BY MR. CRAIG:

Q Don, I'll read down a few things and you can indicate "yes" or "no" whether you knew about them, if you can remember, or whether or not you remember.

Were you aware that the unit had tripped from 100 percent power?

A Oh, now I was speaking to more radiological. Yes, we knew -- I knew that the plant had come off line.

Q Did you know that they believed there was a primary to secondary leak in the steam generator?

A I can't remember the exact details, but there had been a problem to cause the high radiation levels in the containment.

Q Did you know that they had a safety injection?

A I -- Possibly, but I can't really say for sure.

Q Did you know that they had lost the bubble in the pressurizer; that they believed they were solid in the pressurizer?

A I would have to say, on that one, that I knew that when I got to th ate. I remember that later in the day, for

sure; I know that.

Q Did you know that they had failed fuel?

A No, I did not.

Q Did --

A Oh, there -- Well, I can recall something now. There were some radiation level readings in the aux building that were being reported.

Q This would be before you left the Region?

A I think so; it could be.

Q Were you aware that they believed they had a bubble in the reactor vessel?

A Not at that time, I don't recall.

Q Were you aware that all the containment monitors were in alarm?

A I don't recall. I know, after the fact.

Q Were you aware that there was a one pound pressure inside containment?

A I don't think so.

Q And the last thing is: You indicated "60 R per hour," and the number that was reported at 8:00 a.m. was 200 R per hour.

Q There was a problem with the interpretation of the readings because of the shielding of the detector that may have been --

A You made this distinction before you left?

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A No, I found that out later.

Q Later?

A When we got to the site, that that number was much higher because of the four-inch lead shielding around the detector.

Q Were you aware that they declared a site emergency?

A I don't think I was at that time.

Q A general emergency?

A I can't remember which one it -- which one they had called.

Q You knew that they --

A Had had an emergency.

Q -- had had an emergency before you left.

A (Nodding in the affirmative.)

Q Okay. I have been reading from notes that were made by Rick Keimig in the Regional Office at about 8:00 o'clock in the morning.

BY MR. MOSELEY:

Q Let's talk now about the trip to the site. Do you recall what was discussed during the trip?

A I can't hardly remember. All I -- one thing I -- All I know is we were concerned because of the rate of speed we were traveling, whether the troopers had been alerted. And that's about -- discussing what kind of plan it was.

Q Was there discussion about the dome monitor reading

during the trip?

A I can't honestly remember what -- it's been so long -- what was discussed in the car.

Q Do you recall any discussions about hydrogen, or containment pressure during the trip?

A Not to my knowledge.

Q Do you recall discussions about how serious people may have thought the accident was?

A I can't remember. All I know is we -- to us in the car, we didn't really know what to expect when we got there.

Q What kind of perception did you have, yourself? What did you think? How serious did you think it was?

A At that point, probably a site problem with the containment in isolation with high radiation levels. Because I did, back at the Regional Office, ask them to locate the mobile laboratory in case we did need it for environmental sampling, and that's why they did bring it in from Millstone later that night. But at that point, with what information I knew, it was looking at a site problem, the containment itself.

Q Did you draw any inferences about damage to the core based on the dome monitor reading, at this point?

A Not at that -- not on the way up there. When I got to the Unit 2 control room, during that day I did start asking

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questions about the condition of the fuel.

Q But you had no -- drew no inferences as of the time you arrived? You had not drawn any?

A No, because at that -- you know, I didn't know. It could have been crud bursts that were the cause of the radiation.

Q Is a reading of the magnitude you say you thought it was, or your recollection was that it was 60 R per hour, is that an unusually high reading in your knowledge?

A Oh, definitely. Definitely.

Q By orders of magnitude? Give me some feeling for how unusually high it was.

A Well, it was -- definitely it was out of the ordinary. I would not -- with a reading like that, it was definitely a problem inside the primary system.

Q I'm trying to get some perception of whether you felt there were a couple, some rods perforated. Did that indicate that to you? Did it indicate a lot of rods perforated? Did it indicate a little core damage? A lot of core damage? Do you have a perception --

A I don't really think I had assessed it at that time, what was really the underlying problem causing the radiation levels. I didn't -- I don't think at that time I had really related it to fuel damage. I probably hadn't gotten myself in that frame of mind, yet.

Q Have you had the experience where a significant primary coolant system leak has occurred inside containment that you've looked into that event at a licensee?

A Not that I can -- only just from normal operation where they do have degraded fuel because it starts breaking down.

Q But what I'm looking for is some perception of what readings -- what's the highest reading you are aware of from the dome monitor, in your experience?

A Probably up to a couple hundred MR per hour, at the most.

Q And this would be from?

A The atmosphere, gas from normal operation.

Q And not associated with a large primary coolant system leak, or anything of that nature? This would just be a routine operation type of number?

A Yes, and that's high, too.

BY MR. CRAIG:

Q Don, before you left the site, what level of severity had this accident been declared by the Region before you left the Regional Office?

A I don't -- I don't recall whether it was even announced. It was happening so fast, it was just: Get the team together and hit the road. And like I say, the information flow to me, at that point that day, were minor details. The

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people in the Region had already activated the emergency response center.

Q And as I understand it, there are three severity levels of incidents in accordance with the Region I Emergency Plan?

A I can't remember what the Plan calls for.

Q How many times had the center been activated, do you know, in Region I?

A I -- To my knowledge, that was the first time that we had gone into that mode.

Q Was it the first time, to your knowledge, that the Region I had ever assembled a team and gotten them on the road within essentially minutes of being notified of an incident?

A We've had other incidents -- not reactor-related -- where we had, such as Rochester where they found the plutonium container in the wrecking yard. I was the Response Leader on that one, too. We were out within 30 minutes, essentially.

Q Within 30 minutes?

A (Nodding in the affirmative.)

Q Was this the same magnitude of response in the Region?

A No, that one was -- I would not -- it did not -- well, it did involve all the Branch Chiefs and Section Chiefs. That's about the only -- just to bring them together and say:

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Hey, we do have this container, and we've got to get a team out there; not near the response as far as the Three Mile Island.

Q And the dome monitor readings, you said that you hadn't assessed or tried to identify a cause for this high reading? Is that right?

A I can't remember whether it even entered, at that time; because I definitely did, when we got to the site, an assessment of the conditions and determined that there were -- with those kinds of readings, there had to be fuel damage.

Q And did you report that to --

A I talked to -- and later in the day it was reported, I know, through our discussions.

Q Can you give me a feel for how much later in the day?

A I can't remember whether it was in the afternoon. That's after I interviewed the -- tried to confirm it with the B&W engineers. And they did not confirm it.

BY MR. MOSELEY:

Q When you say "fuel damage," would you categorize that or a scale from --

A When I say "fuel damage," being a degradation of the fuel rods; that they've had a leaker. I call them "leakers."

Q Okay, so it would be in the realm of perforated

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cladding? Is that -- I don't want to put words in your mouth. Say whatever you think it is.

A It could be pinholes; it could be cracking; it could be just off-gassing of the rods.

Q So it was on that end of the spectrum, as opposed to severe core damage where the cladding had significantly deteriorated? Is that your perception?

A At the first -- you know, at that time I didn't know that the core had been actually uncovered, and then that essentially confirmed it.

Q Well, again, we all know differently now. I'm trying to ask you about what your thinking was on March 28th. And your thinking on March 28th was that it was -- while there was some damage, it was on the low end of the spectrum of damage?

A I would say later in the day, after gathering all the information, and with all the monitors off-scale, I would say that at that point there would have been significant damage.

Q Okay, but let's then try to put a time on this. When you first arrived, you had a lesser degree of concern for the core. As the day wore on, your concern went up? Am I characterizing it correctly?

A I think what really confirmed it is when the results of the first primary coolant sample came back.

Q When you say "the first primary coolant system sample," do you know about when that sample was taken?

A I can't remember when they --

Q Do you recall what the activity level was in that sample?

A There was -- During the day, there were several taken, but one number that I can remember was 1100 microcuries. And this was one that they tried to send -- they took to Bettis Laboratories.

Q Was that on the 28th? Or was that some subsequent day?

A I can't remember. There was a primary coolant sample, and essentially that confirmed to me that there had been fuel damage.

Q That was a sample taken early on the day of March 28th that had a gross beta/gamma reading something over 100 microcuries per ML. Were you aware of this sample?

A I can't remember, without going back to my notes. I believe I wrote it down, but I can't remember whether this was just something I read, maybe, or ...

Q If you had known this, what would this have told you?

A That definitely there was fuel damage.

Q Again, on a spectrum for me, please, if you heard that number?

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A It would be extremely high.

Q You would believe that was severe damage?

A Yes.

BY MR. STELLO:

Q Help me understand that. What is the normal gross activity per minute in the tech specs?

A Most plants run around 10^{-2} microcuries -- we're talking about iodine -- 10^{-2} microcuries.

Q No, "gross." Total.

A I think the max would be 1 to 2 microcuries.

Q That would be what they would be normally operating in, a few microcuries.

A Yes.

Q What would it be per minute operating?

A I don't have that number --

Q Would it be 10s of microcuries?

A It could be; yes, sir.

Q Are you familiar with iodine spiking following a power change?

A Yes.

Q How much of an increase do you think you might get as a result of an iodine spike?

A There would be a -- on the stack monitor, there would be a significant --

Q Well, how about in the primary coolant activity?

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A I don't understand the question.

Q Well, the iodine spiking will increase the primary coolant activity. The gross beta/gamma in the primary coolant activity should increase because of the off-gassing of the power change in the rods. How much of an increase do you think that might be?

(Pause.)

In the transient, we're talking about.

A I really wouldn't know.

Q Could it be a factor of 10 or 15?

(Pause.)

A Could you repeat that again?

Q Iodine spiking following a power change will elevate the gross beta/gamma activity in the primary coolant. The question is: Do you have any feel for how much of an increase you can get in the iodine spiking because of the power change?

A No, I don't.

Q Would you be surprised if it were on the order of a factor of 10 to 15?

A Yes.

Q You would?

A Yes.

Q That's about what they are, I think.

What I'm trying -- The reason for asking these

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questions is to understand why you used the words to describe, if it got to 100 microcuries gross beta/gamma, that that would indicate a very severe or extreme condition.

A Well, looking at the particular isotopes, the iodine concentration --

Q No, no, no. Gross beta/gamma.

A Well, I'm talking about iodine concentrations.

Q Yes. Okay.

A In the primary coolant, if I saw gross numbers of iodine, to me that would be evidence of it.

Q Well, as I recall, the sample that Norm asked you about was a gross beta/gamma, which is total activity.

A Well, I must have misunderstood him. I'm thinking "iodine concentrations."

Q Only iodine?

A Yes.

Q Well, since iodine is usually a small fraction, then the total activity would have to be considerably higher than 100. If you had 100 microcuries per cc of iodine, then the total activity in the primary coolant would obviously have to be considerably greater than that. But if the total primary coolant activity was 100 -- back to Norm's question -- on the order of 100 microcuries per cc gross beta/gamma, total, would you characterize your impression of that in terms of how severe the situation is?

A I wouldn't know. I couldn't characterize it. I would be looking at a gamma scan, and I would be seeking out the iodine, because that's what normally controls the plant when they're operating, the releases, as evidence of a fuel breakdown, the off-gas rate.

Q Okay. While I've got the floor here, the dome monitor, an indication you said of on the order of 60 R per hour wouldn't necessarily mean a severely damaged core; but an indication of perforated fuel? Is that what I heard?

A Well, 60 R per hour, it could be caused by many things. It could be --

Q Could it be caused by just primary coolant leakage itself?

A That's right. Not necessarily the core. It could be a crud burst, and it's lodged somewhere in the piping.

Q Okay, I just wanted to clarify that.

A That's why, in my way of thinking, then, I couldn't assess things until I got there to see what -- that's why I wasn't thinking fuel.

Q Okay.

BY MR. MOSELEY:

Q You said, Don, that as the day wore on, your concerns grew in terms of the magnitude of the damage, and you mentioned this sample which I think was on a day other than Wednesday.

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A It was another day?

Q Yes.

What else led you to this conclusion of growing concern for the core?

A Well, with the monitors off-scale, and the gaseous problems in the aux building.

Q Did this indicate to you a deterioration of the condition of the core? Or did you have that perception?

A I didn't know if it was a continuous deterioration, because essentially the ~~feed~~ containment should have been isolated, and this gas and water was passed over in the early hours of the accident. And that's what I was trying to determine: Is it -- you know, is the gas lifting off from the water that was spilled on the floor in the aux building in the overflows?

So really, as far as the core, later in the day when they couldn't get water to the core, then it became evident that there was a problem.

Q Were you aware on March 28th that they couldn't get water to the core?

A At that -- All I know is based on overhearing discussions in the supervisor's office, where they -- regarding steam generators and the bubbles.

Q This was in connection with voids somewhere other than around the core? Or what were they discussing?

A Voids in the generator.

Q Were they discussing voiding in the core itself?

A There -- there seemed like they were talking about a bubble being formed in the top of the vessel sometime during that day, or the next day; that they couldn't get water to the --

Q I'm sorry?

A They couldn't get water adequately to the core.

Q And this was discussions that you overheard while you were in Unit 2 on March 28th?

A On March 28th, and possibly the 29th.

Q Could you describe for us what the substance of these conversations were, or what your perception of them was?

A I don't really understand what you're --

Q Well, I'm trying to get you to tell me what the concerns were, specifically, that they were voicing; and how they were expressing these concerns. Just what you overheard, and what your perception was of what you overheard.

A All I can remember is that there was concern to get water into the vessel, to their normal -- they were trying to -- there was talk about the steam generators going dry, and -- That's all I can remember.

Q When you say "steam generators going dry," are you talking about the secondary side? Or the primary side?

A The secondary side.

Q Was this a concern for lack of forced cooling?

A Yes.

Q Was it a concern for lack of natural circulation, since they didn't have forced cooling, and we all knew that at the time?

A I can't remember what -- All I can remember, you know, since it's a long time ago, is that they were trying to get the water into the vessel. Those kinds of things I was overhearing, since I wasn't directly involved in the discussion.

Q When you say "water into the vessel," are you differentiating between the reactor vessel and the primary coolant system?

A I'm talking about into the vessel.

Q Into the reactor vessel?

A (Nodding in the affirmative.)

Q Then the discussions that you recall hearing were about refilling the vessel, as opposed to refilling the primary coolant system?

A I cannot -- Right now, I don't know which -- whether it was the cooling or -- but they were trying to get the reactor cooled down.

Q Yes, but I think you told me they were concerned about refilling the vessel, and I am trying to get a perception of whether you're talking about the reactor vessel, or you're

talking about the primary coolant system as a whole.

A And I'm trying to say that right now I can't remember. If I say something, I may be saying something I'm not sure of.

Q When did you first hear discussion of hydrogen?

A That was after the NRC became aware there was a hydrogen problem, and we went into our emergency mode.

Q What day was this?

A There was also another time -- I can't remember whether it was back at the Regional Office when they became -- people had to go down to Headquarters to testify. I can't remember the time frame, but George Smith had instructed me to go -- that I would be, on a volunteer basis, to go back to the Unit 2 control room, and that they were going to remove everybody else from the site. That's about the first time that I think I became aware that there was a hydrogen problem.

Q George Smith was then on site when this conversation took place?

A Yes.

Q Do you recall what day George arrived on site?

A I think it was on Friday.

Q Is that the same day you recall having this conversation?

A I can't remember whether it was when, or several days -- I think it was after that.

Q It was no earlier, since George wasn't there earlier?

A I think it was -- I think it was sometime after that, because of the fact I had very little exchange of information the first few days when the team got on site, because we were ~~off~~ on shift in the reactor building, and we were working long hours, and we didn't know what was really being put together on the NRC response.

Q You weren't in the "reactor building."

A Pardon?

Q You weren't in the reactor building. You said you were on shift in the reactor building.

A Well, I mean at the Unit 2 control room.

(Laughter.)

Q Okay, and when you say you had very little exchange, you mean among yourselves, among the NRC people?

A We -- At that time, we had gone into the three-shift operation, and we had team leaders made up of Section Chiefs from the different regions, and they became the interface with the George Smith level, and whoever else was ...

BY MR. STELLO:

Q Don, you said when you talked about hearing "hydrogen" for the first time, that there were two recollections. One was on site, and one was in the Region? Did I misunderstand?

A No. When we returned to the Region after fulfilling our two-week assignment, there were people being requested to go down to Washington to testify, and newspaper reporters -- we were called into Boyce Grier's office, myself and Higgins, to find out what we knew about the hydrogen spike. And that's about the first time I really, to my knowledge, knew that there had been a problem.

Q Okay. But then the first time you heard of it on-site, after you got to the site, was this conversation with George Smith on Friday, or later?

A Yes.

Q And that was the first discussion, or time you heard the word "hydrogen" mentioned?

A Yes.

MR. STELLO: Okay, I just wanted to make sure it was clear.

BY MR. MOSELEY:

Q Do you recall any samples being pulled, or analyses being made of the containment atmosphere for the constituents of the air, as opposed to radioactivity?

A On March 28th?

Q On any day.

A The only ones I can remember are later into the recovery phase of the --

Q "Later" being later than what?

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A Weeks after. What happened, after the -- I think it was on the 29th or the 30th, when we went into our three-phase operation, I then became involved in Unit 1 as the Shift Leader, and we had people that followed the rad waste. We had a Rad Waste Team, you might say. And they were directly involved with the containment sampling, transferring of gas in the coolant. And any exchange of that information usually went right to the Team Leader on that particular shift. So I can't remember, without going to the log books.

Q Do you recall any sampling of that type on March 28th?

A Not to my knowledge.

Q March 29th?

A No.

There may have been sampling going on; I can't remember.

Q Do you recall at about the time of your first knowledge of the hydrogen problems was on Friday, that at that time there were some sample analyses? Do you recall any of them talking about the results of these analyses?

A Well, now, I'm not even sure that I even knew -- was aware of it on Friday, the hydrogen problems I said before.

Q At the time you found out, whenever it was, do you recall discussions of previous analyses for hydrogen?

A I can't remember what went on.

Q Do you recall discussing hydrogen with Plumlee?

A No, I don't.

Q With Gallina?

A No, I don't.

After the accident?

Q Yes.

A We could have exchanged information; I don't remember.

BY MR. STELLO:

Q I've got a couple of things I'd like to see if I could get squared in my mind.

Some of these things I know you've talked about before. I just want to try to get, if I can, a quick synopsis.

On the afternoon at about 1:15 when we had this pressure spike that occurred, do you have any recollection of any activity in the control room at about the time of the spike? As I recall, you were there.

A Yes, I was there.

Q Do you have any recollection at about that time frame in the afternoon?

A Of an indication of a pressure spike?

Q Yes.

A No, I do not.

Q Do you have any indication that they had ECC

injection at about that time, or containment sprays going on at that time?

A No, I do not.

Q Can you recall whether there was any discussion of unusual things in the control room?

A No, I don't recall anything like that. I was -- At about that time, I was taking monitor readings on the process monitors. That's all I can recall during that period.

Q Were you aware of Gary Miller's preparation to leave to go brief the Lieutenant Governor at about that time?

A No, I was not.

Q Did you have any discussions with Gary Miller?

A The only discussion that I had with Gary Miller were when we first got into the Unit 2 control room, that he briefed myself and Higgins on the conditions.

Q What did he tell you?

A I can't remember. He was -- he was talking -- that's where I think I got about the status of the generators, and things like this, and the upgrading of the monitor readings. I think that's -- the containment monitor -- and instructed us, DuBiel, to bring us up-to-date on what was happening.

Q Can you recall any discussion of hot leg temperatures being off-scale, high?

A No, I don't. And mainly because we were set up that Higgins was going to look at the operations end, and I

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was to look at health physics.

Q Did you sit in on the so-called "think tank" discussions?

A I stood in there on a couple of occasions.

Q You never heard mention of hot leg temperatures, or --

A I may have at that time; it didn't register to me. I didn't question it because of Mr. Higgins standing there.

Q Did you have any knowledge at all that the EMOV was open for a long time?

A I didn't know at the time that that was opened. I learned of that later.

Q You didn't know about that on the 28th?

A No.

Q Was there any discussion about the HPSI flow being throttled? How much flow was going in with HPSI, and discussions of what was needed, letdown flow? Do you recall any discussion on that issue?

A I can't recall it.

Q How about the in-core thermocouples? Can you recall any discussion of in-core thermocouples, or people requesting a printout from the computer of the in-core thermocouples? Anything related to the in-core thermocouples during the day?

A I don't recall.

Q Have you ever heard the words "feed and bleed" used throughout the day?

A No, I didn't.

Q During the day, did anyone from Met Ed ever come over to try to give you an assessment for the seriousness of the accident?

A Did anybody from Met Ed come to me?

Q Yes, and kind of say: Here's what I think we have, in terms of the accident.

A Only my initial discussion with Miller, when we first got to the control room. He briefed us.

Q Did he tell you about how serious he thought it was?

A I don't recall him using those kinds of words. It was more like: Here's the condition of the plant; and here's what we're trying to do. And I can't recall what those words were. He briefed us, you know.

Q Was there any recollection in that briefing of an attempt to make you understand his synthesis of the accident, or his understanding of the seriousness, or lack thereof?

A My own personal opinion, I don't think at that point they really realized how serious the accident was.

Q But was an assessment provided to you?

A No, not that I recall.

Q Either way?

A Nope.

Q Let me ask, then, since you've raised the question of a judgment you made: Your judgment is that you didn't think they really knew how serious it was?

A I'm saying this because of the question I asked about the fuel damage to the B&W personnel later in the day.

Q Did you have any feeling at all for whether or not they knew they were adequately cooling the core? Did they know they were, or weren't?

A Later, it was sometime in the day that they came out when they were -- they became aware that they were having problems trying to cool the core.

Q They knew they were having problems?

A Later. Sometime that day. That's when the B&W people in there were trying -- they were in the think tank trying to figure out how to get water.

Q Would you say there was a question as to whether the core was adequately being cooled at that time?

A I don't know that they knew -- I don't know if they knew whether the core was uncovered or not at that time.

Q Not "uncovered." Adequately being cooled, adequately?

A I -- I can't recall. I just remember they were just trying to get water in the generators for cooling purposes.

Q Was it your feeling that the status of things was such that you couldn't be sure whether things might get worse in the next couple of hours?

A I didn't have that feeling, myself.

Q No. Based on the discussion you're hearing, "problems with core cooling" I think were your words -- was the discussion such that there were questions as to whether or not things might get worse?

A I don't think that came out in the discussions.

Q No. I'm asking for a judgment, based on what you heard.

A On my own judgment?

Q Based on what you heard, can you tell me what you think the general attitude was on behalf of the Met Ed people?

A I think I would be guessing, the way I was reading things, that they were not that concerned at that time. They were just working on trying to get the cooling in, taking it one step at the time. I didn't see anybody essentially in panic over it.

Q Of all of the things that you can't recall whether whether you knew or you didn't know, can you make an assessment: If someone had told you some of these things, if you think they may have had an impact on you? Let me try to get them one at a time.

Early in the morning, they had the in-core

thermocouple measurements. Had you known that the in-core thermocouples, that there were five readings, some of which were low, and some of which were in excess of 2000 degrees? Would that have had an impact on you? And if so, what impact?

A I think if somebody had -- I mean, now, looking back -- if somebody --

Q No, I'm trying to ask you to make the judgment on the basis of you being there.

A Yes. High temperatures in the core, it would be an indication.

Q What impact would it have had on your judgment?

A Well, at that point, I would have -- if Higgins hadn't known about it, I would have turned that information over to him.

Q But would it have heightened your concern?

A I'm not sure of what I would have ...

Q Okay. Had you known that the EMOV had been open for like 2-1/2 hours, would that have had an impact?

A I don't -- I don't know.

Q If you had known that there were periods of time where the HPI flow was throttled back to very low flow rates, would that have heightened your concern?

A That, combined with lack of water getting in, yes, I would.

Q If you were aware that they had this pressure spike

in the afternoon, and that the containment sprays had gone on, and they had the ECCS signal, and that the pressure went up to 28 psi, would that have heightened your concern?

A Again, on that particular issue, as I have explained before, if I had seen a graph and a chart with the line going off scale, I would raise a question, like a pressure spike. But not knowing -- I don't know how I would react to it at the time, myself.

Q Can you make a judgment on how you would have reacted had you had all of these facts, in terms of the impact it might have had on your judgment?

A Knowing all of this, and with an adequate background, I would have probably been very concerned.

Q Okay. To help me understand further a little bit, you feel that anything you asked for you got, essentially? If you asked for a piece of information, you got it?

A Yes, I think so.

Q You didn't -- Did you have a feeling that anyone had intentionally been withholding information from you?

A No. But my -- my requests for information were directly to Dick DuBiel, who was the Rad Protection Supervisor. Most of my dealings were with him, and that was my information flow.

Q Do you feel that Met Ed's appraisal of the accident was -- had, as best as you could determine from

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where you sat, the seriousness associated with it that it should have? I think you went to the Governor's Office, the Lieutenant Governor's Office -- No, that was Higgins and -- No, that's right.

You weren't there, but without -- I might be changing the thrust of the question a little bit, but let me ask it, at least in principle: As best you can understand, the seriousness of the accident that was being portrayed, in your judgment was the seriousness of the accident at an appropriate level?

A "Appropriate level" being their way of thinking? Or reporting to somebody? Or the significance?

Q Yes. The relative seriousness of the accident, was that word, or message, or understanding being conveyed to the NRC, to the State, to whomever it needed to be conveyed to, to the best of your ability to answer that from where you sat?

A Well, all I can speak to is the on-site response part of it. I don't think that Met Ed really understood how serious a problem they had, because they did not appreciate the releases as they were reflected back to core damage. And that would be a lack of experience, probably, on their part.

Q Let me see if I understand the answer. The answer is that they didn't portray the seriousness as much as it should have been conveyed. And your reasoning for that is

because of a lack of experience?

A Yes.

Q Okay. A couple of details I want to make sure that if you had any information on them, you could help me with it. Somewhere in the morning and early afternoon there was a concern starting to be raised as to whether or not they might pump all of the water from the boreated water storage tank into the containment, and then it would have to start to recirculate water from the sump of the containment building. Do you recall any such discussion or concern?

A No, I don't.

Q You don't recall hearing it at all?

A (Nodding in the negative.)

Many of the -- There were meetings held also outside the supervisor's office, and it got to the point where you couldn't get close enough to hear what was going on because there were so many people involved.

Q Were you aware of attempts to try to draw bubbles in the pressurizer? Any of the operational information? Did you become involved in that at all?

A Only from the, what you might say, an observer, listening to discussions.

Q Can you recount for me any instances of observing it?

A Observing the --

Q Either the attempts at performing some of these actions, or the discussions that were related to them.

A It would only be -- I didn't specifically watch anybody turn any controls, or -- it was just from my attendance in the think tank, or -- is where I got the -- any information.

Q Did you hear any discussions at all of a concern over starting electrical equipment inside the containment?

A There -- My notes, I have documented -- and I'm not sure if that note belongs with that particular day -- but it's something about not starting the electrical recombiners.

Q The hydrogen recombiners, you mean?

A Yes.

Q The hydrogen recombiner issue, as I recall, came up on Friday.

A It's in my notes --

Q I'm talking about starting electrical equipment inside the containment.

A No.

Q No recollection?

A I have something documented in my notes, but I can't really put that in that particular page of the notes for that day because they were out of sequence. I'm not sure if it's something I learned a couple of days later, or --

Q What do you have in your notes that --

A There is just a statement in there, something about --

Q Does anyone have a copy of them? Or can you recall them?

(Pause.)

MR. STELLO: I think maybe if he had a chance to refer to them --

THE WITNESS: It was on the notes I passed out to Norm.

MR. MOSELEY: We have it downstairs. I'm not sure if we have it here, now.

(Handing notes to witness.)

MR. FORTUNA: Is this it, Don? Or this?

(Pause.)

MR. FORTUNA: Ah, this is it, I bet you.

(Handing notes to witness.)

MR. MOSELEY: Off the record.

(Discussion off the record.)

MR. STELLO: On the record. Let's take about a 10-minute break and see if we can find the notes to help Mr. Neely refresh his recollection, and then we can discuss this further.

(Recess.)

MR. STELLO: Back on the record.

BY MR. STELLO:

Q Don, you have had a chance to look at all of the notes that we've been able to find that you've provided us.

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Have you found any notes relative to the statement you were referring to?

A No, I haven't.

Q To your best recollection, what was the essence of the statement?

A I recall there was just a short phrase about "not starting electrical equipment in the containment."

Q In your notes?

A Yes. And I'm not sure whether it was under the 28th, or ...

Q You don't know when --

A It was part of that whole package that OIA picked up.

Q And you think OIA has the package with that note -- with the notes in it, then?

A Yes.

MR. STELLO: Mr. Fortuna, have you provided him with everything that was in that package that you received?

MR. FORTUNA: No, sir. Let me explain for the record, so that we're a bit more tidy.

As you know, but I'll repeat for the record, we in OIA had a job to do that was a spinoff to the inquiry that you are presently conducting. At that point, we went up to Region I's offices in King of Prussia, Pennsylvania, and interviewed Mr. Neely, along with several other people.

In that initial interview, Mr. Neely provided to the Office of Inspector and Auditor a significant number of documents. We limited what we sent to your office to what we had felt then, with our initial conversations with Mr. Neely, were the relevant portions, which was somewhere in the area of 25 to 30 pages which appeared to be, as best Mr. Neely and we could reconstruct, the notes that were for the 28th, and a couple of days following that.

There were some other pieces of paper that were loose in a separate box which we have Xeroxed and retained, and the originals we sent back to the Region, which may contain the reference that Mr. Neely is referring to.

MR. STELLO: Where are those notes?

MR. FORTUNA: Those notes are presently in the Office of Inspector and Auditor -- photocopies.

MR. STELLO: Is it possible that you could have someone bring those notes here, and we will just hold this record open until we get them?

MR. FORTUNA: Yes, sir.

MR. STELLO: I think it's an issue I'd rather not leave the record ambiguous on. Would you please call and, if necessary, have a courier bring them over?

MR. FORTUNA: Yes, sir.

MR. STELLO: We will recess the record until we get the notes, and go through it.

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(Recess.)

MR. STELLO: Let's get back on the record.

We have attempted to have someone find the records that have been referred to earlier, and hopefully are in the process of bringing them here and will be here shortly.

In the meantime, we want to ask some other questions in some other areas.

John, why don't you begin and go through those, and I'll get back to these.

BY MR. CRAIG:

Q Don, you discussed earlier information that may have been reported to the State concerning the seriousness of the accident. That was discussed earlier.

Did you ever hear any reports of information that was reported to the State by Metropolitan Edison on the 28th, the day of the accident?

A I don't have any information I can -- The only thing I can -- if it was information going to the State, it would have come out of probably the Unit 1 control room, and I wasn't in the Unit 1 control room.

Q So you don't have any personal knowledge of reports that Met Ed may have made to the State on the day of the accident?

A No.

Q Okay. Did you believe on the day of the accident

that the core had been uncovered at any time?

A The day of the accident, not -- I'm not so sure that I knew the core was uncovered, but I just knew that there had been core damage.

Q And you didn't attribute a cause to the core damage?

A I attributed it to temperatures, and it could have been a low water level at some point where the fuel had been exposed.

Q Did you believe that the fuel was still exposed after you arrived on site?

A No, I did not, until -- unless somebody provided me that information.

Q Shortly after you got to Unit 2, about 11:30, in that time frame, there was a decision made to depressurize the primary system, and the core flood tanks were to have floated on the primary system, and eventually they could then go to decay heat removal. Do you remember that?

A No, I do not.

Q You can't picture that in your recall of that time frame?

A No. I may have overheard that discussion, but today I can't recall it.

Q When you got there, can you give us a feeling of your perception as to the stability of the primary system?

Did you believe Met Ed thought, or did you think, that the system was not rapidly changing, essentially it was stable?

A I think the way I saw the situation is that they were trying to cool down, and were trying to get water to the primary cooling to get the vessel cooled down; not severely changing conditions.

Q But in their attempt to alter the cooling mode to establish a cooldown rate, would you describe that as a methodical process? As opposed to: Hurry up! We've got to get this system into operation because something's going to happen if we don't change where we are now?

A I guess I would look at that as, they would try one thing and it didn't work; and they would refer to something else, another mode, after their discussions in the think tank.

Q How many things did they try?

A I have no idea. You know, since I wasn't involved in there all the time, in the discussions.

Q Well, then, did you feel that they were running out of alternatives to get the core cooled down?

A I don't think I'm -- without an operations background, I'm not really qualified to assess that; what things they have, what methods they have.

Q But on the day of the accident, there were only two NRC personnel in the Unit 2 control room --

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A Right.

Q -- and you had some perception of how severe they thought the accident was, from "what do we think had happened?" Or from what your perception is. And you also had to have some kind of perception as to the immediateness of the actions that were required to be taken.

A Uh-huh.

Q Did you feel, or was your perception on the day of the accident that there was an immediateness to get the core cooled down? If it didn't, then it was going to deteriorate?

A No. I don't think that came out. Just the way it was happening, they were just trying to get water back on the generators for cooling, and get rid of the bubble in the core. So that's ...

Q I believe you also discussed a fact, based on a question, that there were high core temperatures, that you could have inferred or may have inferred some core damage, an increased concern with the actual or possible damage to the core that you would have related to high in-core temperatures. Do you have any training on the core exit thermocouples?

A No, I don't.

BY MR. STELLO:

Q Excuse me. I'm not so sure I understand the thrust of the question.

MR. CRAIG: The question was --

MR. STELLO: I don't want to have a debate going one way or the other on training.

BY MR. STELLO:

Q Let me make sure that I get the thrust of your response. You didn't have any training on the in-core thermocouples, but if someone told you they had measured in excess of 2000 degrees temperature in the core, do you have enough experience in reactor safety to know that that would be a serious question?

A Yes, sir. I was responding to "extensive training in thermocouples," or core physics.

BY MR. CRAIG:

Q No. Solely with respect to the in-core thermocouples, and my question is -- that I was leading up to is: That if you were presented with a series of readings that some were high and some were low -- "high" being 1500 degrees, 2000 degrees, some were low, a couple hundred degrees, and some were in the middle, 5- 600 degrees, what could you draw from that data, based on your experience?

A Those being low numbers, due to different temperatures in the core to me would be evidence of a cooling blockage, or hot spots in the core, and that's lack of cooling.

Q And just to go back: You have had no training on the core exit thermocouples as to what they mean? Is that

right?

A Nothing more than what we get in our fundamentals of reactor training.

MR. CRAIG: I think we can --

MR. STELLO: Do you have anything else?

MR. CRAIG: No.

MR. STELLO: Then let's just -- We will recess until the notes get back, and then we will reconvene.

(Recess.)

MR. STELLO: Back on the record.

BY MR. STELLO:

Q Why don't you go through the notes, to the best of your ability, to recall what they are, and what do they say?

A These are just some notes, but there is a date on them that references an auxiliary vent sample off 3/29. So this may be information that's on the 29th.

But it does -- one statement that doesn't have a date on it does quote as "trying to set up electrical recombiner."

Q Is that the reference you had in mind about the equipment?

A I -- No, I thought there was another one where there was another statement where somebody had made a -- had stated not to start any electrical equipment.

Q Well, then, you have not found that statement?

A No. This just has to do with "electrical recombiner." That's all.

Q That's not the statement you were looking for, then?

A No.

Q So you have not found the statement you were looking for?

A No.

(Pause.)

(Mr. Harpster indicates notation to witness.)

THE WITNESS: I don't know what that means. There's no date. Do you want me to identify that?

MR. STELLO: Why don't you go through those records, to the best of your ability to go through them, and see if you can find the reference you were looking for. Let me just direct your attention to doing that, first, and then we want to come back to the other notes as we may need to. But let's see if we can get this question clarified further than we now have it.

(Pause.)

THE WITNESS: These are just assorted notes that were generated during the first few days of the accident, I would imagine. And it's hard to tell what time frame. The one -- There is a date on this piece of paper, "3/29," and then there is a statement on the same piece of paper -- I can't

make it out -- it's "H_2" and I don't know if that's "fan"; it says "4 percent," whatever that ...

BY MR. STELLO:

Q "4 percent H_2"? Would it be "4 percent hydrogen"?

A Uh-huh.

THE REPORTER: What was your answer?

THE WITNESS: That's what it says here.

MR. HARPSTER: Could that be "f-l-a-m," flammability?

THE WITNESS: I don't know.

MR. HARPSTER: That's very close to "flow" or "flammability." "Flame"?

THE WITNESS: This says the date as "3/29," so it must have been something that was on the 29th.

MR. HARPSTER: Can I see that?

(Handing document to Mr. Harpster.)

(Pause.)

MR. STELLO: Well, why don't you continue to look for the first reference, and we can come back to this. We'll look at these notes while you go through looking at the others.

THE WITNESS: All I can say is, since the writing is in red, this must have tied with that. It's the same type of pen. And this says, "trying to set up the electrical recombiners."

BY MR. STELLO:

Q Is there a date on that?

A Huh-uh.

BY MR. CRAIG:

Q Don, when were you on shift on the 29th?

A I don't -- See, I could have got that from the Unit 1 control room, because after the -- on the 29th, I spent the rest of my time over in Unit 1.

Q On the 29th, when were you on site?

A During the day.

Q During the day on the 29th. And you went -- you left the site approximately when on the 29th?

A I can't remember that. I think it was the same time frame we had the problem with the IWTS, on the 29th, on discharge, because I was over in Unit 1 on that issue.

MR. HARPSTER: The 29th or the 30th.

THE WITNESS: Okay.

MR. HARPSTER: No, that's the 30th or the 31st, Friday or Saturday.

(Pause.)

BY MR. CRAIG:

Q Referring to a small green booklet, bound, of your notes that you apparently made as you left the Regional Office, because you have an entry on the first page, "left King of Prussia," can you tell me when you filled in the very first page on this book?

A Leaving the site -- the office.

Q Leaving the office?

A (Nodding in the affirmative.)

Q And the entry on there is "general emergency, 3/38/79, Three Mile Island 2, Harrisburg." So when you left the Regional Office, you were aware there was a general emergency?

A Based on that document, yes.

Q Okay.

A And I don't know if that's our classification, or if that was theirs.

Q Well, on the back of that page you have, "emergency categories: local, site, and general" as part of the discussion. Did you make this entry also before you left the Regional Office?

A I don't know. What does that say?

(Showing document to witness.)

Oh, that's in the car. Those -- I was talking about discussing the plan type.

Q So in the car you knew that the plan had three types of emergencies, "local, site, and general"?

A I guess that's right.

BY MR. FORTUNA:

Q Did you have the FSAR in the car on the way out?

A No.

(Pause.)

MR. STELLO: Have you -- Why don't you let him go through his notes to look for the reference that he was trying to find, before we get to trying to discuss this issue. Let's take it one at a time.

(Pause.)

(Discussion off the record.)

MR. MOSELEY: Okay, let's go back on the record.

In the interim while you were searching through your records, Vic Stello had to leave, and perhaps he will be back later.

BY MR. MOSELEY:

Q What's the result of your search? Have you completed searching these accumulated records?

A Yes, I've gone through all these and can't find what I was looking for. This may be -- I may have confused this with one of my previous testimonies where a similar question was asked.

Q And which specific testimony do you believe that was?

A That was the one in your office on -- in Mr. Moseley's office.

Q During this same investigation --

A Yes.

Q -- it was the earlier interview we had with you --

A Yes.

Q -- in this same investigation.

A I've only had two with you, and that was the first one.

Q Okay, now, that's your best recollection of where this faint memory comes from?

A Yes.

Q In looking through these records, have you identified, or have you concluded that there are pieces missing? Or do you conclude this is the sum total of the records that you had?

A I -- I couldn't state whether this is the entire record, or pieces, or --

Q Were you able to identify the things that were missing? By that, I mean, looking for a group of pages, or something, that you expected to find there and didn't find them there?

A I was just -- There was pieces of paper that had no page numbers, or they were just notes that I could never really tie them to any particular point in time, and that's what I was searching for.

Q So to try to summarize that: To the best of your knowledge and belief, now, you believe that the recollection of there having been an order not to operate equipment inside containment was precipitated by questioning that we directed toward you in our earlier interview?

A It's very possible.

Q Is that your best recollection --

A Yes.

Q -- or is that one of the possible answers?

A Yes, that's my best recollection.

Q Okay. Now you've also turned up a page here, one single page of notes that are on a tablet paper, written apparently in red felt tip pen. And there is a notation here about "H_2" and a word that I can't decipher, "4 percent."

Let me pass that back and ask you to give me your best judgment as to (1) what this entry means; and (2) when you think it was generated.

(Handing document to witness.)

A This particular document, the only thing I can tie this document to would be the date "3/29" and "10:00 o'clock a.m." where it references the auxiliary vent sample off.

This piece of paper covers information for Unit 1 as well as Unit 2. And this information could be made up of input from the other inspectors, as well as my own questioning.

Q All right. What do you think the notation, the specific notation that I've called your attention to, says?

(Pause.)

A It's definitely "hydrogen 4 percent," but I don't know what the word there represents.

Q Have you been aware of the flammability limit for

hydrogen sort as part of your base of knowledge for a long time?

A Yes.

Q Is it possible that that notation is a notation that this was the flammability of hydrogen? Would you have written a note to yourself reminding yourself of what the flammability of hydrogen was?

A It could very possibly be. I don't -- I don't know.

(Pause.)

Q What else could it have been?

A It just could have been some input from somebody giving a piece of information, or another inspector providing information; I don't know.

Q The reference to "auxiliary sample off" at, what is it, 10:00 a.m. 3/29?

A 3/29.

Q Could this be a note that was made on a day other than the 29th -- that is, later than the 29th -- where you were reporting that a sample that you were interested in, that was the time period that it covered?

A I don't know. I think normally when I start a new day, I start something on a new page in my notes, just as usually as a practice. And this was probably on that particular day.

Q You believe that that note was made on the 29th

based on the entry that we were just referring to, the "sample off" activity?

A Yes, I do. Only because of the same type of pen used, and ...

Q When I was asking you about the note having reference to a day -- being written later than the 29th, making reference back to the 29th, was that sometime one is interested, when he gets a sample result, he's interested: Well, what time period did this represent? And it's possible an entry might be made saying, okay, this is a sample result, but this represented conditions back on 3/29 at 10:00 a.m. I'm not suggesting that; I'm just asking is that a possibility?

A This probably was that they had removed the sample at that particular time on that date for analysis.

Q What would that -- Is there anything there to indicate to you what the analysis would be for?

A For a particulate and iodine analysis of the vent monitor collection to determine the amount of material being released over a specified time.

Q The entry doesn't make reference as to what the -- whether it was a radiation or radioactivity sample, or whether it was a constituent -- for instance, hydrogen, oxygen, and so on -- sample. But it's your belief that it was a radioactivity sample?

A That "aux vent sample" is a radioactivity sample.

Q A radioactivity sample?

A Yes, sir.

"Auxiliary vent" being "auxiliary building."

Q And again, you would have expected that the analyses that would be done on the sample would be done reasonably promptly, so that it wouldn't be necessary to refer back to a previous day's sample in order to keep the results straight?

What I am trying to do is to assess the validity of an assumption that might be made, that this entry was made on some other day.

A The reason that I think -- I'm sure that this is documented is because the licensee was not changing off the samples as we requested. At this point, we did -- We had gotten to the point where we wanted them to change those cartridges and filters to see what the activity was, or what kind of releases had been going on, to assess the amount of material released.

Q And how often would you have been seeking them to change them? Some number of hours? That is, every so many hours? Or would it be once a day?

A Whatever would be necessary because of buildup on the filters. On the 28th, the licensee was reluctant to change the samples because of the dose rates, radiation levels in the area of the monitors.

And we also considered that from ALARA purposes,

you know, exposure, that you could run them for some time longer. But it got to the point that we just insisted that they change them.

Q And were you insisting that they change them once a day? Or once every six hours? Or what frequency?

A I don't know what that --

Q What is the normal frequency with which these are changed?

A Sometimes they're weekly, or -- usually it's a week during normal operation, usually weekly.

Q Do you think you would have been asking for them little frequently then once a day in this time frame?

A We were asking -- Yes, there could be -- probably it could be asked for more frequently. There should -- the licensee should have records of these whenever they changed them.

MR. MOSELEY: John, you've been looking through some of the rather assorted documents there. Do you have further questions?

MR. CRAIG: I have a couple of questions.

BY MR. CRAIG:

Q Don, these notes are dated "3/28" --

(Indicating a different document to the witness.)

-- and are these your notes?

A Yes.

Q On the second page, the top entry says "140 microcuries per milliliter from a letdown sample." Where did you get that information?

A I think I got that information from --- they had -- that earlier sample they had taken in the morning, based on what I have reviewed in my notes that there was a sample taken early, in the wee hours of the morning.

Q And this would have been the one that was taken about 5:30 in the morning --

A Yes.

Q -- to the best of your recollection.

A Yes.

Q Now the entry underneath that discusses an input from B&W concerning failed fuel. Would you tell us what that says?

A That's when I asked B&W personnel -- questioned the integrity of the fuel.

Q And their response was?

A That it wasn't damaged.

Q That the fuel wasn't damaged?

A That's correct.

Q What time of the day was this? Can you give me an estimate?

A Well, if I follow through the time frame, several lines down there is a time of "11:55," so it must have been

sometime in the morning.

MR. MOSELEY: What day is this you are talking about?

MR. CRAIG: "3/28."

BY MR. CRAIG:

Q So on the day of the accident -- Was this in Unit 2, can you tell?

A Yes.

Q You were already in Unit 2?

A Yes.

Q So --

A It says, the page on the note says, "Unit 2 control room."

Q So you were at sometime after 11:00 o'clock, then --

A Yes.

Q -- in the morning, you were in the Unit 2 control room.

A Yes.

Q Do you know who the B&W people you were talking to are?

A Mr. Lee Rogers, and there -- according to the notes, there was also another person -- John Flint.

Q John Flint.

Do you know which one of them you talked to about the failed fuel?

A It was the older of the two, and I think that is Lee Rogers.

Q He is the older of the two.

(Pause.)

Can you characterize the "failed fuel" here? Was this not talking about popped fuel pins, but more about a bigger, more severe kind of fuel damage? Or --

A Well, it's hard to -- at that time, I myself, based on knowledge now, I was not even considering that type of fuel damage. I was looking for leaky fuel, some perforation.

Q So you were talking about a minor type of fuel damage?

A Yes; based on the containment dome monitor, and these numbers here of the ~~reactivity~~ radioactivity. I was looking at something more than what you'd find in an operating reactor.

Q Do you recall why the B&W personnel felt that the fuel had essentially maintained its integrity?

A At the time, I looked at it as a lack of experience on his part.

Q On the part of Mr. Rogers?

A Yes. That being, around failed fuel, his experience with failed fuel.

(Pause.)

MR. MOSELEY: John, before you leave that -- Were you going to leave that?

MR. CRAIG: You can pursue it.

BY MR. MOSELEY:

Q Let me make sure I understand. Based on your -- this is shortly after you arrived in the Unit 2 control room, as I understand it? Right?

A Yes, sir.

Q So shortly after you arrived, you had some question. Presumably you concluded in your own mind that there must have been perforations in the fuel, or --

A I'm sorry? Could you repeat that?

Q I'm saying that, based on what you knew then, shortly after you arrived in the Unit 2 control room on March 28th, there was some question in your mind. In other words, you must have felt that there probably was some failed fuel in terms of perforated fuel, or that type of level of damage. And you were seeking a confirmation of that from Mr. Rogers? Have I characterized it correctly?

A That is correct.

BY MR. CRAIG:

Q And you base your belief that there was failed fuel on what?

A March 28th.

Q Right. When you held this conversation, you felt the fuel had some degree of damage. Is that correct?

A I based it on the fact of the high sample analysis,

the amount of gas in the aux building, the radioactive gas that had been passed over to the auxiliary building during overflow in containment.

Q With respect, though, to this "sample," we're talking about the letdown sample that was taken, and this is a gross activity in the sample?

A That is -- That was one of the parameters I used in my evaluation.

BY MR. HARPSTER:

Q Did you discuss iodine ratios, things like that, with them?

A No, I did not.

BY MR. MOSELEY:

Q Just to make that clear: This is a gross beta/gamma notation. Would you check your notes to see if that is gross?

A Yes.

Q It is gross?

A Well, it says, "from all fission products."

(Pause.)

BY MR. CRAIG:

Q What was your evaluation? How did you come away from the conversation with Mr. Rogers concerning the fuel failure? Did you think he was wrong, and you were right? Did you try to explain to him that they had had more fuel damage than he implied?

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A I don't remember how the whole conversation went, but I didn't insist that it was fuel damage. I came across more that: From what I see and can gather, there is definitely fuel damage here with the radiation levels that are existing in the aux building, with the process monitors off scale.

Q And do you recall his response to that?

A No, I don't. He just -- He indicated he didn't think there was fuel failure.

(Pause.)

MR. MOSELEY: Let's don't go off the record. Let's just indicate a pause while he's doing this.

(Mr. Craig examines notes.)

MR. MOSELEY: While John continues looking at those records, let me go back to something we talked about earlier today in a summary fashion.

BY MR. MOSELEY:

Q Did you, on March 28th or subsequently, have you concluded that information was withheld from you by NRC people?

A Would you repeat that again?

Q Do you have any perception that on March 28th information was not passed on to you, or withheld, or whatever word you might want to use in describing it, from you?

A By NRC --

Q Yes.

A -- being any time during the --

Q On March 28th.

A I don't feel it was intentional, but I feel that communications of information that was passed on prior to us leaving the Regional Office could have been much better.

Q To what do you attribute the -- whatever level of communication deficiency?

A I think mainly because there's a definite operations barrier between health physics; that we were a health physics group, and we were looking at strictly health physics items, and operations people were strictly looking at health physics items -- I mean, operations items. And we never had any meeting with the operations people prior to leaving. It was strictly in George -- George Smith, as a response team, which is a health-physics' oriented group.

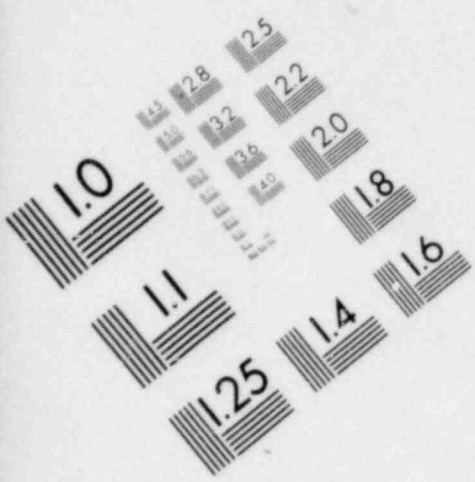
Q Is this a reflection of the way business is normally done in the Regional Office?

(Pause.)

A Prior to TMI. It's greatly improved since TMI.

Q Well, I was trying to contrast whether or not what you have described is sort of a normal routine way of doing business, versus the lack of communication on March 28th. I was trying to focus you on that. Maybe I didn't ask the question properly.

A Well, I feel that in the past there always has been



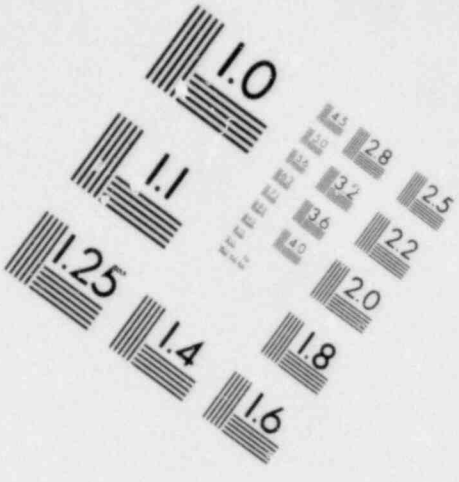
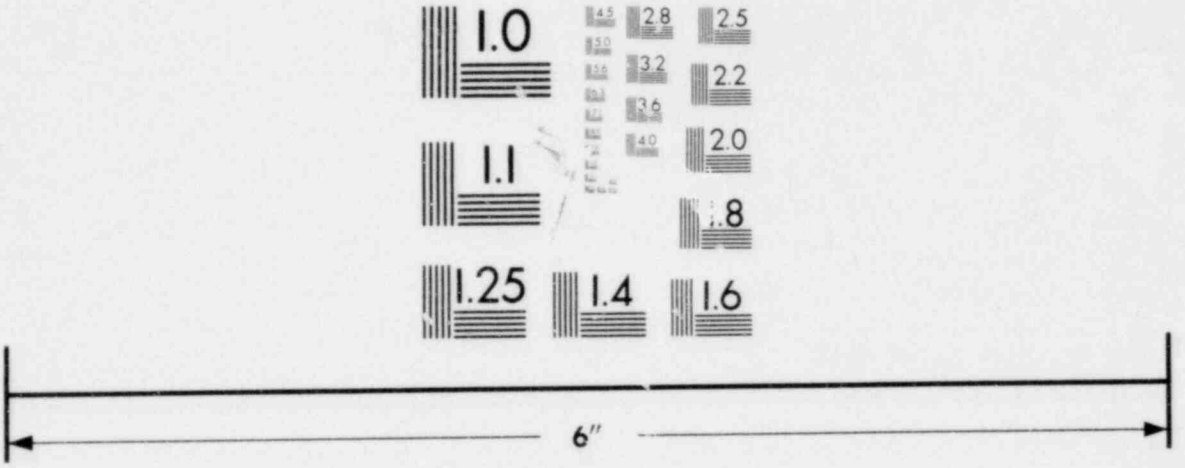
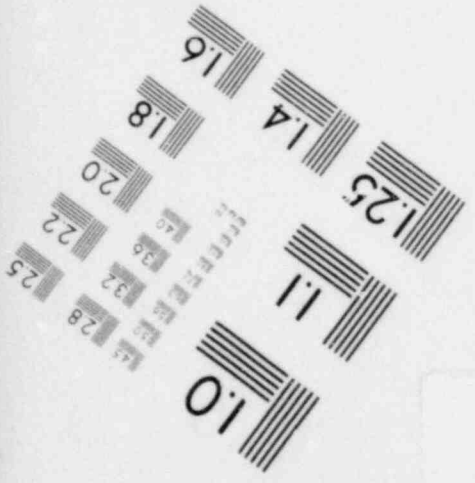
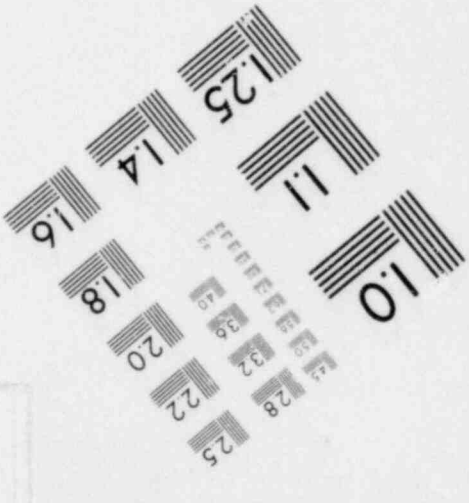
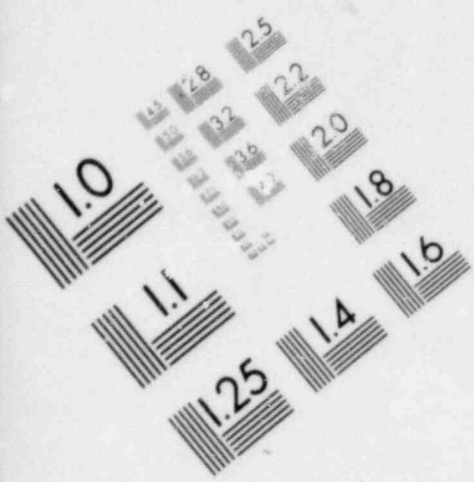


IMAGE EVALUATION TEST TARGET (MT-3)









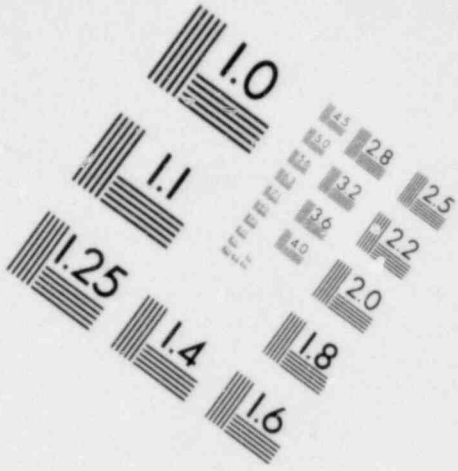
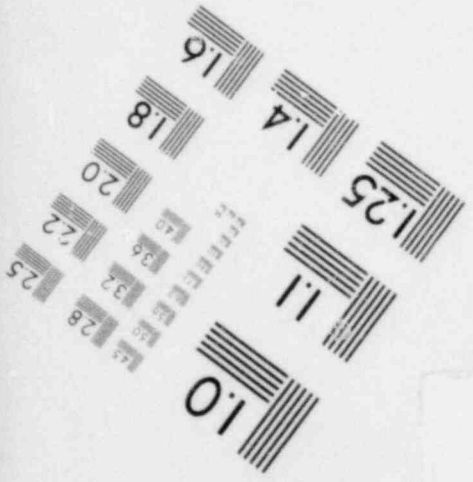


IMAGE EVALUATION TEST TARGET (MT-3)



an operations and health physics barrier in the Regional Office.

Q Would you explain "barrier" --

A "Barrier," meaning that operations always in the past has really had the lead. And if health physics personnel have an issue, operations may not want to look at it all tne time. Unless you're in very cl-se with the project inspector, the information flow hasn't been the greatest.

Q This, you're describing, is a routine day to day operation?

A Yes.

Q Now, then, your characterization of March 28th, lack of communication, is an extension of that? The same level of lack of communication? Or was it more severe? Or how would you describe it?

A I think, during the March 28th, it was definitely that the operations people, prior to leaving the Regional Office, were having their meetings and discussing with their inspectors; our ~~Field~~ Fuel Facilities Branch, we were down dealing at our level with our concerns, which were health physics. And probably the only place they were ever brought together may have been at the Branch Chief or Director level in the Regional Office.

Mr. Higgins and myself worked very closely at the site, because he's the type of person that you can deal with. And I think his information was shallow, somewhat.

Q Okay. Now would you let me characterize for you, as I understand it -- and if I'm incorrect, please change it -- Were you describing a situation where there wasn't any intention to withhold, or any knowing withholding? Rather, a failure to fully inform, which was an extension of what you've characterized as the normal way of doing business between the two groups?

A I don't feel that there was any intention to withhold any information. It was a -- I think people -- the information that had come through was spotty; nobody really understood the problem they had at Three Mile Island; and so I don't think it was intentional that information was withheld at that point. It was just that some of the data that people did not know what to do with, the data they had maybe, or who should be given that data.

And again, I don't know what was going on up in the main emergency control center. Once they established communications with the site, I'm sure that improved because operations had a phone, and health physics had a phone.

BY MR. CRAIG:

Q Don, we've interviewed the other members of the team that left the Regional Office that morning on 3/28 to respond to the accident, and I've sort of gotten the impression that there was a certain degree of confusion, a certain atmosphere of haste, and an effort to get some people in an

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automobile as quickly as possible and get them out the door to respond to the accident, and nobody ever sat down and said to them: This is what we want you to do. These are the kinds of information we have. This is the kind of information that we want. The accident appears to be this.

Is that an accurate impression of what was going on?

A That is correct.

Q I get the impression also that the Regional Office was, in some respects, caught off guard early in the morning, and that the measures taken to put the people on site had very little forethought, other than to get them on site. Is that --

A That's correct. I, myself, was the one that ordered the mobile laboratory, just as a backup, you know, to what information I had. But that is the way it was done in the past: To get the team on the road, and the information would follow. This same similar situation when we went to Buffalo on the emergency on the plutonium container found in the wrecking yard. We, once we got to Rochester, then called back and we got further instructions.

Q So, then, the normal operating practice, then, was to send the guys into something blind and hope that they had enough presence of mind to evaluate the situation when they got there, and come up to speed? Is that --

A That's correct.

BY MR. MOSELEY:

Q I hesitate to enter at this point, but I think we want to make sure -- As I understood what you said earlier, Don, it was that your experience had been that because of the distances to travel, and the need -- the desire to get someone on site or to the scene rapidly, that your experience had been that instructions had sometimes been not provided until you arrived, but that the instructions were provided?

A That's correct.

Q In this particular case, the instructions were never forthcoming. Is that correct?

A Not -- From the time, I think it was 8:30 when we left the Regional Office, we had no contact -- we did not have contact with the Regional Office. And as soon as we got in the Unit 1 control room, we established contact with the Regional Office for further instructions, and to report what we could find out on the status of the plant and conditions. And we got some instructions at that point -- not from a supervisory level, but discussions were held on who was going to go to what control room, and things like this.

And that's -- I'm only talking from a health physics standpoint, not for the operations team.

There was confusion about who headed up the whole team. There was, you know, I think both Jim and I -- I just

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assumed that he was taking the health physics -- or I mean the operations, and I was taking health physics.

Q But that was never --

A -- established.

Q -- never established, but from your job assignments and your backgrounds, it would be a natural assumption?

A That's right.

(Pause.)

MR. CRAIG: Okay. I don't have any further questions.

MR. MOSELEY: Terry, do you have any?

MR. HARPSTER: No.

MR. MOSELEY: Roger?

MR. FORTUNA: No, sir.

MR. MOSELEY: That completes our interview, Don. We thank you very much. Let's go off the record.

(Discussion off the record.)

MR. STELLO: Okay. I want to make sure that I have an opportunity to summarize to understand what we have concluded on the two issues.

BY MR. STELLO:

Q The first issue, which was your recollection that you thought you saw some place something regarding starting up equipment in the containment. Give me what you believe to be your conclusion regarding that issue?

A The conclusion is that I may have read it in the testimony that I provided to Mr. Moseley, I think it was in October.

Q Okay --

A And I read it, because a similar question was asked.

Q You do not have any recollection of any discussion of starting up equipment while you were up at the site?

A No, I don't.

Q And the only reference that you can put your finger on is the transcript that was taken as a result of your last interview with Mr. Moseley?

A That's correct.

Q With respect to these two pieces of paper which contain some notes that you made in red ink, there is a reference on one of them that indicates it's "hydrogen," a word that's not legible, and then "4 percent." It also refers to a "sample" with the word "off, 3/29 10:00 a.m." and that tries to give you some time tag?

A Yes.

Q Okay. The next page goes on to discuss trying to set up the recombiner. That's the hydrogen recombiner?

A Yes.

Q Is it your best recollection that these two pieces of paper would have been written at about the same

chronological point in time?

A I don't know. It could have. I mean, I just don't -- since they're not numbered, I don't know.

Q Well, the reason I ask, however, is because they are written -- both of them are written in red ink --

A That's correct.

Q Would that be a reason to suspect that they were written at about the same point in chronological time?

A Yes.

Q Now, do you have any recollection of when you first heard discussions of trying to put on the recombiner?

A Well, I'd like to point out that this is -- those notes may not necessarily be something I discussed, because they could have -- on the 29th, I was starting to spend time in Unit 1, and it could have been input from inspectors, or ...

Q I understand that.

A So I don't know if it was my discussions, or --

Q I understand that. But do you have any recollection at all of when the recombiner was being discussed --

A No, I don't.

Q -- being brought on line?

A No, I don't.

Q Is it reasonable to conclude that these notes, since the issue of setting up the recombiner, that that might be another time tag?

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A That's why -- The pieces of paper are separate. When I was trying to put the notes together to send to Mr. Moseley, with the hydrogen, because of the -- my not knowing about -- what I thought about the hydrogen, it didn't seem to fit with the 28th and 29th, and I thought it was some time after they found out about the hydrogen problem. Because -- the notes weren't attached together, so I couldn't -- you know, I didn't know what --

Q Would that mean that it was sometime Friday or later?

A Could be; I don't know.

Q Okay --

A They weren't attached, you know, stapled together; everything was loose in there.

Q The "sample" that you refer to. Could that be referring to a sample that was taken on 3/29 at 10:00 a.m. and results being reported at some later time?

A Yes.

Q In fact, isn't that usually what would happen? They usually pulled the sample, and then sent it over to one of the labs on site for analysis?

A Yes. In this particular case, it was probably sent off site because they lost their counting capabilities on site.

That particular one, as I discussed earlier in the

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testimony, we had requested the licensee to remove those samples and count them. And most likely the reascn I documented it is because they had resisted doing that the day before. And apparently they had finally -- I think that was probably the first one that they removed.

Q When were you working your shift, again? Were you nominally on the day, or night?

A In the first -- the 28th through the 30th, we were working, from the 28th through the 29th, we worked 40 hours with 2 hours' sleep. We weren't on a shift. We were just -- until we got replacements on the 30th, there weren't any "shifts." We were just there, and would leave to go to the motel, and come back.

Q Do you recall when you left on Thursday?

A Well, let me start back on Wednesday. We left, I think, probably around 2:00 -- 12:00 or 2:00 o'clock Thursday morning, and then came back in Thursday morning around 6:00 o'clock. So it was sometime that evening when we probably left again on Thursday.

Q And when were you having the problem with the samples?

A It was on the 28th.

Q And you were trying to get them to pull the samples?

A Yes.

Q So then it's possible that this could be a note that

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was made at about the time they pulled the sample on 3/29?

A That could be.

Q Could be?

A Yes, sir.

Q Or it could be a note that you made that the sample was in fact pulled?

A Yes.

Q The next day?

A Yes.

Q It could be either way.

A (Nodding in the affirmative.)

Q There was also some discussion, as I recall, about -- Friday, about what the amount of hydrogen might be. The waste gas decay tanks were running high in pressure, and there was a concern about trying to take those tanks and empty that gas back into containment. Do you recall those discussions?

A I can remember that being brought up. I don't know whether it's something I've learned since the accident, or I heard something then. I don't know. I can't separate the two.

Q You don't recall when that occurred?

A On that Friday, that is when the -- if I can recall, that is when the Regional support starting arriving on site, and I think I was off the site up until about 3:00 o'clock that afternoon, when I took over one of the

shifts, which it was the 4:00 to 12:00 shift at that time on that Friday. So something could have gone on during that day that I wouldn't have -- wouldn't know about.

Q Did you have any recollection as to when the boreated water storage tank was being filled?

A Only from my notes there where it talks about the Haliburton. That might have some input to it there; I don't know. "Haliburton tanks" there.

Q Okay, there was nothing else that you could look at in your notes that would cause you to have any recollection of time?

A No.

(Pause.)

(Handing document to witness.)

Q There is a -- let me show you your notes on this first page. It looks like it's -- Well, let me ask you what it says. I'll point to it, so that I don't read in a word which might not be there. Right where I have my finger (indicating).

A I think that's "sump tank."

Q "Sump"?

A (Nodding in the affirmative.)

Q Was there not an attempt being made at some point to look at getting water from Surry and have some equipment and things brought up from Surry? Do you recall any such discussion?

A No, I don't.

(Pause.)

Q There is something here that says "Unit 1 tank coming on site for low-level water." Do you know what that means?

A It's probably some of those different tankers. They brought some tankers in from Southwest Nuclear, and other tanks -- but a lot of that started on the 31st, I think. I don't --

Q Do you think that that's what the note is referring to?

A I don't know.

Q Well, I think the words are fairly legible. "Unit 1 tank coming on site for low-level water."

(Pause.)

A I don't recall what that --

Q Do you think it could refer to tanks arriving on site?

A It could have been -- I don't know, it could have been Unit 1 was finishing up a refueling and it could have been coming on to process Unit 1 water after the refueling; I don't know.

BY MR. HARPSTER:

Q Capgun riggers?

A Like a capgun for low level.

(Pause.)

Q I was just trying to review your records on here, whether there was anything on here that could possibly refresh your memory as to when those notes were taken.

A I would definitely think they were -- by the color of the pen, and the same paper -- they were probably in the same time frame. And if I used the "3/29," that was the ...

MR. STELLO: Is that it?

MR. MOSELEY: That's it.

MR. STELLO: Okay. Thank you very much.

(Whereupon, at 1:02 p.m., the interview of Donald R. Neely was concluded.)

* * *

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NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the

NUCLEAR REGULATORY COMMISSION STAFF

in the matter of: Three Mile Island Unit 2; Interview, Donald R. Neely

Date of Proceeding: Tuesday 13 January 1980

Docket Number:

Place of Proceeding: Bethesda, Maryland

were held as herein appears, and that this is the original transcript thereof for the file of the Commission.

JANE W. BEACH

Official Reporter (Typed)

Jane W. Beach

Official Reporter (Signature)

March 16, 1981

Memorandum for: John W. Craig, IE HQ

From: Donald R Neely, Region I

Subject: TMI-2 Transcript Corrections (January 13, 1981)

The following corrections are requested to be made in the above referenced transcript.

1. Page 22, line 10, delete the word "feed."
2. Page 26, line 6, change word "off" to "on."
3. Page 62, line 14, change word "Reactivity" to "radioactivity."
4. Page 67, line 15, change word "Field" to "Fuel."

: Donald R. Neely

POOR ORIGINAL