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PRESIDENT'S COMMISSION ON THE :

ACCIDENT AT THREE MILE ISLAND :

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CONTINUED DEPOSITION of METROPOLITAN EDISON COMPANY by FREDERICK JOSEPH SCHEIMANN, held at the Three Mile Island Nuclear Generating Station, Harrisburg, Pennsylvania, on the 25th day of July, 1979, commencing at 8:55 a.m., before Stanley Rudbarg, Certified Shorthand Reporter and Notary Public of the State of New York.

1908 193

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ALSO PRESENT:

CLAUDIA A. VELLETRI

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FREDERICK JOSEPH SCHEIMANN, JR.,
having been previously duly sworn, resumed and testified further as follows:

DIRECT EXAMINATION (Continued)

BY MS. GOLDFRANK:

Q We are going to begin the deposition again. I just want to remind you that you are still under oath.

A Yes, ma'am.

Q You brought with you this morning these memoranda that you found in your possession at your station at Unit 2, correct?

A Yes.

Q One is dated May 14, 1979, a memo from Seelinger to Jim Stacey and Mike Ross. I would like to mark that as Scheimann Exhibit No. 23. This is a cover memo to a May 11, 1979 letter from the NRC to Mr. Herbein.

(Scheimann Deposition Exhibit 23 marked.)

(Documents described below were marked for identification as Scheimann Deposition Exhibits 24 and 25 respectively, this date.)

Q We have also marked as Scheimann Deposition Exhibit 24 a memo to shift foremen, Unit 2, and shift supervisors, dated May 25, 1978 from J. R. Floyd, Unit 2 Supervisor of Operations, concerning Unit 2 Supervisor of Operations Memo 2-7811, Reactor Coolant 2 Pump Operations.

Scheimann Deposition Exhibit 25 is a May 7, 1979 memo from W. E. Potts, Unit 1 Superintendent, Technical Support, concerning IE Information Notice 7909, Spillover Radioactive Contaminated Resin, which is a cover memo of a letter from the NRC to Mr. Herbein,

dated March 30, 1979.

Looking at what has been marked as Scheimann Deposition Exhibit 24, this appears to be a memo that was sent from Unit 2 Supervisor of Operations J. R. Floyd to shift supervisors and shift foremen, correct?

A Yes.

Q And do you know who would have sent this information to Jim Floyd?

A Not off the top of my head, but I would think it would probably be B&W, according to the content of this first page. It was their recommendations on pump operation, due to the problem that had existed at Davis-Besse.

Q Do you know if this would have come directly from B&W to Mr. Floyd?

A That I would really have no way of knowing.

Q Do you know if everything that was sent to Mr. Floyd was forwarded to the shift supervisors and shift foremen?

A Again, I would have no way of knowing what Mr. Floyd's personal mail is.

Q But you would frequently receive information from Mr. Floyd as to information he had received either from B&W or the NRC or other sources?

A Quite often we would receive material from him.

Q Would this be delivered to you through company mail channels?

A Yes.

Q Do you have a mailbox?

A Yes, up in the control room.

Q What did you do with this particular memorandum; do you remember?

A I read it.

Q Did you talk about it with anybody?

A Yes, I talked about it with my control room operators as the time permitted.

Q Did you place this memorandum in any type of logbook?

A No, I would not, myself, no.

Q How would you ensure that control room operators would read something like this?

A Mostly, it would be if I did bring it up to them, I would bring it up to them orally, so they wouldn't have to bother with reading it. We would talk it over periodically. Whenever I would have a bunch of them, we would just have us a little session.

Q Would you retain these in a book?

A No, not necessarily.

Q Would you retain some of them in a book?

A Not necessarily. These were pretty much given out to us just for information purposes only.

Q So after you had read it, and if you thought appropriate, talked with the control room operators about it, what would you do with this memorandum?

A I would hang onto it until I had sufficient time to talk to them and then probably discard it.

Q On Scheimann Exhibit 24, it indicates that copies of this memorandum were sent to G. P. Miller, M. J. Ross, J. L. Seelinger, and Control Room Operations Memo Book, Operations Memo Book, and Penny Schofield.

A This one in particular would be in the Control Room Operations Memo Book. The others would not have the memo, as such.

Q Who determines which memos are placed in the Control Room Operations Book?

A I think thatwould be Mr. Floyd. He had written this to all shift supervisors and shift foremen, and they were aware of it, and it does have an Ops memo number. (Indicating.)

Q So each memo that is placed in the Control Room Operations Memo Book receives a number?

A Yes, it does.

Q And Mr. Floyd is the individual that determines what memos get placed in that book?

A It could be Jim Floyd. It could be somebody else, too.

Q Who else would determine what is placed there?

A That I am not really sure of.

Q Did you ever determine that?

A NO, I wouldn't have anything to do with putting anything in there.

Q What is the distinction between Control Room Operation Memo Book and Operations Memo Book?

A Operations Memo Book, if I am not mistaken, is one that we keep in the Operations trailer itself, whereas the Control Room Operation Memo Book would be up in the control room.

Q But both memo books would contain the same information?

A I believe so.

Q It is just a question of where one is located as to why they are called different names?

A I think that is true.

Q What else is contained in the Control Room

Operations Memo Book?

A To my knowledge, just memos of this nature, memos concerning plant operation, et cetera.

Q Are LERs placed in that book?

A No, that is a separate book.

Q What book are they contained in?

A It is called "Reportable Occurrence Book."

Q And where is that book?

A Up in the control room.

Q Who is responsible for ensuring that LERs are placed in that book?

A That I am not sure of.

Q It is not your responsibility?

A No, ma'am.

Q Is there a checklist to ensure that people have it?

A Yes, there is a signoff sheet on the front of each one.

Q Whose responsibility is it to check that those have been read?

A The shift foreman would normally talk to his people and make sure they are clear and up-to-date on it.

Q That is your responsibility?

A I would say so.

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Q Does that book always contain LERs from Three Mile Island No. 2?

A Yes, ma'am, to my knowledge it does.

Q It doesn't contain LERs from TMI 1?

A I am not really sure, but I don't really believe so.

Q It doesn't contain LERs from other nuclear power plants?

A Definitely not off the site.

Q And you indicated that there is a checkoff list to ensure that operators read these LERs, correct?

A Yes.

Q And have there been instances wehre control room operators have raised questions with respect to those particular LERs that they were required to read?

A I haven't had any question, and I really haven't heard of any.

Q If they had questions, would those questions be raised with you?

A More than likely, and if I couldn't answer them, I would proceed further through channels to find out an answer for them.

Q Do you ever remember receiving a memo from

anybody concerning an LER?

A I may have, but I don't presently recall it. Normally they go right into the book, the LERs.

Q Would you retain any memo that you might have received?

A It wouldn't be necessary since I write the LER itself in the book right there in the control room.

Q If somebody had a question concerning an LER and addressed a written memorandum to you, would you retain such a memo?

A The only time anybody would even ask any questions about an LER would be if I was personally involved in it, in which case I would promptly send them back whatever I could tell them on the incident in question.

Q Do you remember if anybody has ever raised a question with respect to an LER you were involved in?

A No, because I can't recall being involved in any LER at present.

Q Do the LERs indicate which shift was on duty at that point in time?

A I don't really think they do.

Q Are the people that are required to read this memo book, are they the shift foremen and the

control room operators?

A That I am not really sure of. I know I am supposed to read it, but I don't believe the control room operators necessarily are required to read it.

Q You indicated there is a checkoff list.

A That is in the LERs, not the memo book.

(Continued on Page 138.)

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2.1

Q There is no checkoff list in the memo book?
A Not to my knowledge.
Q What other books, aside from the control room operation memo book and the reportable occurrence book, are kept in the control room?
A Well, there is about 20 of them.
Q Could you give me a list of those?
A I could probably come up with a list. You want them right now or what?
Q The ones you can remember.
A Okay. We have got a standard technical specification book up there. We have got an environmental technical specifications. We have got lifts and leads, jumpers. We have got so many of them that I have a hard time remembering them right off the top of my head.
Q Are there any other books that contain information coming from other sources of Met Edison, aside from standard tech specs or books that contain operating procedures?
A No, not to my knowledge.
Q So the only two would be the control room operations memo book or reportable occurrence book?
A Reportable occurrence book is strictly TMI items.

That wouldn't necessarily have anything concerning other plants. In fact, I am sure it wouldn't.

Q My question was whether or not there are any other books in the control room that contain information concerning TMI 2, but information that comes from other sources in Met Edison.

A Not to my knowledge, nothing concerning other plants and sources. What we have up there is things pertaining to Unit 2 operation.

Q Aside from standard tech specs or operating procedure manuals, are there any other memo books in the control room, aside from the reportable occurrence book and control room operation memo book?

A There is one other, and that is the unit superintendent memo book.

Q And what is contained in that?

A Memos about day-to-day plant operations, like at present I can only recall one memo being in there.

Q And do you recall what that memo concerned?

A Yes, turnover of plant after construction.

Q So that the date of that memo would be?

A Probably somewhere in '78.

Q And that, as far as you know, is the only memo that is in that book?

A As far as I can recall.

Q And are those memos, memos that come directly from the unit superintendent?

A I would say yes.

Q Do you know if there are any other books?

A No, I don't. I don't know of any other ones, as far as memos are concerned.

Q Scheimann Deposition Exhibit 23 is a memo from Seelinger to Jim Stacey and Mike Ross. Do you know how you would have received this?

A In the mail.

Q Would you have received a copy of this in the mail or is this something that you received from Jim Stacey or Mike Ross?

A I received a copy in the mail. Yes, that comes in the mail.

Q Even though your name is not listed on this?

A It would be routed to shift foremen if it was intended for us to see it.

Q Even though your name is not specifically on here, it was routed to you as a shift foreman?

A True.

Q Attached is an I&E Information Notice No. 79-12 from the NRC. Is this the only method through

which you receive I&E information notices?

A I think so, yes, through the mail itself, in the form of one of those letters.

Q So Mr. Seelinger is the only person through which you would receive I&E's?

A Not necessarily. It could be any person that received it and thought it was of an important nature enough that we should be aware of it. You see, you have got engineering I&E notices. You have got operation I&E notices. Whatever department received them, if they thought it was of sufficient nature that the Operations Department should be aware of it, then it would come to us.

Q So would you look at the second page of NRC cover letter. It indicates that the licensing manager, private manager, the vice-president of generation, manager, generation operations; manager, generating station, Unit 1 superintendent, Unit 2 superintendent, No. 1 technical superintendent, No. 2 technical superintendent, Mr. Finfrock, Mr. Conrad, Mr. Trowbridge and Mary Southard received copies of this, correct?

A That is what it would indicate by the paper.

Q And if one of those individuals at TMI received a copy of this and felt it was important for

for you to receive a copy of it in turn, they would forward it to you?

A That is affirmative.

Q You don't necessarily receive every NRC I&E information notice though?

A Not necessarily. Some might not pertain to us.

Q Could you explain, please?

A Some might not pertain to the direct operation of the plant. Those we didn't necessarily get.

Q Do you know if you received all the ones that pertained to the direct operation of the plant?

A That I really couldn't say.

Q Have you ever received an I&E notice from anybody except Mr. Logan or Mr. Seelinger?

A One of the other ones is from somebody else, if I recall right.

Q Scheimann Deposition Exhibit 25 indicates that this I&E information notice came from Mr. Potts, Unit 1 superintendent, technical support. Do you know of anybody else that you have ever received an I&E information notice from?

A That I can't really say offhand. I might have received one.

MR. YUSPEH: Is this from Floyd?

1908 208

THE WITNESS: That is who we got this particular one from.

(There was discussion off the record.)

THE WITNESS: It was the result of an I&E though that we got that memo.

Q So you could receive it from any one of the people listed on the May 11, 1979 letter from NRC that indicates who copies were sent to?

A It could be anybody that was on that list or anybody that they in turn decided to give the memo to. We could receive copies from them. That is why I say there is a large number of people that could possibly deem that is necessary information for me.

Q Who would draft an LER?

A That I am not really sure of.

Q Have you ever drafted one?

A No, I, myself, have not.

Q Do you ever review any?

A Yes. I have to review the book.

Q Do you have to review the LER? When you say "review the book," do you mean the reportable occurrence book?

1908 209

A Yes, that is our LER book.

Q Do you ever review an LER before it is sent

to the NRC?

A I haven't as of yet.

Q Do you know who does review those?

A No, I don't.

Q Concerning your training either at Met Edison or at B&W simulator, what concerns were you taught about going solid?

A We were told it is something you don't want to do.

Q Could you explain to me in what terms that was explained to you?

A In what terms? I am not following you.

Q How is that explained to you as to why you did not want to go solid?

A We did not want to go solid because it could be a cause for an overpressurization problem, and due to the fact that if you increase temperature while you are solid, a small amount of temperature change would result in a large amount of pressure change, which as a result would cause problems.

Q What problems would it cause?

A Overpressurization, possibly rupture in the system.

Q So that you did not want to go solid to avoid rupturing the system?

A That was more then likely the main reason behind it.

Q And what problems would result from that?
A You would have a hole somewhere if you ruptured it, and you would have possibly a loss of coolant as a result of overpressurization or rupture.
Q In your training was the concern about going solid, that is were these concerns explained to you orally or in writing?
A Probably in both. I can recall that it was definitely expressed to us orally.
Q Do you remember if you received anything in writing?
A I may have, but again I can't really recall.
Q Would you have your training materials that would indicate concerns about going solid in writing?
A I wouldn't even know where to look. I may or I may not. I have got about 200 pounds of material at home.

MS. GOLDFRANK: I would like to request that the training materials concerning the concerns about going solid be brought here.

THE WITNESS: I can tell you it would probably take me about a month to weed through it.

(There was discussion off the record.)

Q You do not remember specifically whether or

not you received such instructions concerning the consequences of going solid, in writing?

A Specifically, no. I do not recall.

Q Do you remember whether or not you would have received such instructions from people at B&W.

A Again I am not really sure where I would have heard it, whether it was from B&W or in our own Training Department.

MS. GOLDFRANK: After we have reviewed the material supplied by Frederick and Faust, we will then determine whether or not we will reassert our request concerning Mr. Scheimann's training materials.

Q As far as you can remember, it is just a general instruction concerning the consequences of going solid or do you remember anything specifically?

A I don't remember anything specifically. I think there were just general reasons as to why you didn't want to go solid.

Q And you believe that this is instructed both at B&W and at Met Ed?

A It may have been. It has been awhile since I can definitely recall hearing that.

1908 212

Q That has not been repeated to you recently?

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A Well, recently I haven't really been down to the simulator in about a year and a half now.

Q And it was not instructed to you in your one-week training every six weeks?

A It may have been.

Q Do you know who would have instructed you as to this?

A Not necessarily an individual by name.

Q You don't remember any individual names?

A No. I don't remember an individual by name coming out and saying that.

Q What do you understand the conceptual foundation to be as to the concerns of going solid?

A I am not following you there.

Q Can you explain to me as to why in your training you would have received instructions for not taking the plant solid?

A Because, like I mentioned before, we don't want to go solid. We don't want to overpressurize. We don't want to have a rupture in the system.

Q And were the concerns of availability mentioned in connection with the consequences of taking a plant solid?

1908 213

A Not to my knowledge. What was most likely was

2.11

plant safety and environmental safety.

Q Can you explain that to me?

A If you have a rupture, you could have potentially radioactive coolant getting out of the primary system which could cause a radioactive problem.

Q And how would that happen as a consequence of a rupture?

A Well, it happened here in this last one, as a result of the steam relief valve being open, you got coolant into the building, and then somehow or other some of it got into the Aux. building and into the ventilation systems.

Q And you were instructed that that would be the result of taking a plant solid?

A I was told there is a possibility of that.

Q And do you remember who told you that?

A No, I do not.

Q The question of availability was never discussed?

A I can't recall a question of availability being discussed as a reason for not going solid. You do have a technical specification on it that does say, "You will not exceed a certain pressure."

Q And what tech spec is that?

1908 214

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A What the number was I really couldn't tell you, but they tell us not to exceed 2750 pounds, which is another reason for not wanting to go solid.

Q Was that explained to you in your training? Was a tech spec pointed to?

A We talked about them from time to time in our training.

Q Are you given copies of the tech specs?

A Yes, I have a personal copy of them.

Q Are you given copies of them during your training?

A We do receive them periodically in our training program. In our initial training we got the initial copies.

Q And are the tech specs integrated with FSAR's in your training?

A They could be.

Q Can you describe for me what in the tech spec was explained to you in connection with the discussion of the consequences of going solid?

A Not at the moment I can't recall exactly how it was put, but I'm pretty sure that they did want us not to go solid, one reason being our maximum pressurization limit.

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Q And the reason why they did not want you to take the plant over 2750 pounds of pressure was because you did not want that to result in rupturing?

A It was based on not exceeding the design plant pressure.

Q And the reason for that was?

A I would have to say that what they were thinking about at the time about not exceeding plant pressure was to prevent the possibility of a rupture.

Q And you say you believe that was the conceptural basis. Was that explained to you?

A We had talked about the bases for the tech specs.

Q In your training?

A In periodic parts of our training, yes.

Q Had you ever seen a plant go solid?

A No, I have not prior to this instance here.

Q Had you ever seen it on a simulator?

A No, I had not.

(Continued on following page.)

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Q What happened on the simulator when it went solid?

A The thing would just -- the computer would re-initialize.

Q What does that mean?

A The computer, at the time we were trained, was not designed for solid plant operation,and as such, when it went solid, the pressurizer, the computer just stopped and re-started all over on a new problem.

Q I would like you to look at what has already been marked as Frederick Deposition Exhibit No. 3.

A Okay.

Q Is this a section from the tech specs?

A Yes, it is.

Q And is that one of the tech spec sections that you would refer to concerning the limits for operating the plant that you were instructed to --

A This would be one of the sections, yes.

Q What would this tell you?

A All this is telling me is I have to keep steam bubble in the pressurizer, which means I can't take a solid condition.

Secondly, it tells me I have to have a certain

level in the pressurizer or certain volume, that is, water in a certain volume and a steam space in order to be operating in compliance with tech specs.

Q And would this tech spec have been covered in your training?

A I believe it would have.

Q Do you remember if it was?

A I can't remember specifically, but I am sure it must have.

Q Do you remember generally what they explained to you about this?

A Not right off the top of my head.

Q And if I understand this correctly, if the pressurizer does not have a steam bubble in it and has water volume exceeding this 240 to 1300 cubic feet, then you must be in a hot shutdown within 12 hours, is that correct?

A That is true.

Q And what was explained to you as to why you would have to be in a hot shutdown within 12 hours?

A Because you haven't really got good pressure control unless you have got a steam bubble in there.

Q And what does that mean?

A It means that you are not going for a given

amount of pressurizer heat constancy; you are not going to control pressure in the system as easily with a solid pressurizer as you would with a steam bubble in there. The pressure in the steam bubble is condensable, such that by spraying, you can reduce pressure in the system.

Q So that you are saying that you do not have as much control?

A No, by all means you do not have as much control as you have -- in a solid plant as you do in a steam bubble.

Q And what are the consequences of that?

A Small change in temperature could result in a large change in pressure.

Q Which results in what?

A It will all depend on which way you are going. It wouldn't necessarily result in anything major. It is a possibility that an increase in temperature, if you had a sufficient increase, would increase pressure to the point where you are above your safety limit, which is the 2750 I mentioned.

Q And what would that mean if you were above that?

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A It could possibly increase above that to the

point where you could have problems with the actual vessel integrity.

Q If you would also look at Frederick Deposition Exhibits 4 and 5 --

A All right.

Q Do you know where these operational modes, where these definitions as to operational modes on Deposition Exhibit 5 came from?

A Not really off the top of my head.

Q That is a table from the tech specs; is that correct?

A That is a table from the tech specs.

Q And you don't know the underlying basis for those figures?

A To tell you the truth, I don't comprehend, no, I don't.

Q Do you remember if that was explained to you in a training course?

A I really don't recall.

Q On Frederick Deposition Exhibit 3, they indicate limiting conditions for operation. Do you know where those limiting conditions come from?

A It would probably come from B&W specifications for the plant operation.

Q In designing the plant, they would set out limits to operate the plant?

A I would believe so, yes.

Q And pursuant to that, tech specs were drafted?

A Yes.

Q And in your B&W course, training course, was it explained as to why those limits were set?

A Some limits, I would say yes, it was.

Q Do you remember which limits were explained?

A Not totally.

Q Do you remember generally?

A We had talked some pressure and temperature limits and things of that nature.

Q Do you remember anything else?

A Not really.

Q Do you remember what they explained to you as to pressure and temperature?

A They explained to us what our pressure bands were and what our temperature bands were, and they did give us basic ideas of why we were trying to maintain in that area.

1908 221

Q Do you remember what they said?

A You had a certain minimum pressurization

temperature to keep from increasing pressure too high before your temperature was up, to keep you from having cladding trouble and rupture trouble, and you had maximum temperature limitations to prevent boiling in the core and things of that nature. You had minimum temperature limits, minimum pressure limits, to keep you from boiling in the reactor coolant system; basically things of that nature.

Q I would like you to look at an exhibit that has already been marked as Frederick Exhibit No. 2, please.

A All right.

Q This is entitled "Unit 2 Operating Procedure 2101-1.1, Nuclear Steam Limits and Precautions."

Could you explain to me what Limits and Precautions are?

A Limits and Precautions are issued by the manufacturer of the primary system to give us a guideline as to what parameters we must operate the systems at, in order to avoid damage to the components.

Q So that in the instance of the nuclear reactor, B&W manufactured that, correct?

A I believe so.

1908 222

Q They would have issued to you limits and

precautions as to operating that system?

A Yes, ma'am.

Q And who would have drafted these into operating procedures?

A That I am not really sure of at this particular moment.

Q You don't know who wrote Unit 2's Operating Procedure 2101-1.1?

A Not really.

Q Did you have any input into it?

A I had probably looked up certain pieces of it from the different specifications. I might have plugged some of those in, but other than that, I really don't recall having that much to do with it.

Q Do you know who at Met Ed would have reviewed the limits and precautions set by B&W?

A PORC would have, definitely.

Q They would have reviewed the procedures?

A Yes.

Q Do you know who would have reviewed the limits and precautions, prior to writing procedures, pursuant to those?

A Probably the person that originated the procedure, for one thing.

Q Do you know who that was?

A No, I don't.

Q Could you tell me what these limits and precautions in Operating Procedure 2101-1.1 provide?

A Like I mentioned, they provide guidance for operation of the equipment that is involved and covered by the procedure.

Q Will you look at Page 17 of Exhibit 2; would you explain to me what this is?

A What this is is a set of specifications for operation of the pressurizer.

Q And was this covered in your training at B&W?

A Yes. We had gone over that.

Q And do you remember what was explained to you as you went over this?

A Not every little detail. It's been some time.

Q Do you remember anything about it?

A Not specifically. I do know that we talked about pressurizer and operations of it.

Q Do you remember generally?

A Not verbatim what I may have been told.

Q But could you summarize what was told to you?

A It would be summarized right by what our document

here is indicating.

Q You don't remember anything outside of this document?

A I may have been, but I can't give you the call right off the top of my head.

Q Are there any times that it was explained to you that youcould go out of these limits and precautions?

A Not that I really recall. Like in the pressurizer tech spec which we had looked at previously, it said we had to meet those modes in Modes 1, 2 and 3. Other than that, we weren't required to be in a condition. However, we normally were.

Q Modes 1, 2 and 3 being power operation, startup and hot standby?

A Yes, ma'am.

Q So in all three of those modes, the only other three being hot shutdown, cold shutdown and refueling, you would have to be within these limits and precautions?

A That is affirmative. Otherwise, you are in violation of tech spec.

Q And instances were never described to you that you could deviate from these limits and precautions?

A Not to my knowledge. The only time we could deviate from these is so long as it isn't violating tech spec.

Q Would this Operating Procedure 2101-1.1 contain all the limits and precautions?

A I would say for primary system components that are designated therein, it would consist of all their limits and precautions.

Q And your training, whether it was at B&W or Metropolitan Edison, were you ever told of a history of failure of PORV?

A I really don't recall having been so addressed.

Q Do you remember at your simulator courses at B&W if you were ever told of a history of failure of PORV?

A Not to my knowledge.

Q In your training at Metropolitan Edison every six weeks when you go for a week, do you remember if you were ever told?

A I recall hearing a couple of times of the ones we have had here at the site.

Q Were you aware of a history of failure at other B&W plants?

A Not to my knowledge or recollection.

Q And what was the history at TMI 2?

A I had remembered hearing about one other instance in Unit 2 and one instance in Unit 1. That is all I recollect hearing of.

Q Do you remember when the incident was in Unit 2?

A I think it was back in 1978.

Q Do you remember when?

A Not right off the top of my head. It did result in other indications being provided in the control room, though.

Q And what was that?

A That was a light to tell us when the valve had a signal to open.

Q Prior to that, you did not have a light to signal that it was open?

A No, ma'am.

Q Do you remember if the incident at TMI 2 occurred on April 23, 1978?

A It possible. The exact date, I really couldn't give you.

Q You were not on shift when that happened?

A No, I wasn't.

Q Was that particular incident covered in

you training at Met Ed subsequent to that?

A I seem vaguely to remember hearing of it.

Q Do you remember what was covered with respect to that?

A The fact that it had apparently stuck in, and a modification was put in to take and change the indication scheme.

Q Do you remember who instructed you as to that incident?

A No, I do not.

Q Do you remember who would have recommended the change in the indication in the control room for the PORV?

A Not off the top of my head, no.

Q Did you ever discuss with anybody the April 23, 1978 incident?

A Outside of the training incident, the time it was brought up in training, I can't recall discussing it.

Q Did you receive any memos concerning that incident from anybody?

A Probably made it into the LER book, more than likely made it into there.

Q Other than reviewing an LER, did you receive any memos concerning it?

A I may have. I really couldn't swear to it one way or the other. At that time, I was probably in training for my SRO license, and I may not have seen it.

Q Do you remember if you talked about it with any control room operators?

A No, I can't recall whether I had or not, to tell you the truth.

Q At that time, you said you might have been in training for your SRO. Would that have been in a course that you were in training?

A That was in that study program I had referred to yesterday.

Q The self-taught study program?

A Yes.

Q Would that have taken you off your responsibilities?

A Yes. At the time, I was strictly under training.

Q So you were spending full-time in self-taught sessions?

A Yes, ma'am.

Q Wat were you taught in your training concerning small break LOCA?

A Well, first off, we were told what is designated

a small break LOCA versus a LOCA.

Q And was this at B&W?

A No, this was here on-site.

Q Were you ever taught anything at B&W?

A We had drills up there with a small leak, but actually coming out and talking about it, I really don't remember if I was or not.

Q And what were you taught at Metropolitan Edison concerning the difference between a small break and a loss of coolant?

A The major difference is that for it to be classified as a small break LOCA, you have to have a small break; in addition, we have to have loss of one of your ES busses and/or a loss of your one reactor coolant makeup pump. Other than that, it was just a LOCA.

Q And that was taught to you at Metropolitan Edison?

A Yes, ma'am.

Q And was that a change from previous definitions of a small break?

A I believe it was, yes. It was a change to the procedure. Initially, the procedure did not take and look at it from that aspect; it was strictly a loss of coolant.

Q Do you know who made that change?

A No, I do not offhand.

Q Do you know why that change was made?

A I am not really sure.

Q Was it explained to you as to why that change was made?

A It may have been.

Q You don't remember specifically?

A I can remember sitting down and talking about the change, and I can remember talking about the fact that a memo had come out recommending that we do make that change, but as of who put out the memo, or what the actual contents are, I really can't recall.

Q So there would have been discussion of that change outside of training?

A In and out of training. We had been required to take and do a small break LOCA drill once a month prior to the time of the accident.

Q Pursuant to these new procedures?

A Yes, ma'am.

Q Would you, as shift foreman, be the one responsible to see that that small break LOCA drill was performed?

A At the time the paper came out stating that the

drill was due, I would have to conduct the drill myself, either myself or the shift supervisor.

Q Looking at Federick Deposition Exhibit 9, is that the emergency procedure concerning a LOCA?

A That is correct.

Q Could you show me where the distinction is made in the emergency procedures concerning a small break and a LOCA, as you described it?

A Yes. There is something else here.

Here is where your distinction is made, right in this section here. It says, "Verify that small break LOCA with single failure symptoms exist," Symptoms 1 or 2.

You have your SFAS and only one makeup pump started, or loss of ES busses.

Q So it was explained to you only if these two symptoms existed would you turn to this particular Emergency Procedure 2.2.2?

A That is affirmative.

Q Could you show me which procedures you would turn to concerning the other kind of loss of coolant?

1908 232

A It would depend on whether we had a loss that could be handled by the operating makeup pump, or

whether we had to actually exceed that limitation for the loss. But as you have here, your first procedure in the file said, "Leak or rupture within capacity of the system." This would be our one -- if we had sufficient quantity with one pump to keep the system made up, then you would proceed further and you would have your second mode of loss of coolant, which would be such that the features actuation would actuate.

Q You are referring to Item B, correct, on Page 6?

A Correct. That is the second mode.

Q Are there other modes?

A The small break LOCA.

Q So there are only two kinds?

A Three.

Q What is the third?

A The first one I showed you here was the loss that was within the capability of the system. That is your first mode. We don't have any additional pumps or anything you have to start, to speak of, that you can notice a decrease in levels and such, but you can still handle it with one pump.

1908 233

Then the second mode is your mode that causes an

ES actuation due to low pressure, and then your third is your small break LOCA, which is actually a branch of your major ES actuation mode.

Actually, I would say there are two modes with a subsystem for the second mode.

Q And with respect to a LOCA as distinguished from a small break LOCA, they indicate symptoms, what are those symptoms?

A Well, as I read here, you have a low alarm for pressure; you have got your low low alarm; you have got your safety injection that actually comes in; you got your rapid continuing decrease in level, which you would see it just continues right on down; you would have your high radiation if it was a reactor coolant leak in the building; you would have your high sump level, and you would have your high reactor building pressure.

More than likely, I would definitely expect to see that one come in if you did have a good-sized rupture. And you would have rapidly decreasing makeup tank level because at the time you are losing your system, you would be pumping more water into it from the makeup tank initially, and then if your pressure got low enough, you would have both of your

core flood tanks come in.

Q All of these procedures are necessary for you to follow the emergency procedure for a LOCA?

A No, they wouldn't necessarily be available. Chances are you wouldn't have rapid enough decrease in core pressure, so you would see the core flood tanks come on. If you had a majority of these symptoms come in to you on the console, then you would reasonably assume that that is what you have.

Q Which one would you look to?

A Decrease in system pressure, decrease in pressurizer level, increase in the building pressure, and radiation alarms. Those would probably be key alerts that I did have a problem like that.

Q Was that explained to you in your training?

A It was explained in training, as well as being picked up along the way from operating the plant, as to what things you would see on a normal trip that would not necessarily be a loss of coolant.

Q And was that explained to you at your training at B&W?

A It may probably have been. I am not really recalling on that at the present.

Q Were you, in your training at B&W on the

simulator, were you ever asked to go through a transient that was not a specific emergency procedure covering that transient?

A To my knowledge, I really can't recall such an incident.

Q As you remember it then, they would give you transients that you could specifically pull an emergency procedure, whether it be in your head or actually pull the paper out that responded directly to symptoms as listed in those emergency procedures?

A That would be true. The whole purpose of the simulation section was to give us practice working with the emergency procedures.

Q In your classroom training at B&W, did they ever discuss how to react to a transient where there was not a direct emergency procedure provided?

A I don't really recall such training.

Q Do you remember such training at Met Ed?

A Not off the top of my head.

Q Do you remember if you ever discussed the possibility of encountering a transient that did not fall within a specific emergency procedure?

A In the event that we had an emergency that didn't fall within the scope of an emergency procedure, the

thing we would do would be to treat the symptoms, in other words, respond to what we were seeing in front of us. If pressure were decreasing, we would try to increase pressure, and vice versa. If pressure were trying to increase too rapidly, we would try to reduce pressure.

Q And was this discussed in your training at Met Ed?

A I don't really recall that it was.

Q But in your discussion with other control room operators or shift foremen, did you talk about this?

A We batted it around back and forth what we would do if something occurred that, you know, didn't really fit the textbook cases.

Q Was this a concern?

A I don't really recall that it was, due to the fact that the odds of something of that nature occurring were so remote.

Q So you felt that most of the incidents that you would encounter would be covered directly by emergency procedures?

A Yes, I felt that was the case.

Q Have you ever encountered a transient that

was not directly covered by an emergency procedure?

A Before the 28th, I really don't recall.

Q Do you know of anybody else who has?

A Not to my recollection. Again, I don't necessarily hear everything that is going on.

Q Were you trained on the B&W simulator as to the transient that involved a total loss of feedwater?

A I probably may have undergone that simulation at one time in my initial programming, but I don't recall the specific item, you know, as per when it was or anything of that nature.

Q Do you remember what you were supposed to do in a situation like that?

A In the event we lost emergency feedwater, I mean in the event we lost normal feedwater, the emergency feedwater pumps would come on, and that way we could control water at the low level limit.

Q Were you ever instructed as to what to do if both the normal feedwater and emergency feedwater failed to come on?

A I really can't recall that off the top of my head where we lost both.

Q So that as you remember, the instances that were covered in your training concerned loss of

normal feedwater with the emergency feedwater system coming on?

A I would say yes, that is true.

Q On March 28th, is it correct that after 4:00 a.m., you were in the control room at the panel concerning pressurizer level?

A Yes, that is true. I got up there approximately four minutes into the incident.

Q You were not in the control room when the incident happened at 4:00 a.m., right?

A No, ma'am, I was down in the basement of the turbine building.

Q Did somebody call you?

A I heard the word "reactor trip," "turbine trip," and I reported immediately to the control room.

Q And Mr. Frederick and Mr. Faust were in the control room?

A Yes, they were.

Q And was anybody else there?

A Mr. Zewe was.

Q Did somebody assign you to that portion of the control room panel?

A Mr. Zewe directed me to go over and take charge of that section.

Q He asked you to watch the pressurizer level?

A Yes.

Q And what was that pressurizer level telling you?

A Well, initially it was dropping, and then it leveled out after a normal trip, as I would normally expect it to, because after a trip you would cool down, and you would shrink the volume in the system, causing decrease in level.

But then we had, evidently just around the time I had got there, maybe a little bit beforehand, had a high-pressure injection which started additional makeup pump, which started feeding more quantities of water into the system, and at that point we observed the increase in pressurizer level at a pretty good rate, and we tried to correct for the increase in level to try and level off, prior to reaching the solid conditions by indication.

Q So that after the HPI injection, you saw an increase in pressurizer level?

A Yes, ma'am.

Q Did you relay this information?

A Yes, I did.

Q To whom?

A I just shouted out that everybody in the control room could hear at that time.

Q What did they do with that information?

A They asked me how fast it was coming up, and I told them it was coming up pretty fast. There wasn't much else they could do anywhere else that could take in turn what I had there.

Q And were you receiving any kind of a conflicting information as to the information you were receiving from the pressurizer level indication?

A I really can't recall any.

Q What does the pressurizer level indication tell you?

A Well, it tells me what kind of a level I have in the pressurizer itself. Since the pressurizer acts as a surge chamber for the rest of the primary system, it would tell me whether I am in danger of going solid, whether I am emptying it out, and possibly hitting low water in that part of the system.

Q Are there any other instruments or gauges that tell you the same information?

A Well, I have got pressurizer temperature and pressurizer pressure, which would tell me parameters

relating to the level indication. Also, I had my primary plant temperature and pressure in the same vicinity.

Q Were you reading those instruments?

A I was glancing from one to the other as I was trying to see what was coming about there.

Q And those instruments were telling you the same information that the pressurizer level was telling you?

A Not directly. Well, like pressurizer level was responding just about opposite of what pressure was doing. Pressurizer pressure was still coming up; however, pressure was still staying low.

Q Did that concern you?

A Yes, it did, because I didn't believe it should have acted like that.

Q How should it have acted?

A As pressurizer level was coming up, I would have expected to see pressurizer pressure and system pressure start to come up at the same time under normal conditions.

Q And did you inform anyone as to this?

A I believe I may have. I may have again shouted out, "Hey, this don't look right!"

Q And did anybody respond to you?

A I believe Bill came over and looked at it, Mr. Zewe. I am not sure though, because I was pretty much glued right there to see what I could do to control it.

Q And you indicated that you relied on the pressurizer level indication, correct?

A That and my other indication I had concerning the primary plant.

Q With respect to the conflicting information you were getting as to the measure of pressure and what the pressurizer level indication was telling you, what made you rely on the pressurizer level indication?

A I didn't rely solely on that; I relied on both or, well, most of my indication I had at the console there. I didn't rely on any one given piece of information.

Q Except you were receiving conflicting information, correct?

A Yes, I was.

Q And what was your conclusion as to what the conditions were actually?

A That I really am not sure to this day.

Q The information that you were receiving

from the pressurizer level indication, that you relayed to the other people in the control room, what did they do as a result of that information?

A That I am really not sure of because, like I say, I was pretty much tied down right at that one location.

Q Were you also relaying the information from the pressure and temperature?

A I more than likely may have yelled it out, what I was seeing there at that time.

Q So you were yelling out all the information, and you don't know which information was relied on; is that correct?

A No, I am not really sure, to tell you the truth.

Q You don't remember?

A I am not really sure; I don't really remember in regard to that, no.

Q So that your concern was that you were receiving conflicting information, and you were relaying that conflict information to the people in the control room?

A I believe I may have been.

1908 244

Q Were you consulted when the HPI was throttled back?

A I was right there at the time it was.

Q And did you do that?

A No, but I directed it done.

Q On what basis did you direct that it be done?

A To try and stop the increase in my pressurizer level, to try and prevent going solid.

Q And based on the reading of your pressurizer level, you were assuming what indications?

A Like I am not sure I am following you now.

Q At that point, what was the pressurizer level indicating to you?

A Pressurizer level at that point was indicating that it was coming up at a rapid rate, and was rapidly approaching your solid indication.

Q And what were pressure and temperature telling you?

A Pressure was holding constant at the present time. Temperature was holding fairly stable, to my recollection.

Q And you said that you directed throttling back the HPI, correct?

A That is affirmative.

1908 245

Q And that was based on your reading of the

pressurizer level indication?

A I believe it was, yes.

Q Did you confer with anyone when you directed that the HPI be throttled back?

A Not that I can recall. I was right with the person, right next to him.

Q Which was whom?

A I am not really sure at this time any more who was where, because some of the people did move around from one spot to another.

Q It would have been Mr. Frederick?

A It could have been one of the other two operators. Which one, like I say, I am not really sure any more.

Q Do you remember who you directed to throttle back the HPI?

A It was one of the operators. That is what I was just saying.

Q And that is the person that you conferred with concerning --

A Yes. I told him what my concerns were about, going solid, and I would like to have it cut back somewhat, so I could take and reduce that possibility.

Q Had you ever seen the pressurizer level indication go high?

1908 246

A Not to my recollection, no.

Q Had it ever gone low?

A I must have seen one channel fall low at a time, but I can't really recall a specific incident.

Q Had the possibility of pressurizer level indication going high ever been discussed in your training?

A It may have, but I really don't recall specific material as far as that is concerned.

Q You were, based on your reading of the instruments that you had in front of you, you indicated that the pressurizer level was high, correct?

A Yes.

Q And was the reactor coolant pressure low?

A It was considerably lower than what normally would be, but it was not continuing to drop.

Q It was low but was stable?

A Yes, I would say low and stable.

Q And is that usual?

A No, it is not usual.

Q And did that concern you?

A In some ways it probably did. It would have concerned me a heck of a lot more if it was still going down.

Q What did you think it was telling you?
A I am not really sure of what it was telling me at that time.
Q Did you consult with anyone?
A I had mentioned that the pressure was low but it was stable. I don't recall who I mentioned it to in particular.
Q Did you attempt to analyze why you were getting two conflicting readings like that?
A In a time like that, there really isn't time, usually, for analyzing each little piece of information on a timely basis.
Q So is it correct to say that because reactor pressure was stable, even though it was low, that you decided to rely on the pressurizer level?
A I treated my symptom of the pressurizer level because it looked like pressure was stable, and I wasn't having a problem with it dropping continuously.
Q And because of that, you made the decision that HPI should be throttled back?
A Based on the high level in the pressurizer, yes, I did go that route.
Q On March 28th, within the first four hours of the accident, do you remember which emergency

procedures were pulled?

A I can only remember myself pulling, when I come up to the control room, the turbine trip and the reactor trip procedures. There more than likely were other ones pulled, but those are the ones that I personally remember being pulled.

Q And those were pulled because the initial indications were that there was a reactor trip and a turbine trip?

A Yes, ma'am. I come up to the room, and as soon as I come up to the room, I myself pulled out those procedures so that I could cover and make sure that the people had performed all the immediate actions.

Q And you did that?

A Yes, I did verify that they had performed the immediate actions of the turbine trip and the reactor trip.

Q So as far as you can remember on March 28th, those were the only two actual procedures that were pulled, correct?

A Those are the only two that I myself pulled. I don't know what other people may have pulled or may not have pulled.

Q You were not aware of others?

A I am sure some other procedures must have been pulled, but like I say, I myself, personally I don't remember pulling them myself.

Q Do you remember any others that were pulled?

A There could have been a loss of feedwater pulled out. Other than that, I am not sure of what other ones might have been pulled out.

Q Which ones did you remember in your head that you called on?

A I remember calling on the turbine trip, reactor trip, and that is about the only ones that I really called on, over on the primary side there. There may have been others, again, that somebody else hit on, but as of myself, I hadn't.

Q So that morning, you do not recall pulling, from memory, any other procedures?

A In a time like that when you have got an incident of that magnitude, you do a lot of things that you do not really recall personally doing. I am saying that I personally did not have the procedure in hand, but I may have acted in accordance with the procedure. In fact, I am sure that I did.

Q Do you remember which procedures that maybe you did not pull the exact written copy of the procedure

but that you remembered relying on from memory?

A Well, I am sure we worked with the ES procedure because we had to take and clear off the ES signal in order to take manual control of the system. I more than likely had been acting according to the loss of coolant procedure or loss of pressure.

Again, it is a case where you are in the middle of things like that. You do things that come to you from -- how do I want to say it -- long use and long practice. You might not necessarily refer, word for word, to this or this or this, but you react according to what your symptoms are without really being totally alerted to your doing this.

Q You indicated that from memory you relied on the loss of coolant pressure?

A I may have.

Q Do you remember what symptoms you saw that you pulled that procedure out of your memory?

A At the present time, it has been a while, and I can't really recall what may have triggered what in my mind.

Q Looking at Frederick Deposition Exhibit No. 9, which is the emergency procedure dealing with loss of coolant, could you look at the symptoms in A

and tell me what symptoms were there?

A Initially, we did have a reduction in coolant pressure, we did have a reduction in pressurizer level until it got turned, at the time of high-pressure injection, at which time I saw pressurizer level coming back up. I might have concluded that -- my mind might have concluded that, "Hey, it didn't look like we had a problem as far as a leak was concerned," and then I might have proceeded back on another track of thinking.

Again, I can hardly say what was actually triggering my mind against what I actually did.

Q Do you remember if in your mind the emergency procedure concerning loss of coolant was the one that triggered --

A No, I couldn't really say because, you know, like I am saying, at a time like that, you do what you are seeing ahead of you, and you don't just sit there and say, "Oh, mercy sakes, I got a loss of pressurizer level there" or "Mercy sakes, look, pressurizer pressure is going down. I have got to refer to Emergency Procedure blah-blah-blah." Your train of thought, just doing work like that in a situation of that nature, you just see a symptom and

you try to correct for what that symptom's problem is, and it does relate back to education on the emergency procedures, but per se, in the initial actions, some of them you can do it that way, but some of them you really can't react that way.

Q You indicated that there is an operator that is assigned to be a small break LOCA operator, correct?

A I didn't indicate that, but yes, there is.

Q Who was that operator on the morning of the 28th?

A Per se, I cannot really recall that particular incident. It would have been one of the two control room operators and one auxiliary operator.

Q And that particular operator would only have been concerned with analyzing symptoms concerning the small break LOCA, as distinguished in the emergency procedures?

A From the other types of LOCAs, yes.

Q Do you know if that analysis was done?

A No, I do not, ma'am, because at the initial stages, it didn't look like we even had a leak.

Q At what point did you realize there was a leak?

A Exact time, I really couldn't say, but it was some time later from the time I got up there. Initially, we thought we had trouble with our steam generators, and that that might have been our problem, and as a result, that overclouded in our minds what it turned out to be, a leak from that relief valve.

Q And what indicated to you that you did have a leak?

A To me? Nothing indicated it to me. I had heard at a later time, after the accident, that the man had noticed after he stopped feeding he was still increasing level, which would have indicated a primary-to-secondary type leak.

Q After he stopped feeding what?

A The steam generator. Of course that is hearsay.

Q He still was having --

A An increase in generator level.

Q And who would that have been?

A That, again, I am not sure on specific names as to who did what. A lot was going on at the time, a lot of different people were doing a lot of diffe: things.

Q So what was your area of responsibility?

A My area of responsibility was at the primary

plant pressure control station.

Q And were you just in charge of analyzing those instruments and relaying information with respect to that?

A And to correct the situation as best I could. Anything I said concerning any other station would be strictly from a hearsay basis, and I would have no real, how would I say, knowledge of what actually was happening here or here, except for what I had heard. So I couldn't really determine what some other person had said or what some other person had done.

Q Were you in the control room when the PORV was discovered to be open?

A Yes. I myself isolated the valve on direction from another supervisor who had come in fresh and thought he had spotted what might possibly have been a problem.

Q And who was that?

A I believe that was Brian Mehler.

Q And he directed you to close the safety valve?

A He suggested that I try closing the safety valve and see if that stopped the problem.

Q And did he explain to you why?

A At the time, again, things were hectic, and I don't recall anybody giving any long in-depth explanations of why we were doing much of anything.

Q Did you agree with him?

A I thought it wouldn't hurt to try it, at which time I closed the isolation valve, and pressure started coming up again.

Q Did you ever receive an instruction that morning that you did not agree with?

A I can't really recall it. Most of the time when I was given an instruction, I pretty much agreed with what was being tried to be accomplished, and I pretty much went along with all of the instructions I had been given, which weren't really that many at the early stages.

Q Do you remember an instruction that you did not agree with?

A Not off the top of my head, to tell you the truth, unless it was maybe stopping the reactor coolant pump.

Q And were you instructed to stop the reactor coolant pumps?

A I was not instructed to stop them, but I was in the vicinity at the time.

Q When somebody else was instructed to do that?

A Yes.

Q And you thought that was not a good suggestion?

A I wasn't sure whether it was a good decision or not. I won't come out and say I thought it was a bad decision, because at the time, we were showing all the indications that we should have stopped it; our vibrations were high on them, we were indicating that the amperage was low on them, indicating that they weren't pushing much flow, the flow indication was low on them. If it all came down to it, I myself probably would have suggested shutting them down, but at the time, I wasn't really sure until I had gotten the other information.

Q Did you articulate your concern?

A Until I got the indication that, yes, we were in a condition that showed that yes, we should have had them off, I said, "Are we sure we want to do this?"

Q To whom did you say that?

A I can't really recall who it was at that time, myself.

Q Do you remember what response you got?

A I was informed that our vibrations were high on them, and our flow was indicating that it was dropping off, amperage was low, we were, by all means, looking like we were possibly going to damage the pumps, at which time then I myself thought, "Well, it would be a good idea."

Q Do you remember that morning who was giving you instructions? Was it Mr. Zewe?

A Bill was there for most of the whole problem, and I do believe that most direction that I did get came directly from Mr. Zewe.

Q And there were times that he left the control room?

A Yes, but that time I believe there was another supervisor that was up in the control room. Which one it was, again, I am not really sure. There were so many people at the time, that for me to try and turn my back away from the panel which I was supposed to be watching and see who was there would have been a bad move.

Q Did Mr. Zewe ever leave you in charge that morning?

1908 258

A Not that I can recall. He didn't directly come up and say, "You have got it. I have got to check

on such-and-such."

Q So as far as you can recall that morning, when Mr. Zewe left the control room, there was another supervisor that was there in charge?

A I am reasonably sure that is true.

Q There was never a time that he came up to you and said that you were in charge?

A No, there wasn't. He told me to man the pressure control station and stay with it and act accordingly.

Q And up until what point did Mr. Zewe remain in control that morning?

A He remained in control of the plant evolution even after the unit superintendent arrived on the scene. The unit superintendent took care of the other activities, and Mr. Zewe continued to maintain plant conditions.

Q So that once Gary Miller came on-site, Mr. Zewe still remained in control of the plant operations?

A That is true.

Q And until what time did you remain in the control room?

1908 259

A I remainedin the control room at the pressure control station probably to around noon, at which

time I myself went into the auxiliary building for a tour.

Q And who directed you to do that?

A I had been directed by a supervisor, I can't recall which one at the present time, to go in and check the position of a certain valve.

Q Which valve was that?

A It was our auxiliary spray for decay heat removal system.

Q And did you then report back to the supervisor?

A Yes, I reported to him that due to the bulky airpack and such I was wearing, I couldn't get into the vicinity of the valve.

Q Because you were too awkward with all that?

A Yes.

Q And what did he do?

A He accepted what I told him.

Q After you returned to the control room, then, what were your responsibilities?

MR. YUSPEH: Off the record.

(Discussion held off the record.)

SR 7

A Okay, from the time I reported back to the control room, I was pretty much at loose ends waiting for whatever else somebody might need done.

Q You did not go back to responsibilities on the panel?

A No, I did not from that point on.

Q And then until what time were you in the control room?

A I was in the control room until about 5:30 or 6:30, until I went home, somewhere in there.

Q Yesterday we were talking about the hydrogen recombiners.

A Yes.

Q And can you explain to me, first of all, what actually the recombiner does.

A Okay. What the recombiner does is, in the presence of an excessively high temperature, as a catalyst, it will take and combine any hydrogen that is in the building that comes through the recombiner to form water and thus to eliminate hydrogen.

Q Was this utilized on March 28th?

A No, not on that date. I don't believe it was put into service until the following week sometime.

Q But it was operable on the 28th?

A Yes, it was capable. It would have been a matter of going into the building and lining up a couple of valves, and also making a hookup, going from the piping system to the recombiner.

Q Going into which building?

A Aux and Fuel-Handling Building. At the time it was in a fairly high radiation area. That was probably the purpose it wasn't initially put on, the limit of exposure.

Q Whose decision was it to put it into operation?

A That I am not sure of. It was put in when I wasn't here, if I recall right.

Q On the morning of the 28th, was there a recommendation to put it into operation?

A Not that I heard of, because at the time we didn't think we had a hydrogen problem at all. We didn't really feel we had any need for putting it in service.

Q And you had no input into the decision to put it into operation?

A No, I did not. It was one of those things that, I come back on shift one day, and it was in operation.

Q Had it ever been utilized prior to March 28?

A It had not been used, other than for surveillance testing on it, as I described yesterday.

Q That was the only time prior to March 28th that it was utilized?

A There had never been a need to utilize it in the past.

Q As I understand, March 28th, there were numerous alarms that went off that morning, correct?

A Yes, ma'am.

Q Could you give me an approximate number of how many?

A I would say it would be probably in the neighborhood of somewhere around 200 in the initial time frame.

Q And was there a decision made as to which alarms to attend to first?

A Exactly, I really can't say on that because at the time when most of the alarms initially came in, it was just prior to my arriving up in the control room. They were still flashing when I came up there, though, and as far as which ones were to be treated first, or any nature like that, I pretty much went by intuition.

You get to see certain alarms come in that are not alarms that you would expect to see: You would probably tend to look at those a little bit before

you would look at some that you had a feel for why they were lit.

Q Are these sight or sound alarms?

A You see visual lights flashing, plus you have a single buzzer-type tone. Well, it is actually more like an electronic siren-type thing that goes off in the control room when any of the alarms are lit.

Q So this would have been a continual sound alarm?

A Yes.

Q Plus the flashing alarms?

A Yes.

Q And the particular alarms that were flashing and warning were the ones that were brought to your attention first?

A That is possible. Like I was saying, most of the alarms were already in when I arrived at the control room, quite a few of them. As to which ones in particular anybody was really looking at, I really am not too sure on that.

Q So in your responsibility, you did not focus your attention on those alarms?

A Not myself, no. As soon as I came in, like I was saying, I took up those two particular emergency

procedures out of the book, and then I was directed to go right to the pressure control station.

Q How soon into the transient did you realize that this is an abnormal transient?

A I would almost have to say about the time when pressure came down and level was going up. I would say that was the point that I had never seen before.

Q And at what point in period of time would that have been?

A I would say that it was early into it. The exact time, like I'm saying, it is hard to really relate because the thing was strange to us. These were things that we thought were occurring in a minute's time, and it was probably happening in something like eight to ten minutes.

Q You are talking about within the first 15 minutes?

A I would say probably maybe within the first hour or so. Again, I could be mistaken along the line of time because the events that were occurring tended to make time seem different than what it actually was.

Q Could you explain to me what your authority as a senior reactor operator is to exceed the limits and precautions set out in the operating

procedures.

A Under normal circumstances, we would not exceed the limits and precautions. Under all circumstances, we would not exceed limits and precautions to the point that it was less conservative than the tech spec in issue. Whatever the tech spec required, that was our dead band.

Q Even in emergencies?

A Even in emergencies, we were required to remain within tech spec limitations, or else, if it had gone out of tech specs, get it back into range.

Q So in certain instances in emergencies, you would exceed the limits and precautions?

A It is possible you might.

Q And in that instance, what would your decision be based on as to what action to take?

A First off, I wouldn't go in purposely trying to violate a limit and precaution without first explaining the problem in hand that I was aware of to my supervisor. Then we would talk it over and make our decision based on what the plant problem was and whether we were actually going to violate something.

Q And that is what you were instructed to do?

A Yes. I would not take any action that would

violate a spec or a limit and precaution without bringing it up with my immediate supervisor.

Q Were there instances that you did violate a limit and precaution after consulting with your supervisor?

A I really can't recall any such normal spec where the limits and precautions were such a range that we couldn't stay within them without too much difficulty. I can't purposely remember ever violating one intentionally.

Q Are there times when you are faced with a situation where you ha to make a judgment decision?

A I would say yes, there are times.

Q As to whether or not to exceed a limit and precaution?

A In that case, no. I wouldn't really have it left to my judgment because there normally is somebody that would be more superior than me that could assist me in that decision.

Q And you can't think of an example of where you would have been in that particular instance where your judgment was required in consultation with your supervisor?

A No.

Q In respect to whether or not to exceed a limit and precaution?

A Not in that respect, no.

Q In your training, was there ever a discussion as to a situation which you would be faced with which would involve exceeding a limit and precaution?

A Not to my recollection.

Q In informal conversation with the control room operators, did the subject ever come up?

A Not that I can recall, because, as I said, most of our limits and precautions were proposed in such a way that we could stay within them without actually running into trouble or violating them.

Q Did the operators, control room operators, articulate to you any concern with the operation of the PORV?

A At present I can't really recall any, other than the fact that that they were talking about if we did have a leak and how we would control pressure, and we were concerned that continuous operation of the relief isolation valve might cause it to stick. But other than that, I can't recall any problems that were brought up to me in regard to operating them.

Q Continual operation of the safety relief

valve?

A Isolation valve.

Q Isolation valve would cause what to stick?

A The valve in itself has the possibility that it could stick. Any valve, if you operate it enough times, could tend to malfunction for you.

Q And what was their concern based on?

A Just the fact if we had to operate it for any extended period of time, we would be running that risk.

Q And this was based on the fact that the PORV was leaking?

A We knew it was leaking at the time. Prior to the accident, it was leaking.

Q You knew that the PORV valve was leaking?

A We knew that one of the three reliefs were leaking. We didn't really know which one.

Q And since you knew that one of the three relief valves were leaking, your concern -- or a concern was raised as to the possibility that the isolation valve would stick if used a lot?

A If we used it a lot, we were concerned, you know, at the time prior to the incident -- we had no consideration of even using it unless it got so bad that we had to try and isolate to see if we could

isolate it.

At the time when that was brought up, it was a concern, after the incident when we were trying to control pressure, after we had determined that the valve was the problem that was reducing our pressure.

Q Were you ever trained to be concerned that the PORV would not work when its setpoint was reached?

A I hadn't been aware that it wouldn't.

Q You hadn't been trained to be concerned about that?

A We had talked at times, it seems, on malfunction of the pressurizer system, but I can't recall a specific instance about the PORV not lifting.

Q Do you remember what instances you were talking about concerning operation of the pressurizer system?

A We had talked about our emergency procedure concerning what we would do if the thing would lift and we couldn't get it to reseat, which would be strictly isolating it.

Q Was this just general discussion?

A Just general discussion amonst the crew.

Q The control room operators and you?

A Yes, myself and other control room operators might have been in at the time.

Q And do you remember what you talked about specifically?

A Not specifically, except that we talked about if the thing did lift and it didn't show any signs of reseating, we would more than likely take and isolate it.

Q Did you talk about the concerns with any of your superiors?

A They were aware of the problem at the time, that the thing was leaking, and there was always a possibility that it might proceed to the point where we might need to isolate it.

Q Did you articulate your concerns to them as to the fact that you might have to use the isolation valve?

A Not really, because the word came down to us to be apprised that we might have to use it. You see, we were aware that the thing was leaking, and we couldn't at that time get in to fix or stop the leak. So I forget who was telling us this or anything, but I'm sure it came down from above that they considered we might have to isolate that sometime in the future.

Q You don't remember from whom you heard?

A No, or even the exact time or the consistency of the message or anything; just that it was to be borne in mind that if it did get worse and lift and didn't seat, we should isolate.

Q Do you remember if this was received in a memo form?

A No, I can't even recall that at the present time. This was a considerable time ago.

Q Six months prior to March 28th?

A That I couldn't even really say.

Q You indicated that you could not get in to fix the leak of one of these three valves.

A At the time, no.

Q Why is that?

A Well, at the time, we were up in power. The pressurizer sits right in the reactor building, and at the time of power, you have got pretty high radiation levels inside the building.

Q So the only way you could fix that --

A If we were to have a cold shutdown and de-pressurize it.

Q Were you ever told as to the concern that the PORV might not reseat after it had lifted?

A I really, per se, hadn't had any direct

communication. In fact, I hadn't heard of any problems with it not reseating except for a Unit 2 incident in April, as you had it in the document of '78, and then other than that, I hadn't heard of any other problem associated with it until after our problem.

Q What effect does going solid have on availability of the plant?

A Well, really, I am not in a position to answer a question of that nature by reason that we had never been solid before, and to my knowledge, nobody else has maintained solid conditions for any period of time.

It is something that is normally not done. You really have no grounds for what it would do to availability. You know that you are not going to be operational as long as you are solid.

Q So based on the reasons that you have been reviewing as to why you don't want to go solid, what effect would it have on availability?

A You would be shut down if you were solid for that period, according to the tech spec.

Q A cold shutdown?

A Hot standby, at least.

Q And how much time are we talking about?

A Twelve hours, by that tech spec. If you are

out of it with the steam bubble, you don't have that, or if you are higher or lower than what your specific level indication is, within 12 hours, if you can't get it back, you will be on hot standby.

Q And --

A Or hot shutdown -- I'm sorry.

Q How long would you have to be in hot shutdown?

A The spec gives you 12 hours.

Q Within that 12 hours you have to be in hot shutdown?

A Yes.

Q How long would you remain in hot shutdown?

A That would depend on how soon afterwards you got permission to go back into operation again, after you found what your trouble was and corrected it.

Q Do you know about how long it takes to get back into a normal mode after being in hot shutdown?

A That could vary, depending on what kind of trouble you have with your secondary plant bringing it up. Sometimes it might take you a couple of days to go from a hot standby condition up to 100 percent power.

You have certain plateaus that you have to wait at during the startup for various other things.

Q You indicated that on March 28th, somebody had informed you that you should close the isolation valve on the PORV, correct?

A YES.

Q And you don't remember who that individual was?

A I believe I told you it was Brian Mehler.

Q When it was realized that the PORV was open, you realized that you had a LOCA, correct?

A At that point I would say yes.

Q And at that point, did anybody turn to the emergency procedures addressing a LOCA?

A At that point, upon closing of the isolation valve, we no longer had a LOCA.

Q Once you realized that the PORV was open, do you know if the emergency procedures concerning a LOCA were addressed?

A I personally don't know. At that time, I myself was engaged on the panel and carried on as I would have by shutting the isolation valve.

Q So the only involvement that you had with the issue that there was a LOCA was the fact that Brian Mehler instructed you to close the isolation valve?

A Yes.

Q You did not have input into the decision or the process that determined that there was a LOCA?

A At that time it was -- I am trying to think of how to put this -- at that time it was the last thing that we were lookin, at, to close that isolation valve. We had looked at various other points in the system to see if we had problems there, and we found out that it was in there, and it was pretty much as the last resort that we shut the isolation, that that request was made.

Q But did you not have any -- you were not consulted concerning the analysis?

A There was no analysis. Mehler came up and said, "Let us try shutting the isolation valve," and I reached up and shut the isolation valve.

Q So far as you know, on the emergency procedures concerning the LOCA, you were not consulted?

A I don't really know. I do know that the man came up and says -- they might have been consulted to a point where we thought we had a steam generator problem, a leak there, but at the point where we shut the valve, to my knowledge, Brian came up and says, "Let us try shutting the isolation," and I says, "Okay."

and I reached up and shut it.

Q Could you explain to me what "feed and bleed" means?

A Feed and bleed, that is a means that we have of changing the boron concentration in the primary plant.

What it consists of is, if you are deborating a plant, already reducing your boron concentrati n, you will be adding demineralized water into the primary plant at the same time you are removing reactor coolant back to the tank, and it is a means of taking and reducing your concentration, or you can do it the other way and increase the concentration.

Mostly for an increase in concentration, though, you just shoot boric acid right into the makeup tank, and then it goes into the system.

For an increase in boration, you normally don't need to feed and bleed. You do that strictly for the deboration evolution.

Q And could you explain to me what the various levels of boron concentration do?

A Well, it varies with core age. At the beginning of core age, you need a relative higher concentration because you have got more fuel available at that time.

As the core life increases, you need an ever-reducing concentration in order that you can even bring the plant up on the line.

In other words, if you took the same boron concentration at the end of life as you did at the beginning of life, you couldn't even start the plant up because you would have all that excess negative reactivity.

Q What does the boron do?

A What it is is a poison. It moderates the neutrons in the core. It slows them down, such that they can be captured by fuel and by other components in the vessel.

Q So at the beginning of life, you want higher concentration of boron?

A True, because you have more excess positive reactivity at the beginning of life.

Q And from where is the boron concentration controlled?

A Where is it controlled? It is controlled right up in the Unit 2 control room.

What we do is we have our makeup system panel, where we have a batch feeder that we can feed in so much boric acid, or we can feed in a mixture of boric

acid and water, or we can feed in just water, depending on what our requirements are at the time.

Q And are there emergency procedures that cover the feed and bleed?

A No, that would be covered under the normal procedures, normal operating procedures, because it is a normal evolution that we would be bleeding and feeding periodically.

Q So there is not an emergency procedure that covers feed and bleed, just an operating procedure?

A Yes, it is not an emergency condition to bleed and feed.

Q And this boron concentration level, is that something that is covered in your everyday surveillance?

A What we do is, we have got a periodic sample drawn off for plant boron concentration, and when they get that boron concentration, we always take and compare that with the core effective full power days, and from that we have graphs in the control room, so that we take and convert that into what our boron concentration should be for where we are. Then we would make our changes in the system concentration.

Q So there is a surveillance required by

the tech specs?

A Yes. Chemistry is required to be drawn periodically.

Q And who draws that?

A The chemists.

Q And do you know how frequently, about?

A Not off the top of my head. I think it is either daily or every three days.

Q And they notify you as to the concentration level?

A Yes.

Q And do they recommend to you what action you should take as a result of that reading?

A Only if it is a drastic amount away from where it should be.

Q But they report to you?

A They would report the concentration to me, at which time I would, or my operators would compare it to what our curve reads, and we would know what our concentration should be for the time and life where we were.

Q Is this a daily readout that you get?

A I believe we get the boron samples every night, and then from this can take and see. We get a daily

printout on effective full power days, and then we compare the two.

Q And based on your comparison, you determine what action you should take?

A Or whether we need to even take any action.

Q If you needed to take any action, would somebody else have to review that?

A Not necessarily. I could direct a boron change.

Q You would just direct the control operator to take a specific action?

A From the procedure. Well, I would normally, if I had all my supervisory people on day shift, I would tell my immediate supervisor, "Well, we have got this condition existing. I am recommending this."

Then he would say, "Yes, go ahead."

But normally you don't have to make a boron change every day. You might not have to make a boron change for a whole week or two weeks at a time.

Q When you do need to make a change, does this require your supervisor to approve that change?

A Not necessarily. If I can get the word -- he might have left word for me on the shift before that I need to make a change during the course of the night, or I might spot a condition, at which point I am capable

of deciding whether, well, yes, I can take and make this boron decrease, or whatever.

Q On March 28th, did you have any contact with people from the NRC in the control room?

A I personally did not. My job for that day was up at the panel.

Q Normally, prior to March 28th, what was your contact with Gary Miller?

A What was my contact with him?

Q Yes.

A Periodically, he would call us all together for a staff meeting or a foreman meeting or whatever and tell us whatever he thought we needed to know of what was happening as far as plant progress and things of that nature.

Then, periodically, he would come up to the control room, and you would see him there. He would ask questions about plant status and things of that nature. Normally, I didn't see him like every day, day in and day out, that type of thing. I would see him periodically, mostly.

Q How regularly would he have staff meetings?

A He tried -- well, as far as meetings that I would be involved in, I couldn't say-- as far as staff

meetings -- because most of the staff meetings I didn't attend because I wasn't supposed to be there.

But as far as meetings with the people, he tried to hold them roughly on at least a six-week basis so he could field any problems that the people themselves seemed to have.

Q The meetings that you attended, who else would be there?

A Mostly other shift foremen.

Q Would it be just shift foremen?

A It could be shift supervisors. It could be any number of people.

Q Were control room operators ever at those meetings?

A I really don't believe so.

Q And what kind of things would he cover in those meetings?

A He would ask if anybody was having any problems. It would be more or less a problem solution meeting and also a statement of what our goals were for the immediate future and things of that nature.

Q And did you ever raise any problems at these meetings?

A I might have at times, but I really can't recall

any specific ones.

Q Do you know if minutes are kept of these meetings?

A That I am not sure of myself, either.

MS. GOLDFRANK: I would like to request, if minutes are kept of these meetings, that we be provided with copies of them.

MR. YUSPEH: Off the record.

(Discussion held off the record.)

MS. GOLDFRANK: Also, if any handouts have been made by Gary Miller, we would request those also.

THE WITNESS: That again, I think there probably would not be any to speak of.

Q Prior to March 28th, what was your contact with Mr. Logan?

A He was at the time working toward becoming unit superintendent. I didn't see much of him. I might see him in passing, from time to time, but that was about it. I had no real discussions with him.

Q And what was his position at that point?

A I believe he was working toward becoming unit superintendent at the time. He had the job, but he was more or less in a break-in period.

Q What job was he in at that point?

A Just like I described, he was in a break-in period on that unit superintendent job.

Q From what position?

A He had just come in for that job. He had come in from the outside.

Q And when did he come in?

A That I really can't recall.

Q Was it a couple of months before?

A I am not really sure.

Q Who was in his position prior?

A Gary Miller himself was.

Q What was your contact with Mr. Kunder?

A Occasional; not usually that much. I would see him, and I would say "Hi" to him and things of that nature. Every once in a while, he would come up with some questions pertaining to plant operation or whatever. Other than that, I really didn't have that much contact with him.

Q And Mr. Floyd?

A Well, him I had a little bit more contact with. I see him more frequently. Again, it would be questions of any problems I had in the course of the shift or things of that nature. He was more or less my boss

over Bill Zewe at the time.

Q So he would just come in and check in?

A He would check in and see what problems I had had. But mostly he would talk to Bill more than to me.

Q Were you on any committees at TMI 2?

A Not to my knowledge.

Q Was there at procedure at Met Edison concerning handling safety concerns that arise?

A Handling safety concerns?

Q Yes.

A There is one that we have got that is called our "switching and tagging procedure." I would assume that that is what you are referring to.

A No. If you raised a concern that is safety-related, how would you go about handling this?

A The normal channel is I would contact my immediate supervisor. If he wasn't available, I would contact the safety representative directly.

Q And who would the safety representative be?

A That would be Earl Gee on-site here.

Q He is a safety representative?

A For Met Ed.

Q For Met Ed?

A Yes.

Q Who is he?

A He is our on-site safety man.

Q Concerning what kind of safety?

A Any accident possibilities, like loose floorboards or anything like that, and any accident that transpired, we would report in to him, things of that nature, mostly personnel safety.

Q If you had safety concerns with respect to operation of the plant, not personnel safety, who would you report those to?

A As far as safety of the plant, you are referring to like somebody getting hurt due to a piece of equipment that is potentially ready to fall apart or something?

Q No, safety concern of the operation of the plant.

A The equipment itself?

Q Right.

A That would be reported back to my direct supervisor.

Q And is there a particular form that you would fill out?

A Not that I am really sure of. We would possibly fill out a work request if the piece of gear was

broken or looked like it was going to break. Then that would go through the maintenance channels, and then we would have somebody take a look at it and make the repairs.

But if it was something as far as operating a piece of equipment in a way that it could possibly cause problems, that I would bring up with my immediate supervisor that I have a problem with it.

Then I might possibly fill out a Temporary Change Notice or something to that effect to try and correct the situation.

Q Can you give me an example of any time that you did raise a safety concern with your supervisor?

A I never really, to my knowledge, raised one, except with the concern of the pressurizer heater control cabinet location. That one I can remember I talked to him about. I don't remember the exact time, but I do remember raising a concern of where it was located, that any steam leak in that room would take and wipe out pressurizer heater control.

Q And do you remember how he responded to that concern?

A He went to his immediate supervisor, I would have to assume. I really don't know for sure. But he agreed

with me that there was a problem associated with it.

Q Was any change made?

A At the present time, no, not to my knowledge.

Q Do you remember when you made this comment?

A Oh, a considerable time ago. Probably when we were first getting staffed over there.

Q So prior to TMI 2 going critical?

A Yes. I believe it was definitely beyond that.

Q And would this have been an oral concern that you expressed?

A This was an oral one that I mentioned orally.

Q You never wrote a memo on it?

A No, not to speak of.

Q And would you have been a control room operator at that time?

A At that time, yes, I was a control room operator.

Q Do you know if anybody else articulated this concern?

A I really can't say for sure, but I understand a lot of people have been talking about it. I really can't like say, "Well, So-and-so did, and So-and-so did," but I am sure somebody else must have.

Q And did you ever raise it again with any of your supervisors?

A I might have at other times later, but again, as far as timewise, I really couldn't say.

Q But your concern was never responded to?

A I really -- let us just say that the change wasn't made. I am not sure that it was ignored, let's just put it that way.

Q Can you explain what you mean?

A I'm sure that other people felt the concern that I felt for it, but at the time, it was possibly inconceivable to really do anything about it. For what reasons, I wouldn't have any control of that.

Q Did anybody ever tell you that it was inconceivable to do anything about it?

A At the time, I can't recall any specific individual, but I did understand that they couldn't change it at the time for some reason or other, which I am not familiar with.

Q You don't remember what reason they told you?

A No.

Q Concerning those surveillance procedures, there is a procedure covering the valve switch positions?

A Each position has a valve lineup associated with it.

Q So that in the course of the surveillance, the position of the valve would be checked?

A It would all depend on which surveillance. Some surveillance calls strictly for valve lineup verification. Some of them require that you change position of certain valves in order to perform the surveillance.

Q And are those requirements set out in the tech specs?

A That is covered loosely by saying that a component shall be operable, including all of its associated instrumentation and valving.

Q So that the exact procedure as to how you check each valve is set out only in the operating procedures?

A Like I say, for your tech spec-related systems, there are surveillance procedures which do cover valve lineups of various systems.

Q But that is set out in the operating procedures?

A That is the tech spec surveillance procedure and operating procedure. For instance, nuclear services river water system, we have got a normal operating procedure which has a valve lineup associated

with it. There is also a surveillance tech spec required that is a nuclear services river water valve lineup verification, in which you would go through a valve lineup to determine that everything is where it should be.

Q And with respect to the surveillance procedures, which I believe we discussed yesterday, that you received computer printouts, and pursuant to the computer printouts, determine which surveillances should be done and make assignments to the control room operator, correct?

A Correct.

Q And then they would report back to you as to which procedures they had completed and the results from those?

A I would have those in my personal possession on completion of them because I have to take and review them and sign them myself upon completion.

Q And you check to see that they have performed the procedures?

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A I would check the procedure to make sure that the surveillance item had been performed, that all the data was in the proper ranges, and that the form was completely filled out.

Q You indicated earlier that certain surveillances are done differently. I believe you said that some you actually have to switch the valve, and in others, you just check it, correct?

A Yes.

Q In the computer printout that you get, is it indicated which surveillance has to be done?

A What we have on the computer printout is it gives you the date that the surveillance is due, and it gives you a date that the surveillance would be late by, and then underneath that, it gives you a number for surveillance, a procedure number. This procedure number, when referred back to our file drawer, will tell you just what you have to do to perform the surveillance, whether it be to run a valve lineup on the system, or whether it be to do an operational check on this system.

Q So that you don't know whether or not, by looking at the computer printout that you have, whether or not a particular valve is checked by merely checking its position or actually switch it? 1908 293

A Not by the computer sheet itself. All that will tell us on there is it will give us the procedure number and give us the title of the procedure, such

as nuclear services river water lineup valve verification, which would correspond to a certain procedure number. All that would tell us is that this one here requires a valve lineup to be done, whereas another one, if it presented, might give you a procedure number and might say, "Operational test of nuclear river pumps."

Then you would go to your procedure, and that would tell you what you had to do to perform that surveillance.

Q So when you review these, you just look to make sure that there is a check by that particular surveillance; you do not know whether or not that surveillance was done pursuant to the particular procedure?

A We take, and when I hand out the procedure, the data sheet, to the control room operator, he gets a copy of the procedure and staples right to the computer sheet. Then they perform the surveillance per that data sheet and per that procedure.

When it is given to me, it would still have the procedure with it.

Q The only way you would know that it was performed pursuant to that procedure is by a check

next to it?

A By initials.

Q By initials?

A Yes, when each step was performed.

Q And they initial that each step was performed?

A That is affirmative by the procedures, and also by the completed data sheet at the end of it.

Q And what type of information would that have been?

A It would depend on what type of test you are running. Some surveillance tests might only require that you write down the time that a certain piece of equipment was in operation, the length of time. Others might require data like pump discharge pressure, flow rate and things of that nature. It varies by the surveillance.

Q I would like you to look at something that has already been marked as Porter Exhibit 2. (Handing document.)

A Yes.

Q Have you ever seen that?

A No, I don't recall ever seeing this paper.

Q Have you ever seen similar papers like that?

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A Not that I can really recall. I don't recall seeing "Current Events - Power Reactors" before.

Q You don't recall seeing that particular one, or you don't recall seeing any of those?

A Anything by this title, I don't recall seeing in the past.

Q Prior --

A This is the first I have seen it.

Q You do not receive these.

Q When you were drafting or helping to review operating procedures for Unit 2 when you initially came here, did B&W have input into those drafting procedures?

A Some of the procedures -- well, I really don't recall that they did or didn't, to tell you the truth. All I know is I would be given an assignment to work and would be told to take and check this procedure for accuracy and see if it could be operated that way, and hand in a list of comments. That would be about as far as it went, as far as I was concerned.

Q You never had any direct contact with people from B&W concerning drafting those procedures?

A No, ma'am.

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Q In your training, do you remember if you

were ever instructed as to instances where there would be voiding in the core?

A We had heard that voiding was possible, but nothing was really dwelled on in any degree as far as the effects of voiding in the core or what would cause it or things of that nature.

Q Would this have been at your training at B&W?

A Both there and here, if I remember correctly. What we had been told is we want to keep below a certain departure from nuclear boiling ratio, so that we wouldn't have voiding. That is about the extent that I can recall.

Q Was it explained to you as to why you did not want to have that?

A It may have been, but again, it is not really too clear in my mind whether the explanation was given or not. I would assume that they did give us an explanation along the terms that if we had voiding in the core, when we had lack of moderation in here, and we would have problems as a result of that.

Q Do you remember who in particular instructed you?

A No, ma'am.

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Q And you don't remember whether it was at B&W or here?

A It could have been both. Related to that subject, though, in the theory behind operation of a pressurized water reactor is that you should never have voiding to begin with, whereas in a boiling water reactor, that operates on a certain percentage of voiding. And that may have resulted in why it may not have been gone into in as great a detail as it could have.

Q Why would that theory have been articulated to you?

A That I wouldn't really be sure of. I wouldn't really know.

Q Do you remember if it was in training at B&W?

A No, I really can't remember. But that is probably a principle behind, you know, the operation of a boiling water reaction. You do have voiding; it is intention. But the thought, at the time we went through training, is that in a pressurized water plant, we do not have voiding except very minor amounts.

Q And were those thoughts as to the pressurized water reactor articulated to you in your training?

A They may have been, and they may not have been. I really am not positive at this time.

Q Is your position a union position?

A No, ma'am, it is a management position.

Q A management position?

A Yes. The highest union position would be control room operator.

Q Could you tell me if you knew of instances prior to March 28th when there had been drinking in the control room?

A There has never been drinking in the Unit 2 control room to my knowledge. It is strictly forbidden.

Q Do you know of instances where alcoholic beverages were brought into the area of the control room?

A Not to my knowledge. Had I found out about something of that nature, I would really have raised a mess out of it. That is one thing I feel strongly against. No, ma'am, I can proudly say there wasn't.

Q Do you know if there were any alcoholic beverages in the area of the control room?

A No, ma'am, there weren't, not to my knowledge.

Q Do you know of any instance where somebody was in the control room and was intoxicated?

A Not to my knowledge.

Q And on March 28th, do you know of anybody that was in the control room that was intoxicated?

A No.

(Discussion held off the record.)

Q Would you agree to allowing the President's Commission to request a copy of your personnel file from the Navy?

A If I thought it would serve a particular purpose, which I really don't see what purpose it would serve.

Q Well, we would be interested in looking into the actual training while you were enlisted in the Navy. We would be happy to provide you with a copy of what we received, and after we had reviewed it, would send you back the copy that we did receive.

A I would have no problem with that, considering that it didn't necessarily become a matter of public record out in who knows what newspaper.

Q No, we would keep it.

A If I could be assured of that, I wouldn't have much trouble with it. I have nothing to hide.

MR. ROCKWELL: Off the record.

(Discussion held off the record.)

MR. ROCKWELL: While we have been off the record, we have been discussing the question of confidentiality of the personnel Navy records of Mr. Faust and Mr. Frederick and Mr. Sheimann and Mr. Zewe. The Commission would like to have an opportunity to review those files. At the same time, we would prefer not to take possession of documents on which there is a request that we keep them confidential. Simply in fairness to you, we don't want to run the risk, after we go out of existence, of the documents being inadvertently released.

Therefore, I would suggest that the request for them be signed by yourself, if you are willing, and Mr. Faust and Mr. Frederick, as they have already said they would, and that it be submitted to the Navy, and that the documents be returned directly to Shaw, Pittman, where we can have access to review them, but possession would be retained by Shaw, Pittman, at least for the time being, unless there appears to be a need for our having physical control of them, at which time we would resume the discussion on how to handle them.

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But in the interim, I would ask that be held by Shaw, Pittman, and that we would be able to review them there during normal business hours, and in that way, their confidentiality would be preserved, but we would have access to them. Is that agreed, as far as you can tell?

MR. YUSPEH: Off the record.

(Discussion held off the record.)

MR. ROCKWELL: Let me elaborate on my previous statement by saying that the concern has been raised as to the fact that if we have access to the documents, even without possession, that that does not provide any assurance of the context that it might not become public.

What I have suggested to Mr. Yuspeh is that the process of obtaining the records go forward so they can be available to Shaw, Pittman, and that we reviewing them once they have become available, and that you certainly reserve all rights with respect to not only use of the material but review of the material. We will discuss that as we go down the road.

MR. YUSPEH: I see no reason why the arrangement that has been described by counsel

for the Commission is not acceptable at this time, with the understanding that any acceptance of the documents by the firm which represents Met Edison Company would not create any greater discovery of these documents on the part of the Commission than might now exist with the documents in the possession of the Department of the Navy.

MR. ROCKWELL: That is agreed to.

BY MS. GOLDFRANK:

Q You have made statements concerning the accident at Three Mile Island on March 28, 1979, is that correct.

A Yes.

Q We would like to request copies of all those statements or transcripts that have been made of those statements. I would like to try to compile a list of the statements that you have made, as you can remember them. You were interviewed by the staff at Three Mile Island, correct?

A Correct.

Q There was a March 30, 1979 interview by Mr. Long and Mr. Reppert?

A Yes.

Q Was that the only interview that you had

with TMI staff?

A To my knowledge, yes. The rest was all NRC or else Commission or the Senate Subcommittee.

Q Do you remember the date you were interviewed by NRC?

A NO, not off the top of my head. I could look at my file at home that has all my copies of my transcripts, and I could get them from that.

Q Do you remember who from the NRC interviewed you?

A Various people. I have talked to more than one or two individuals.

Q Do you remember what division they were in?

A Not off the top of my head, no. I have talked to so many people here in the last few months that I have a hard time remembering who I did talk to.

Q On May 10, 1979, you were interviewed by the staff of the President's Commission, correct?

A Yes.

Q And on May 30, 1979, you appeared at a public hearing of the Commission?

A Yes, ma'am.

Q And on May 11, 1979, you appeared before the Subcommittee on Energy and Environment of the

House of Representatives?

A Datewise, I am not sure, but I did appear before them.

Q You just appeared once?

A Once.

Q And other than the interviews given out to NRC, were you interviewed by anybody else aside from the TMI staff, the President's Commission, and the Udall Committee?

A Not that I can recall.

MR. YUSPEH: Does that mean you don't need anything further?

MS. GOLDFRANK: No, we do not have copies of the NRC interviews.

(Discussion held off the record.)

MS. GOLDFRANK: At this time, I have no further questions, and I would recess this deposition with the understanding that it may be at some future time you will be called back for further questioning, although at this time we do not anticipate that.

(Continued on Page 239a.)

(Whereupon, at 12:05 p.m., the deposition was recessed, as above noted.)

Frederick Joseph Scheimann, Jr.

Subscribed and sworn to
before me this ___ day
of _____ 1979.

Notary Public

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24	Memo from J. R. Floyd to shift foremen and shift supervisors, Unit 2, dated May 25, 1975 re: Memo 2-7811, Reactor Coolant 2 Pump Operations	130
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STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

We, STANLEY RUDBARG, Certified Shorthand Reporter and Notary Public, and STEPHEN McCRYSTAL, Notary Public, of the State of New York, do hereby certify that the foregoing continued deposition of METROPOLITAN EDISON COMPANY by FREDERICK JOSEPH SCHEIMANN,JR., was taken before us on the 25th day of July 1979.

The said witness was previously duly sworn. The said testimony was taken stenographically by ourselves and then transcribed.

The within transcript is a true record of the said continued deposition.

We are not related by blood or marriage to any of the said parties nor interested directly or indirectly in the matter in controversy; nor are we in the employ of any of the counsel.

IN WITNESS WHEREOF, we have hereunto set our hands this 25th day of July 1979.

STANLEY RUDBARG, CSR.

STEPHEN McCRYSTAL

(Whereupon, at 12:05 p.m., the deposition was recessed, as above noted.)

Frederick Joseph Scheimann Jr.

Frederick Joseph Scheimann, Jr.

Subscribed and sworn to before me this 7th day of August 1979.

George J Troffer

Notary Public

GEORGE J. TROFFER
Notary Public, Reading, Berks Co.
My Commission Expires Jan. 25, 1982

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Q And depending upon how complicated the incident was would dep nd how well the computer worked?

A It would depend on how far backlogged it kept. It would all depend on how many things are logged at the same time.

MS. GOLDFRANK: Let's break for today.

(Whereupon, the deposition was recessed at 6:50 p.m.)

Frederick Joseph Scheimann Jr

Frederick Joseph Scheimann, Jr.

Subscribed and sworn to
before me this 7th
day of August
1979

George J. Troffer

Notary Public

GEORGE J. TROFFER
Notary Public, Reading, Berks Co.
My Commission Expires Jan. 25, 1982

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PRESIDENT'S COMMISSION ON THE
ACCIDENT AT THREE MILE ISLAND

Corrections to July 24, 1979, Deposition of Frederick J. Scheimann

Page	Line	Change	To Read
7	6	PRODUCER-TYPE	PROTOTYPE
10	17	1968	1969
70	13	Co	CRO
176	13	PRESSORE	LEVEL

Frederick J. Scheimann
Frederick J. Scheimann

Subscribed and sworn to
before me this 7th day
of August, 1979

George J. Troffer
Notary Public

GEORGE J. TROFFER
Notary Public, Reading, Berks Co.
My Commission Expires Jan. 25, 1982

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