TMI STAFF INTERVIEW

1525 Hrs. 12 April 1979

Interviewers	Interviewees
Robert L. Long	Dick Dubiel
John Hilbish	Gary Miller
	Jim Seelinger

DUBIEL: The morning that it started on March 28, I was called about 4:30 at home and told to me in. I did not know or have any indication of what the problem was, other than we had a turbine and reactor trip in Unit 2. I immediately got up, got dressed, came in -- it took me about a half an hour, so somewhere around 5 o'clock I came in -- went to the control room in Unit 2 and was told by George Kunder that we had unusual occurrences in the reactor building. He really did not describe to me any details, other than he was very interested in getting a reactor building atmosphere sample and in making preparations for a reactor building entry.

I got the technician, went down and we tried to get a sample of HPR-227, which is the reactor building atmosphere monitor. As we opened up the iodine monitor holding a charcoal cartridge, a large amount of water came out. I immediately closed it back up, and with the amount of water in there, my first thought was that we had some type of a steam environment in the reactor building atmosphere causing some condensation in the sample lines, and getting water into the monitor; so I called George and told him we could not get a sample off that monitor because it was full of water.

He told me at the time that we were running into problems with the boron sample. They had run a boron and they came out with a number of about 700 ppm. He wanted me to check that because we had been running about 1050 ppm while the plant was critical or at power just prior to the trip. They wanted to verify what our boron concentration was so I immediately went over to our Unit 1 HP lab. In the HP lab I talked to the technician who ran the sample, and he said he felt pretty confident about the 700 number; but since he had been on from 11-7 that night and was a little bit tired, he thought maybe he did make an error. He wanted to have someone else verify it so I grabbed a second technician and I asked each of them to run a sample; take one sample, split it and each of them run the analysis. They did that; they got about 440 ppm each; I think they were about 5 ppm off on the two analyses. .

MILLER: (Just entering room.) Why don't you let me give you my version of it in stages? Like I'll take you from 4 to 8 and I won't go through the details of the trip but I'll tell you where I was from 4 to 8 and let them fill in from 8 to 12.

LONG: OK, but remember I'm only trying to focus on the decision to initiate site emergency and the decision to initiate general emergency — what you based those on, when you did them, as well as who did them, and who called whom?

SEELINGER: I've got some of that, Gary. I'll talk a little bit and I've got to give it to you chronologically . . . I had been called at quarter to six in the morning and had been told that Unit 2 had tripped. I'm the Unit 1 Superintendent and, frankly, just the fact that they had tripped was not a totally unusual sort of

thing. Gary said that they were having some sort of a problem with pressurizer level. He didn't sound like there was any real cause for an abnormal amount of alarm, but he did say, "Don't give Unit 2 any trouble about the steam." Unit 1 was hot at that time and we were recovering from a refueling outage and the auxiliary boiler can only supply feedwater heating to one of the two units at a time. I immediately got on the phone to call the Shift Supervisor and tell him that, "Hey, don't give Unit 2 any trouble; the steam goes to Unit 2." I tried to call him and he was in the Unit 2 control room. I thought Oh, well, he's over there and I can't reach him and I'm not gonna bother them in the middle of this thing if they're having problems. So I waited 10 more minutes and I knew my Supervisor of Operations would be in about that time and I tried to call again. And they said, "Yeah, he's in, but he's over in Unit 2." And I thought, "Oh, my gosh, they really do have some problems." I thought I'd better go in and make sure that nobody gives Unit 2 any trouble about getting steam.

That was my objective as I started out and I got on site at a quarter to seven in the morning; as I passed between the Security Building and the front door here in Unit 1, the words "site emergency" came over the public address system. It was between a quarter to seven and ten minutes to seven that the emergency was declared. As I remember, I dumped my stuff off at my office and then I started running the other way -- not because I wanted to run the other way -- but because I forgot to pick up my TLD and I knew I was gonna be wherever I was gonna be for a long time. So I figured I'd better have my TLD with me; I went back to the security

center and got my TLD and ran to the Unit 1 control room, which is where I'm supposed to be.

I also had seen Joe Logan's car in the parking lot -- he's the Unit 2 Superintendent -- so I figured: (1) I knew the problem was with the Unit 2, and (2) I knew that the opposite Unit Superintendent was supposed to take charge in his respective control room. So I went to the Unit 1 control room and from the Unit 1 control room started to try -- and here's where it's foggy in terms of what we tried to do now -- but we pulled out the Emergency Plan and started to follow it. We started to try to do some of the off-site communicating and here's where it gets foggy as to whether we were doing that or whether Unit 2 was totally doing that. In addition to that, we broke out all the isopleths and the area maps and started trying to track the plume as best we could and establish the necessary communications with Unit 2 per the Plan. Now, that happened in relatively rapid fashion and we were pretty well set up by essentially 7 to 7:05 o'clock.

MILLER: Were you in Unit 1?

SEELINGER: I was in Unit 1. I don't know what time it was when I got to Unit 2 control room, but it was when somebody finally called me over there.

MILLER: I called you over there.

SEELINGER: You called me over there.

MILLER: I got called at quarter to seven; I had been on the phone since 4 o'clock.

SEELINGER: At any rate, I was in the Unit 1 control room between a half hour and 45 minutes and Gary Miller called me over to Unit 2. I alternated between the two control rooms the remainder of the day. The reason for that was periodically I was in charge of the Emergency Control Station (ECS) the first day; and when Unit 1 became unhabitable the plots moved over to Unit 2 and then they moved them back to Unit 1 when it became habitable again; it was a matter of habitability that first day. Admittedly, this is very confused as the events ran together something fierce timewise, but I do remember that we ended up evacuating the normal ECS which was the HP point. That went to the Unit 1 control room. Unit 1 control room had to be evacuated as an ECS because everybody was in masks over there for a while. Then that moved over to the Unit 2 control room. Eventually, we got back to the Unit 1 control room and I don't remember the time frame.

George Kunder was in the Unit 2 control room and George is probably one of the people that in my mind I think you ought to be talking to -- to give you a feel for some of the scenario -- but these* are the calls that George had made. You'll find that almost all of these went from the point of site emergency just immediately down to general emergency.

MILLER: I got called; I was on the phone from 4 o'clock on. Somewhere around 6 o'clock I even had a conference with Jack Herbein, Lee Rogers, me, and George Kunder, who happened to be in the control room. Quarter to 7 I had made the decision at that point not to

*Handwritten notes provided to R. Long. Typed version appears in G. Miller "forum." Also Seelinger reads it into tape later on.

go to Oyster Creek. Quarter to 7 I got a call from Dan Shovelin. In between, I believe, I called Seelinger.

SEELINGER: You called me at a quarter to 6.

MILLER: I called Joe Logan and Dan Shovelin and told them to get in here. Jim must have been on the way; Dan was on the way; Dan got here before I did. Quarter to 7 Dan called me and Dan's not an operator. Dan said, "Hey, there's radiation. He said, "The sample rooms got it; W got one R/hr in the machine shop." He might have said, "Hot machine shop." Either way it's someplace I didn't expect an R/hr; then I started getting ready to go to work. It was probably around 7:05, roughly, by the time I got here. When I got here, they had already declared a site emergency and at that point, in the Unit 1 control room I think Seelinger arrived, and he was helping with that end of it. In the Unit 2 control room there was Joe Logan, Dick Dubiel, Mike Ross, George Kunder, and Lee Rogers.

LONG: Excuse me, Gary, would Kunder have been the senior man?

MILLER: He's the Technical Superintendent.

LONG: Would he have been the one to have declared the site emergency, probably?

MILLER: Probably, but it could have been . . .

SEELINGER: I talked to George on the phone and I suspect that George is the one who initially declared it.

MILLER I believe Bill Zewe declared it, or had George declare it, on the basis of a number of monitors and alarms. That's what I was told

here. OK? Now, when I got here we were obviously in an increasing radiation situation. Every monitor was going off. The dome monitor was beginning to register and I don't know what time it happened exactly. My memory is that around 7:20 or 7:25 we passed through 8R/hr and I declared a general emergency.

After I got to the control room and was briefed, I said, "Alright, I'm in charge of the emergency; I'm the Emergency Director." I said, "Mike Ross, you'll take care of the plant, and I'll only talk to you about the plant. Dick Dubiel, you run the off-site and on-site thing, the interface with the State, and so forth, and communicate with me." I told Joe Logan to get the Emergency Plan out. I told George Kunder to start the notifications, as I remember, or to get them started right away. The way I run the drill here -- I talk to 3 or 4 senior guys and I only talk to them. The operators probably didn't even know what I was doing, I would guess.

And, that's the way it started. My memory is that we had calls going to that whole bunch -- NRC, the State -- at most 10 to 15 minutes after 7 o'clock everybody was called.

SEELINGER: Just so it gets on tape, maybe we should read this here.

MILLER: Read it.

SEELINGER: For the tape, this is reconstructed and from the logs of the guys who did the calling: 0650: Site Emergency declared.

LONG: Excuse me, Jim, which logs -- are those from the control room?

SEELINGER: I think they are still on the board up in the control room. John, did you look?

HILBISH: It was still there this afternoon.

SEELINGER: It was still on the board when they called them in. These guys reconstructed this essentially from looking at the board of the times the notifications were made and from these guys -- being the guys that did the calling -- remembering what they called versus the times on the board. Here's what they put together for us:

0650: Site Emergency declared.

0702: Unable to contact PA Civil Defense Duty Officer.

0704: NRC notified -- no one there but secretary to beep duty officer.

0705: (Approximately) Attempted to notify Jack Herbein.

LONG: Excuse me, could I stop you just a couple of places. Which NRC office?

SEELINGER: That would have been King of Prussia, I'm sure.

LONG: OK.

SEELINGER: 0705: Attempted to notify Jack Herbein; unable to contact him.

0709: ERDA-RAP team notified.

0709: (Approximately) Attempted to notify L. Lawyer; couldn't get him.

0710: Notified R. Klingamin at Met-Ed.

0713: Called Radiation Management Corp. at the Philadelphia Electric number; answering service will forward number.

0715: Notified Dauphin Co. Civil Defense.

0715: (Approximately) Notified PA Bureau of Health.

0717: York Haven monitor on.

MILLER: Now let me tell you what was going on there. I knew the wind was blowing toward Goldsboro; I had a 10R projection at Goldsboro. Somewhere in this sequence, we had the meter pulled and read and, in my memory, we had a State Police helicopter called. That should be on the record.

SEELINGER: It may be, as I read on, but I remember that the State Police helicopter. . .

MILLER: And they were over there by 0730.

SEELINGER: 0718: Notified PA State Police.

0720: (Approximately) Attempted to contact ANI; no answer.

0724: General Emergency declared.

0730: (Approximately) Called back the RAP team; they will be dispatching a team to the site.

0730: (Approximately) Contacted State Police to notify of general emergency.

0735: (Approximately) Notified ANI; no one there except for operator; left a message for them to call us, that it was important.

0738: Recalled Radiation Management Corp. at Phila. Electric to tell them of general emergency; forward message.

0740: (Approximately) NRC returned call; they will be dispatching a team to the site; the phone was held open so they could be in constant communication with us.

0930: (Approximately) ANI returned phone call and were notified of general emergency.

MILLER: But at 0702, Director Kevin Maloy was called and this has been verified with Civil Defense.

0704: Civil Defense called BRH; I verified this with BRH with Mr. Gehris today.

0707: Met-Ed again called Civil Defense. OK, the reason that happened that many times, I couldn't get anybody to tell me they had personally talked to Kevin Malloy and I even had George Kunder call him at home.

DUBIEL: At 0707 is when you told me that we had not gotten a call back from BRH and I got on the phone and called Kevin Malloy; I personally talked to him in the Civil Defense Office; told him to get somebody from the BRH on the phone back to us; gave them the telephone number, the 6017 number. Within 10 minutes, there was a phone call back and from that point we established an open line.

SEELINGER: I have one other note here and this was from George (Kunder). George said that at 0740 the BRH called back and George was on the phone with Jerusky. George gave him a run down of the plant status and we kept the open line just like you requested, Dick.

MILLER: Right. Now I got the helicopter because the wind was blowing at its worst condition, like 2 miles an hour or less. That meant it would reach Goldsboro. And if we had the 10 R/hr. projection that had first been given to me -- which is based on a source term out of the monitor of the building -- that was trouble. So we sent

the helicopter; the meter was read; and we had nothing. The helicopter was over there and I don't know why it's not recorded on your list. We ought to make sure that the logs of these state agencies are a part of this documentation because they've got to show what I did. I don't know what has been done yet, but these guys all keep logs; the Civil Defense keeps logs, the State Police keeps logs; and they do it normally and they do it in emergencies; they're not like us. I know I had no (above background) readings over there; and I had a guy at the west shoreline, too, with no readings.

DUBIEL: We had a guy out between the screen houses on the west shore, which I believe. . .

MILLER: . . . had a team dispatched in a car -- had a team dispatched in a helicopter in the direction of the plume.

DUBIEL: The car would take approximately an hour to get over there with morning traffic.

MILLER: It was 0730 in the morning and that's why I asked for the helicopter. The helicopter came right away. I don't know why that's not recorded. It's gotta be in the log somewhere but it was confirmed to me that it was here and it was dispatched.

SEELINGER: Do we know where. . . maybe, you do, Dick. . . I don't — we had the phone talkers and I continually remember that in the first couple of days I was trying to get the phone talkers to write down absolutely everything they heard, because. . .

MILLER: And I don't know what happened to Don Berry's log.

DUBIEL: The one thing I can say -- there was a box in the control room put on the floor that all logs and everything went into and I have a feeling that that's where the phone talker's logs and everything else probably ended up -- in there.

LONG: That's presumably the boxes in the control room that got to Broughton's trailer or your trailer, Gary.

MILLER: Broughton's; there's nothing left in mine.

LONG: And then those have been transferred over to Trailer 26 at the observation center and put in the safe and we'll go through them.

MILLER: You got to look for logs of phone talkers of this morning. Now, one other thing. Now you're talking about all this occurring in the time from when I got here until a quarter-til-eight. Management was notified, also, what I had done. Around the same time I had Logan going through the Plan telling me that everything in the Plan was met, and that's why I asked you (nodding to Hilbish) to read the Plan before you came down here -- because there were things going on, I'm sure. That was confirmed to me, but I don't remember. I was only worried about exceptions.

SEELINGER: And I was involved in that same action, too.

MILLER: At the same time, when I first came in and got briefed on this, I also realized that the situation we were in was one that I don't ever remember being trained on -- that is, the pressurizer was solid, the loops had steam bubbles in them, and the pumps wouldn't run. And there were attempts made to start the pumps. Somewhere

in that scenario, in that same time frame, we had -- like 100 amp -- and I knew that we were running on less than water. That may have gone on before I got to the control room.

LONG: That sequence is what the other guys have put together.

MILLER: That's right, but I had at that time decided that once the emergency drill was running and we had off-site and on-site things going on, the ECS was moving and the State was moving, then we could return our attention to the plant in an hour-by-hour fashion. I brought Seelinger to Unit 2, because of his qualifications on Unit 2, being that he spent a year as a Technical Superintendent down there. And I had Lee Rogers there; I had Ross and I had Logan helping with the Plan. What I basically did was every 40 minutes we met in a room back there and assessed where we were and where we were going to go. Dubiel handled his end of it with off-site, on-site communications with the State, and with Maggie. Also, at the same time, there were calls from J. Herbein and there were calls from Parsippany and Lynchburg. The whole thing got compressed into a very pressurized, almost break-you type atmosphere.

LONG: Did you use these checklists? And are they initialed and are they somewhere?

SEELINGER: Pass your checklist over, please.

This was out of the big volumes in the emergency procedure?

DUBIEL: No, as a matter of fact, there's a change in . . . is this an up-to-date one?

MILLER: It doesn't look like an up-to-date one.

LONG: It's supposed to be, but it might not be.

MILLER: You also gotta watch it to get out the old Unit 1 information on emergency plan.

SEELINGER: I'm sure that this is not the up-to-date Plan. This checklist, I'm positive, is 1974.

MILLER: You gotta get a current copy of the two volumes of the Emergency Plan.

LONG: OK, where do I do that?

MILLER: You gotta get it through Bill Parker, I would guess.

LONG: This is what Bill Parker gave me.

MILLER: That can't be right.

LONG: I made a copy. I didn't bring the whole two volumes.

DUBIEL: What was followed was right out of Section 2, 1670.2 and 1670.3, which are site emergency and general emergency procedures. Do you have that with you, John?

LONG: But you didn't follow a checklist? Do you know whether or not anyone checked out all of the actions which are spelled out, as they are on this checklist?

SEELINGER: What we did do, because I remember physically doing this, is -- I went to the procedure, this is the heavy procedure essentially -- the site emergency procedure -- there is very little difference

between the site emergency and the general emergency procedure -- and I went through this item by item. I read each item and I verified by looking around. . .

LONG: This is 1670.2?

SEELINGER: (Nods, yes.) I went through that and I made sure that everything that was in here was physically being done; and then I went over and I looked at 1670.3. I periodically got distracted from this so I had somebody pick it up when I was not there -- a senior guy -- I cannot tell you who it was right now because it changed, but I physically made sure that everything that was written down was, in fact, being done or in progress. That's essentially how we did that.

As far as off-site notification goes, the fellows who made those calls made it in accordance with the telephone list. I'll make a copy of this stuff for you.

We used 1670.2 and 1670.3 to confirm where we were and make sure we were doing it in accordance with that. We had this drill yearly and I've been involved in about 4 of them now; I ran the one the first year I was on-site. We usually come off the drill pretty well and get some compliments, particularly from a fellow by the name of Chuck Galena, who used to be the primary NRC inspector. I felt that, even though the pressure was intense, as Gary has described, our drilling had really paid off. I mean there was not a real element of confusion at all as far as the emergency plan was concerned; we were carrying out the notifications as prescribed; we were doing everything just completely as

written down. We always wondered if we had one of these things what we would do when the wind blew from east to west, because transportation is terrible to the west shore from here. You have to go around -- boy, Gary was just right on top of that with his helicopter -- you know what I mean? It was during the rush hour.

MILLER: I fed that into our scenario last year.

SEELINGER: That really showed some presence of mind, I thought. I didn't realize he had done that last year.

MILLER: During the licensing hearings on Unit 2, I realized the vulnerability of the west shore in my own mind, or what I felt to be vulnerability at 7:10 in the morning. I remembered that we dry ran a helicopter and it was there that morning. I was able to tell the first hour that there was nothing at the west shore boundry and nothing in Goldsboro. Nothing.

LONG: Right.

MILLER: That's all I worry about.

LONG: You mentioned the 8 rems. Is that one of the conditions?

MILLER: That's one of the general emergency conditions. There are about 3 or 4 things in here for site emergency. 125 (mr/hr) at the site boundary, 100 times on stack vent; and 8 R in the building. And I was going above 8 R.

SEELINGER: There are four specific action levels but the first one is when the dome monitor reads greater than 8 R per hour.

LONG: And that is the one that triggered. . .?

SEELINGER: That was the first one that triggered the general emergency.

LONG: Is that an alarm that's printed out anywhere so that there might be a record of the time that happened?

DUBIEL: Yes, as a matter of fact, it is on strip chart and Don Reppert had copies of all the strip charts a couple of days ago.

LONG: OK, I've got those, too.

MILLER: One of the benefits I've never had is looking at any documentation to see whether any of the times I gave are anywhere near accurate. OK, so what I give the NRC is the best of my memory. Those hours went by, 20 or 30 hours, at a very fast fashion and when I woke up Thursday morning, I couldn't remember any of it. I was even at the Lt. Governor's office at 2 in the afternoon.

I believe that the kind of capability that we kept here kept the state out of as much trouble as anybody. Because, we were able to man teams to give them advice to put teams out, and to tell people positively what the readings were before they ever came on with the NRC or anyone.

LONG: That's the other thing I was gonna ask you about. Was the survey that was going on getting people out in trucks?

MILLER: On and off-site teams with radio communications to those teams from the ECS; Dick is the over-all charge -- but remember that's why we gotta look for any ECS documentation. There was a guy in charge of the ECS, probably T. Mulleavy.

SEELINGER: Well, I was initially. I started it, but I can't tell you when we were taking all the readings from the radio. They were on slips of paper and I can't remember if that was the first or second day, but I started logging those readings down. Now I have some of the early logs.

DUBIEL: I have copies of some logs, but they don't start until 1900 on the 28th; and this doesn't include the slips of paper.

SEELINGER: One of the reasons for that (uncertainty about logs) was that the wind stopped and the wind shifted -- died -- and then it went and swirled around here.

MILLER: We had it on site. I was more worried about where people were assembled; but we moved people in assembly areas and I discharged people from the gates to go home, because of the fact the wind was stagnant and the control rooms weren't getting it.

LONG: That's right.

DUBIEL: We had one indication of a reading, which, as a matter of fact, was Goldsboro; they had an indicated iodine level that was 10^{-8}; I don't remember what the exact number was, but I was very hesitant to believe it because of the SAM-2. We immediately made arrangements for the helicopter to take the sample to Holy Spirit Hospital in Camp Hill. The State picked it up and analyzed it and determined that it was less than their MDA, which was extremely low. At the fences over here on the west shore, we did start seeing levels -- I don't remember the value.

MILLER: 6 MR-7 MR in that range. But nothing in Goldsboro and then the wind died and the wind shifted east and came over this way and the helicopters brought the guys back. But we had readings being taken at the Observation Center after a while.

SEELINGER: The highest levels that I remember were in the evening of the first day and they were taken up north of the airport, along either Routes 230 or 283. They were as high as 12 and 13 MR per hour at a school that was northeast of the turnpike interchange (maybe half a mile or 3/4 of a mile).

LONG: I guess, Cary, you've already identified it as a problem. Maybe we should try to accumulate all of the notes that people have. What my job is at Data Management is to try to get all that stuff and make sure we've got it on file. I've got a lot of people working to do that. We probably didn't get it started soon enough, but even so it is most important to look at the off-site impact to ensure we know how you handled the sequence of events.

MILLER: I also encourage you to get other people's notes of this thing.

LONG: Yeah, I've already made a note of it.

MILLER: . . . Because we've got to show that there was constant communication. We knew the conditions off-site the whole day and where we were going? In fact, after we got that under control, the hardest part of this thing was the plant -- and my fear that I couldn't get the plant down.

LONG: John, can you think of any questions that you want to ask these fellows?

HILBISH: Yeah, I just want to go back and make sure of a few things. I'm completely straight in my mind as to the general emergency and what triggered it. At approximately 0650, the site emergency was declared and again there are six action levels in the Plan. However, I just want to make sure what we really based it on was essentially the section that says a high radiation alarm in two separate buildings due to a single event.

DUBIEL: John, at around 6:45, just as the 7-3 shift was coming in, the alarm went off in the hot machine shop. There's a gamma monitor back there. Mike Janouski and Pat Donaki immediately went back. I was right behind them. We walked into the area right behind the machine shop and were ready to go into the hot machine shop when they noticed that the dose rate meter in their hand was reading about 3-400 MR per hour as they turned it toward the sample line. It was on recirc. and as they moved the thing towards the sample line, they went up over 1 R per hour and they were several feet away from the sample line. I appointed Janouski in charge at the ECS until the Supervisor could get in, because I didn't see any at that time, and I called Kunder. I gave Kunder the information and before I could even get out by the Unit 1 neutralizing tank, the site emergency was declared and the siren was going off. So I think that event, plus what was happening in the Auxiliary Building -- I'm sure they got several gamma monitors over there going off -- it could have very well lead to that declaration.

SEELINGER: I remember that we tried throughout the morning to say things on the paging system; at times we probably didn't say as much as in retrospect, we might have; but frankly, we just didn't know totally what we had; so we kept trying to announce to people the

places to go, what we thought we had, and we tried to do that every half hour or so. We did have assembly and accountability for everybody; we didn't release them until after we had the accountability.

HILBISH: When was that done?

SEELINGER: John, I'll say 9 o'clock, maybe plus or minus an hour.

MILLER: Ask Jim Stacey if he has any documentation of that.

SEELINGER: But, I do remember we did assemble all the people and we had assembly areas in the warehouse, in the auditorium, and in the Turbine Building in Unit 2.

MILLER: Plus we eventually sent people from the gates to the Observation Center and put someone in charge of the Observation Center; so we then knew where the people were and we knew where the plume was.

SEELINGER: In fact, I directed somebody to go down from the Observation Center to the North Gate that morning and divert all traffic (all incoming traffic); and this would have been about 7 o'clock, because normally the maintenance people get there by 7:30. We diverted everybody to the Observation Center. That was one of the first things I did when I got to the Unit 1 control room. Most of the time our communications was on the red and the white phone between the two control rooms until we got the phones established and we had status boards in both control rooms.

MILLER: Unit 1 was in a hot shutdown following a refueling in preparation for its startup and testing for this cycle. The Unit 1 was in hot conditions, but not power conditions.

SEELINGER: Also later on that day, I made the decision to keep Unit 1 where it was; I decided that -- based on the fact that it would have taken more people than we had at that point in time to try to cool it down -- we didn't want to try anything like that.

MILLER: That night around midnight I got permission to cool down Unit 1; and we did that on a manpower permitted basis the next day. That decision was based on the fact that we felt that Unit 1 was not going anywhere.

SEELINGER: I remember we had an emergency repair party; I remember seeing them in the control room a few times when we had to evacuate the ECS.

MILLER: We had Dan Shovelin in charge of maintenance in the control room. He moved all the maintenance people around. He authorized who got sent home and who was called in. Dan would have kept the vital disciplines and supervisors. I think that the emergency plan was run by the book.

SEELINGER: I do, too.

MILLER: It was run the same way I run a drill. Right down. I have a set of emergency drill cards I picked up; I have always kept them, got the whole emergency plan on two cards and, when I got in here, I followed it exactly and my mind was right on it.

LONG: Did you have those cards with you?

MILLER: Yes. I didn't need those cards, but they start your mind thinking. But then, to us, I felt that Dick Dubiel had the emergency plan part under pretty good control. He began to get people like Sid Porter

involved, and he had on-site and off-site teams and he had Maggie on the phone.

LONG: Can you identify when somebody from NRC first appeared in the control room?

SEELINGER: I cannot tell you the exact time, but there were 5 guys that showed up; the first ones came to the Unit 1 control room. I estimate they got here around 10 o'clock in the morning. We can tell when they went through the north gate from the security records. We were having respirator problems at that time. We were periodically in and out of respirators and we had so many people in Unit 2 control room that we took 2 of them over to the Unit 2 control room and left the others in Unit 1; so 2 of them we sent over in respirators and the others stayed in Unit 1 control room without respirators on.

MILLER: You need to get the security log; I believe there were a lot more of them on-site by afternoon.

SEELINGER: Oh, there were! But the first group of 5 arrived about 10 o'clock in the morning.

MILLER: I'm sure the SWAT team or the RAP team arrived, and people like Brookhaven were on the phone. Right?

SEELINGER: They responded great.

DUBIEL: The RAP team was on site later that morning or early afternoon. The helicopter or the aircraft was flying overhead giving us readings.

MILLER: Some of that documentation has got to exist outside our organization because those kind of people keep logs on the whole thing.

And I think that from then on we began to concentrate on the plant and to somehow convince ourselves the core was covered -- the whole time from there on. The instrumentation that I had available was not unconvincing, but there wasn't proof positive. When I got to the control room, the T_h was pegged high and the T_c was pegged low and the pressurizer was solid and the pumps were off. I sent Ivan Po·ter out to get a computer reading on the thermocouples and he got question marks. Then I sent him down to the penetration and he got 200°, 300°, nothing, 2400°. We, being me and Lee Rogers, called Lynchburg pretty early, and we sat in the room and every hour tried to figure out how to keep pumping water into it. But all we were doing was pumping that BWST through the electromatic to the floor. Nothing was changing, so you know we pumped 12' or 13' out of BWST and my fear was pumping 50 feet out and the core still hot and no water in the BWST.

So our goal was to somehow get some circulation going, either natural circulations from steam generators or reactor coolant pump, using HP injection the whole time. My memory is that we pumped against the electromatic at fairly high pressures like 1800 or 2200 psi. We could have pumped against the codes, but we assessed that what we'd do is get the same flow through the codes without being able to see pressure. We pumped through there until around 11 in the morning, at which time we decided to take a shot at getting on core flood. And the reason we took a shot at core flood -- now remember Lynchburg was on the phone with a lot of good advice, but it was clear that it was my decision -- we assessed that if we could get down and activate core flood tanks and we saw them dump on the core we could get assurance that the

core had some water on. We couldn't tell that; we were scared that wasn't happening. Radiation was all over the place, everything was off scale. You got nothing in the core that tells you about water level; you got no pressurizer level, since it's solid; no way of drawing the bubble; I didn't have any heaters; I didn't have any letdown; and we had radiation in every room we went to. Didn't even have oil pumps for some of the RC pumps; couldn't get in some of the rooms; the readings were horrendous.

At around 11 we started down for core flood. When we got down, I think we saw about a foot decrease in the core flood tanks and at the same time the A loop responded for about the first time. That is, the temperatures moved a little bit and we then -- I may be wrong on the time, it was somewhere in the sequence that -- we ended up trying to get T_c or T_h to respond. We knew T_c was 240°F and we knew T_h was off scale. It didn't tell you anything.

LONG: That sequence of events was pretty well recorded by the instrumentation, so most of those things can be pinned down.

MILLER: Right.

LONG: Any other questions on that emergency procedure? I know you guys are busy and I don't want to take any more of your time. Do you think I ought to try to talk to Kunder or wait a while?

MILLER: No, I don't think you ought to; I don't think you're gonna get any more, personally.

SEELINGER: Just the first couple of hours, Gary.

MILLER: The one other thing that should be addressed is that we had isolated that B steam generator and we were steaming off the A because we didn't have a vacuum -- in my memory.

SEELINGER: We lost auxiliary steam.

MILLER: We lost auxiliary steam; so we had to go to the atmospherics. That was a big contention. We are steaming out the A atmospheric relief, which was our heat sink. As long as I was at least steaming, I knew I was taking some heat off. And also I think we were taking readings up near there.

DUBIEL: We took some readings up on the roof.

MILLER: We had no indications that we were letting any activity out. Now there was a lot of contention about the fact that I was letting radioactive steam off. We were not steaming the B steam generator; we were steaming because we had no vacuum; we were trying to get a vacuum back. We had to steam to the atmosphere and we were taking readings up near there and we weren't getting anything. I was told somewhere around noon to stop that steaming because of the political pressure. We did stop it; we drew a vacuum and stopped it.

SEELINGER: We sampled before we steamed, too. We sampled both steam generators and we confirmed that it was the B steam generator that had the activity and that the A did not have the activity.

MILLER: And, in fact, we had lines crossed on the sample rig.

SEELINGER: We had to go back and check them and make sure that it was the B that had the activity.

MILLER: There was some early confusion that both generators had it. And what that confusion evolved to be was a switch of lines in the sampling rig.

SEELINGER: We permanently, as I remember it, got the steam shut off in the early afternoon, by 2 o'clock.

MILLER: Right.

SEELINGER: I know that time's certainly not exact. It was very disarming to the public, and initial pressure was to stop. In their eyes; the radiation was coming from the steam.

LONG: Yeah. Well, this will let met get, at least, an initial sequence and these notes will be extremely helpful. What I plan to do is put together a brief review of the emergency plan indicating the way it was done. Has anybody else -- the NRC -- asked you about this?

MILLER: They did yesterday.

LONG: Did they? No one around here has had time to focus on that. Last night it came to me that no one had asked about the implementation of the Emergency Plan.

MILLER: I interviewed with two NRC Commissioners today and I told them that the NRC not being notified was a real misnomer. I showed them the board up there. I said, "Do you see that?" I said, "The NRC has got to talk to each other." I said, "I think it's irresponsible for the industry for you to say things like that as an organization."

LONG: I do, too.

MILLER: Yes.

SEELINGER: I think myself, Gary, that we did a better job with this than any of the drills that we have ever run. In terms of actually handling it with an outside organization -- everything that we had ever practiced -- we did. Plus we had all the adrenalin of the thing being real. You know there were a lot of ashen faces around, mine included, but we knew what we were doing. That was very obvious and our organization reflected it. I mean, we did it just like the drill. Gary, you came in and said you were in charge and talked to the people and we backed you up.

MILLER: The atmosphere in the control room was never other than calm. It may have been hairy, but it was never excited. Discussions were held in the Shift Supervisor's Office; we came out and that's what we did.

SEELINGER: The one thing different than any of the drills we ever ran before was the permanent plant problem.

MILLER: After we got all the offsite Emergency Plan going, we still had plant problems that were normally assigned to the shift foreman in all the drills. It didn't distract our attention from the release to the public, but frankly we still recognize it as our major problem. Our major concern was that the fuel didn't degrade any more than it had degraded from thereon, and to somehow figure out how to prevent that and how to stop this. I didn't really feel that we were stopping at the initial stages; I was scared of running out of water. The outside pressure that I was getting indicated that you could just pump this thing solid -- and I

couldn't get it solid. You could have pumped all day -- but I'm convinced without pumping water up the hotlegs -- because you had to collapse those bubbles. We didn't have a 4000 pound system. It was a hell-of-a scenario.

One thing I would recommend for any other plant, including Oyster Creek, is that somebody in the public relations field be familiar with the emergency plan. We needed a guy that was knowledgeable of the events that could talk to the press about what was going on.

HILBISH: You know that is an interesting subject, because Dick Klingaman and I were doing just what you were suggesting, cause Blaine Fabian's group had trouble. Dick and I were manning the phones until midnight that night, trying to help at that point in time. Those were not the questions that were being asked. Four days later they were, but those were not the questions being asked or the possibility of those questions being conveyed.

LONG: OK, thanks very much fellows.

Reviewed by: R. W. Dubiel, date 5/4/79
R. Dubiel

Reviewed by: G. P. Miller, date 5/2/79
G. P. Miller

Reviewed by: J. L. Seelinger, date 5/4/79
J. Seelinger