UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

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GENERAL PUBLIC UTILITIES CORPORATION, :
JERSEY CENTRAL POWER & LIGHT COMPANY,
METROPOLITAN EDISON COMPANY and :
PENNSYLVANIA ELECTRIC COMPANY,
:
Plaintiffs, :
:
-against- 80 Civ.1683(R.O)
:
THE BABCOCK & WILCOX COMPANY and
J. RAY McDERMOTT & CO., INC., :
:
Defendants. :

- x

Deposition of Plaintiff GENERAL PUBLIC UTILITIES, by ANDRE J. DOMINGUEZ, taken by Defendant, pursuant to subpoena, at the offices of Davis Polk & Wardell, Esqs., One Chase Manhattan Plaza, New York, New York on Tuesday, August 17, 1982 at 9:20 a.m., before Nancy A. Rudolph, a Shorthand Reporter and Notary Public within and for the State of New York.

WALTER SHAPIRO, C.S.R.
CHARLES SHAPIRO, C.S.R.

DOYLE REPORTING, INC.
CERTIFIED STENOTYPE REPORTERS
369 LEXINGTON AVENUE
NEW YORK, N.Y. 10017
TELEPHONE 212 - 867-8220

Appearances:

KAYE, SCHOLER, FIERMAN, HAYS & HANDLER, ESQS.
Attorneys for Plaintiffs
425 Park Avenue
New York, New York

BY: STEVEN J. GLASSMAN,

of Counsel

DAVIS POLK & WARDWELL, ESQS.
Attorneys for Defendants
One Chase Manhattan Plaza
New York, New York

BY: ANN McDONALD, ESQ.,

of Counsel

Also Present:

EDWARD HILL

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IT IS HEREBY STIPULATED AND AGREED by and among the attorneys for the respective parties hereto that the sealing, filing and

certification of the transcript of the within deposition be, and the same hereby are waived; that said transcript may be signed before any Notary Public with the same force and effect as if signed before the Court; and that all objections except as to the form of the question, are reserved to the time of trial of this action.

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A N D R E J. D O M I N G U E Z, having been first duly sworn by a Notary Public, testified as follows:

EXAMINATION BY MS. McDONALD:

Q Please state your name for the record.

A Andre J. Dominguez.

Q Where do you live?

A 254 West Fourth Street, Bloomsburg, Pennsylvania 17815.

Q Mr. Dominguez, you are appearing here

today pursuant to subpoena, is that correct?

A That's correct.

Q And you are represented by Mr. Glassman of Kaye, Scholer?

A Correct.

MS. McDONALD: I would like to mark as B&W Exhibit 908 the resume of Mr. Dominguez.

(Document consisting of one-page resume of Andre J. Dominguez, was marked B&W Exhibit 908 for identification.)

Q Mr. Dominguez, is this a resume you prepared in order to come to this deposition?

A Yes.

Q Is it an accurate and complete resume of your job and education history?

A Yes.

Q I see you went to Pennsylvania State University. What did you study there, what was your major?

A Bachelor of science, mechanical engineering.

Q Did you take any physics courses while at Pennsylvania State?

A Yes.

Q How long did those courses or that course last?

A I took a total of five physics courses. Each course lasted approximately three months.

Q Did you take any course specifically directed at nuclear physics?

A No.

Q Did you take any course which included as part of what you were being taught some nuclear physics?

A Yes.

Q What was the name of that course, if you can recall?

A I don't recall the name.

Q Did you learn in that course about how a pressurized water reactor works generally?

A No.

Q When was the first time you were told anything about how a pressurized water reactor works?

A In 1966.

Q And that was while you were in the Navy?

A When I was in the Navy, yes.

Q While you were at Penn State did any of your training include discussions of thermodynamics?

A Yes.

Q Did you learn about -- generally about -- concepts of heat transfer and fluid flow?

A Yes.

Q Did you learn that the boiling point of water rises as pressure is applied to water?

A Just a minute. Yes.

Q And you learned that while you were at Penn State?

A Correct.

Q Or before that?

A Both places.

Q You learned that also in high school, I take it?

A I don't recall.

Q Have you taken any courses since being at Penn State of any sort?

A No.

Q Other than at your various jobs, I take it?

A That's correct.

Q Did you learn about a concept called "saturation" as it relates to water and steam while you were at Penn State?

A Yes.

Q What did you learn at Penn State on that subject that you can recall?

A Basically that while in the saturated condition, temperature and pressure are dependent upon each other.

Q What do you mean by that, "dependent upon each other"?

A While in the saturation state the temperature will be constant for a particular pressure. The opposite is also true.

Q You went into the Navy in 1965, did you have any training there?

A Yes.

Q What was the first position that you held in the Navy?

A I was a naval recruit, E-1.

Q What were your job responsibilities when you first went into the Navy?

A I didn't have any.

Q Were you being trained?

A That's correct.

Q What training did you receive?

A In that position I went to basic training,

boot camp, and after we graduated from boot camp we went on to the next rank.

Q In the course of your approximately six years in the Navy, you I take it held various positions?

A That's correct.

Q Can you give me the highlights?

A Yes.

MR. GLASSMAN: Would you just like the names of the positions or some more detail?

MS. McDONALD: As we go through the names of the positions, I would like to know what that job entailed.

A The best way to describe this would be that for the first two-and-a-half years in service I underwent training. At that point I then held the position of a machinest mate. A machinest mate is one responsible to maintain mechanical equipment. I also was an engineering laboratory technician, the ELT as they call it. I was responsible for the health physics, chemistry portions of the nuclear power plant.

As a machinest mate I was also a mechanical operator on a nuclear plant trained, and he does basically the same things that a machinest mate on a

fossil plant would do, and that being maintaining the mechanical equipment, running, repairing, et cetera.

Q What nuclear plant was that?

A It was the USS GREENLAND submarine.

Q Was that the only nuclear ship that you served on?

A That's correct.

Q Mr. Dominguez, were you ever involved while in the Navy in the operation of the primary system of a nuclear reactor?

A No.

Q Did you receive any training while in the Navy with regard to how a nuclear reactor works?

A Yes.

Q You mentioned that for the first two-and-a half years approximately you were in training.

Can you describe what kinds of courses you had with relation to nuclear reactors? I don't want to hear about boot camp, but tell me about the nuclear courses that you had in the Navy.

A Okay, from what I can recall, we were instructed as to the basic operation of the S5W type submarine which is a pressurized water reactor system.

We also received training concerning

radiation. Basic thermodynamic principles, basic nuclear physics, mathematics, chemistry. That's all I can recall.

Q In the course of learning about thermodynamic principles, did you learn about heat transfer and fluid flow in a pressurized water reactor?

A I cannot recall the specifics, but heat transfer and fluid flow are things that I can recall the terms being used during those periods of time.

Q Were you trained in the Navy that the water in a pressurized water reactor is on occasion maintained at a temperature substantially higher than 212 degrees Fahrenheit?

A Yes.

Q Were you taught why it was that that water didn't boil?

A The water in a pressurizer always boiled.

Q I am referring to the water in the reactor coolant system other than in the steam space in the pressurizer.

A If I understand the question correctly, you are asking why didn't the water in the reactor coolant system itself boil?

Q What I think we can all agree to is the atomospheric boiling temperature of water?

A Yes, they explained that to us.

Q What did they say?

A The reason why the water would not boil in the reactor coolant system is because the pressure was maintained above the saturation temperature of that water.

Q How were you taught that that pressure was maintained?

A With the pressurizer.

Q Were you taught that it was necessary to keep a steam bubble at the top of the pressurizer in order for it to fulfill its function of keeping the steam pressurized?

A Yes.

Q Based on your training in the Navy, was it possible to control pressure in a pressurized water reactor with no bubble at the top of the pressurizer?

MR. GLASSMAN: Perhaps I don't understand the question, but that seems to be the same as the last question you asked.

MS. McDONALD: Let me explain.

Q What I mean by "control" is raise the pressure or lower it in a planned way without a bubble at the top of the pressurizer.

MR. GLASSMAN: I have the same objection. I think it's the same question. The witness can try again if he wants to.

A Yes, I would like to clarify.

Pressure can be raised and lowered in a controlled fashion without a bubble during other than normal operating periods. During operating periods the method that we utilized and were instructed was to control the pressure in the primary was the pressurizer.

Q When you refer to raising or lowering pressure with no bubble in the pressurizer, could you explain what you were referring to?

A Yes. You can raise the pressure in the primary system if it is solid, that being the pressurizer is also full of water, by increasing the pressure with high pressure pumps.

Once you raise the pressure utilizing that kind of method, you can also lower it by draining the water off.

Q Did you learn in the Navy about what I

will call solid system operation of a pressurized water reactor?

A Not that I can recall.

Q When you were in the Navy, did you ever see a solid system and by solid I mean completely full of water, the whole RCS including the pressurizer completely full of water?

A I don't recall ever seeing that situation.

Q Based on your training in the Navy, if you had a solid system, the whole RCS and the pressurizer full of water and you turned on the high pressure pumps as you just described them and started pushing water into the system, would you expect a rapid rise in pressure?

A Yes.

Q After you left the Navy, you went to Metropolitan Edison, is that right?

A No, I went to Penn State.

Q You went back to Penn State? I'm sorry, I misunderstood you before.

A No, I went to Penn State after I left the Navy.

MS. McDONALD: Off the record.

(Discussion off the record.)

Q You went to Metropolitan Edison in 1975, is that right, Mr. Dominguez?

A That's correct.

Q And from 1975 through some point in 1976, you were an engineer level 1, is that correct?

A Correct.

Q What were the responsibilities of engineer level 1?

A I would like to talk about my responsibilities.

Q That's what I would like to know about.

A The primary job that I had during that period of time was a scheduler, and I worked on the scheduling of the two major outages of Three Mile Island.

Q Refueling outages?

A One was a reactor coolant pump seal outage, the other was the first refueling outage.

Q During your first year at Metropolitan Edison, did you receive any training?

A Yes.

Q And what training was that?

A I received a systems course. I believe that was the extent of that first year. It was a

systems course.

Q After that year did you receive further training at Metropolitan Edison?

A We are talking from the period of time from '76 to '78?

Q Why don't we just do it this way: Why don't you describe to me after the systems course what further training did you have at Metropolitan Edison until you left Metropolitan Edison?

A The other training which I received was a, we will call it a TMI-2 systems course which was given in preparation of being a shift test engineer.

Q How long did that training last or was it ongoing or what?

A Approximately three months, two hours a day.

Q Do you remember anything you learned in that course?

A Yes.

Q Were you told anything about thermodynamics?

A I don't recall addressing thermodynamics in the courses.

Q Once you became a shift test engineer,

did periodic on-the-job training go on?

A No.

Q Do you remember any of the people that taught this course on TMI-2 systems?

A Yes.

Q Can you name the ones that you recall?

A Myself, Craig McMullin, John Ulrich, Jack Garrison.

Q Was there a Mr. Hawkins?

A Hawkins.

Q What was his position at that time?

A Assistant test superintendent.

Q All of these people were GPU or Metropolitan Edison employees, is that correct, the people you have named?

A Yes, that's correct.

Q Did you know a person named Nelson?

A Max Nelson, yes.

Q What was his position?

A I don't know what his position was.

Q Do you know who he was employed by?

A General Public Utilities.

Q Did you learn anything in this course about procedures?

A I don't recall that specific topic.

Q Did you learn anything about how a pressurized water reactor works generally?

A Generally, yes.

Q Did you learn about how pressurizer, learn more, I guess I should say in your case, about how the pressurizer works?

A Yes.

Q Did you recall anything that you were told about how the pressurizer works in a pressurized water reactor?

A I can't specifically recall the things that were instructed to us at that time.

Q Did you know a fellow named M.J. Perry?

A I don't recall the name.

Q How about Carl Gatto?

A Yes.

Q Who is Mr. Gatto?

A Mr. Gatto was a startup test engineer.

Q At GPU?

A He was an employee of GPU.

Q R.R. Lentz?

A Yes, I recall the name. He was an I&C expert, that being instrumentation and control. I

believe he was also employed by GPU.

Q Steve Poje?

A Yes, I recall Steve. He was also a startup test engineer.

MR. GLASSMAN: Can we take a short break?

MS. McDONALD: What is the purpose of this?

MR. GLASSMAN: I would like a one-minute break.

MS. McDONALD: To coach your witness, Mr. Glassman? This is ridiculous, Mr. Glassman. You just walk out of the room!

(Recess taken.)

Q Mr. Dominguez, prior to coming to this deposition were you asked to look for documents which might relate to this case?

A Yes.

Q Did you do so?

A Yes, I did.

Q And did you turn over to your lawyers everything that you found?

A Yes.

Q Several notebooks have been produced to us by Kaye, Scholer, Mr. Dominguez' attorneys. There

are four notebooks. I wonder, Mr. Dominguez, if you can identify those for us as documents that you turned over?

A Yes, these are the documents I turned over.

Q Did you turn over any other documents?

A Yes, I turned over an entry in my personal log that discussed a very brief conversation with an NRC person.

MS. McDONALD: Mr. Glassman, I specifically requested any notes that Mr. Dominguez had of conversations with the NRC. I asked Mr. Eickemeyer for those things last week, and he tried to produce them, and I do not have them and I specifically said to him I will ask Mr. Dominguez this.

It will certainly save time if you produce them and we can call Mr. Eickemeyer right now. He specifically agreed to this.

MR. GLASSMAN: Ms. McDonald, perhaps, there has been a problem with the mails or something of that sort. I am familiar with the file, and I had understood that Mr. Eickemeyer or someone else from our office was forwarding it to you. I can make a call,

but if not I happen to have a copy of that document anyway and would be more than happy to produce it for you here now.

MS. McDONALD: But you are not objecting to its production?

MR. GLASSMAN: No, as is our policy, when you make a specific request for a document if we can locate it we will produce it and we will be glad to do so here as well.

MS. McDONALD: Well, I would appreciate its production. Thank you.

MR. GLASSMAN: Off the record.

(Discussion off the record.)

MR. GLASSMAN: Although I believe that this has been produced, so as to avoid any misunderstanding we herewith produce a copy again.

MS. McDONALD: Mr. Glassman, I am sure you intended to produce it. I am sure it was not produced, but I thank you for producing it now.

BY MS. McDONALD:

Q Mr. Dominguez, what are those documents, generally?

A They are lectures that were prepared by the people who taught the TMI-2 systems courses.

Q Did you turn over anything other than those documents and the personal log entry that we just discussed?

A No.

Q In the course of this systems course, did you have any training in transient response?

A Not that I can recall.

Q Were you ever asked to review any operating emergency procedures for either TMI-1 or TMI-2?

A I don't recall ever being requested to do that.

Q You said that you taught some part of this course. Can you remember what you taught?

A Yes.

Q What was that?

A The types of lectures which I prepared and taught were concerning support systems to the plant, some examples would be Ammertap.

Q What is Ammertap?

A Do you want this on or off?

Q I have no idea what they are. Just describe them generally.

A The Ammertap system is a water cleaning system. They inject tiny little sponge balls into the circulating water system. They pass through the tubes and scrub the tubes as they pass through. We collect the balls at the end and recirulate them into it.

Q Did you ever teach anything about the condensate polishers? You know what I am referring to?

A Yes. I don't recall.

Q Have you ever received any licenses, by that I mean control room operator or senior reactor operator licenses?

A No.

Q From 1976 to 1978 while employed by Metropolitan Edison you were a shift test engineer at TMI-2, is that correct?

A Yes.

Q Did Metropolitan Edison run the startup and test program at TMI-2?

A No.

Q Was that run by GPUSC or GPU?

A Yes.

MR. GLASSMAN: You are asking this witness either or, the question unclear.

Q Who did run it?

A GPU.

Q Did Metropolitan Edison loan GPU personnel to assist with the startup and test program?

A Yes.

Q How did that come about?

MR. GLASSMAN: Are you asking for this witness' knowledge of how other people reached such a decision or are you asking him what he was told?

MS. McDONALD: I am asking what he knows about why Met Ed personnel were working for startup and test from whatever sources he knows it. Obviously, if he knows it he must have been told it.

MR. GLASSMAN: Are you now asking generally or of Mr. Dominguez?

MS. McDONALD: Generally. You are looking for his knowledge, you are not asking him to guess?

MS. McDONALD: No, I don't want him to guess. I just want to know if he knows.

A I don't know what was involved into the actual decision to have that come about.

Q When in 1978 did you leave Metropolitan Edison and go to Pennsylvania Power & Light Company?

A Approximately September.

Q And your position at Pennsylvania Power & Light beginning in 1978 and up to the present day is power production engineer, is that correct?

A Not completely. In 1978 I had the position of power production engineer and I have been promoted to the position of senior project engineer.

Q What does a senior project engineer do, what do you do as a senior project engineer?

A I am responsible to resolve problems that arise in the residual heat removal system and I manage 16 engineers.

Q The Susquehanna Steam Electric Station, what kind of plant is that, it's not a nuclear plant is it?

A Yes, it is a nuclear plant.

Q What kind of a nuclear plant?

A It is a boiling water reactor.

Q Do you recall being trained at Metropolitan Edison as to what the normal operating level of the pressurizer was?

A I recall that there was a normal operating

level in a band to operate between.

Q Do you recall that that level was approximately 220 inches?

A No.

Q Do you recall that it was 400 inches?

It was less than 400 inches, wasn't it?

A It was less than 1000, it was greater than zero. I don't recall.

Q Do you recall how many inches the pressurizer level could have an indication in TMI-2?

A No, I don't recall.

Q Do you recall in any of your training up to the time you left Metropolitan Edison, and by that I am including the Navy and Penn State and all your training, hearing of the concept of flashing as it relates to water and steam?

A Could you rephrase that. I'm sorry. I don't need a rephrasing. The question again, did I recall being --

MR. GLASSMAN: Could we have the question reread?

(Question read.)

MR. GLASSMAN: I am going to note an

objection as to form.

THE WITNESS: Would you reread the question again?

MS. McDONALD: Why don't I ask it again.

THE WITNESS: No, I can answer the question.

Q Up to the time you left Metropolitan Edison, have you ever heard of the term flashing?

A Yes.

Q What did it mean to you?

A Flashing to me means turning liquid into vapor.

Q Up to the time you left Metropolitan Edison, have you ever heard that flashing could occur in the primary system of a pressurized water reactor in a place other than the pressurizer?

THE WITNESS: Could you reread that, please?

(Question read.)

A I don't recall.

Q Since the Three Mile Island accident, have you ever testified under oath apart from today?

A No.

Q Have you ever been interviewed by

anyone in connection with the Three Mile Island accident?

MR. GLASSMAN: Are you talking about apart from conversations with counsel?

MS. McDONALD: Oh, yes, apart from conversations with counsel.

A No.

Q After the Three Mile Island accident were you ever interviewed by anyone relating to anything at Three Mile Island?

A No.

Q Have you ever heard of a Mr. John Craig of the NRC?

MR. GLASSMAN: Are you asking up until today?

MS. McDONALD: Yes.

MR. GLASSMAN: Obviously counsel is reading from a document which we just turned over, a particular note there.

MS. McDONALD: Well, obviously Mr. Dominguez knows about his interview with the NRC, and I am trying to figure out what game is being played here.

MR. GLASSMAN: Let me interrupt,

Ms. McDonald, I thought you were going to try to express some question here. I think Mr. Dominguez told you a little earlier that he did receive a phone call from someone at the NRC.

We have just produced another copy of this document a few moments ago. Perhaps you could clarify this by asking him whether that was an interview.

BY MS. McDONALD:

Q I would like to know why you have excluded an interview that you apparently had on the phone with the NRC from your answers to the last two questions?

MR. GLASSMAN: Objection. There has been no basis established that there was an interview. I mean, if you would like to ask him whether he had an interview --

MS. McDONALD: Let's mark as B&W 909, the document that has just been produced which Mr. Glassman so desperately wants to put before the witness.

MR. GLASSMAN: It's up to you. I think we are wasting time. You are getting into a semantics game. It's obviously a document that

you are placing before the witness which begins, "Received a call from John Craig (NRC)." And you can ask the witness any questions you want, but I hope we don't get caught up in a sematics game.

MS. McDONALD: It is not I who is being caught up in a semantics game.

MR. GLASSMAN: You can ask any questions you like.

MS. McDONALD: Can we mark that document as B&W Exhibit 909.

(One-page handwritten document marked B&W Exhibit 909 for identification.)

BY MS. McDONALD:

Q Mr. Dominguez, can you identify B&W Exhibit 909 for me?

A Yes, that's a copy from my personal log.

Q Do you regularly keep a personal log?

A No, I do not.

Q Why were you keeping this particular personal log?

A I have a logbook that I record bits of information that come across my desk that I would like to recall. It's not a regular thing.

Q How long have you been doing this?

A Approximately nine months.

Q What kinds of events or things that come across your desk do you tend to write down in your personal log?

A Things which I believe will be of value to me in the future.

Q Mr. Dominguez, do you see the entry opposite 5/21/81?

A Yes.

Q That is your handwriting?

A Yes, it is.

Q Is everything on this page your handwriting other than the typed portion at the top that says "Notes: Andre' J. Dominguez"?

A Everything on this page is by my hand.

Q Do you recall receiving a call from Mr. John Craig of the NRC on or about May 21, 1981?

A Yes, I do.

Q Did Mr. Craig tell you why he was calling you?

A Yes, he did.

Q What did he say?

A He said he was interested in a log entry

I had made in a shift test engineer's log concerning an event which had occurred on September 1977.

Q Did you respond to his inquiry?

A Yes, I was very congenial.

Q When you were on the phone with him, did you pull out your personal logbook and take notes?

A No, I did not.

Q Did you, subsequent to the phone calls, take some notes regarding what had transpired to the conversation?

A Subsequent to the conversation I made this entry into the logbook.

Q By "this entry" you mean the one on B&W 909?

A That's correct.

Q How long after the phone call did you make this entry?

A Approximately three hours.

Q At the time you made this entry, did you have a clear recollection of what had transpired in the conversation at the time you wrote this, three hours later?

A Yes, I did.

Q Did you write down anything in this log

entry that was false; in other words, that had not transpired in the phone conversation?

A The things that are entered into this log outside of the quotes, that being "formation of a steam bubble in the loops" are my words and they're interpretation of the phone conversation.

Q Do you have a present recollection of what transpired in the phone conversation?

A I do not have a complete recollection of it, but I do have a recollection of it.

Q Do you recall that Mr. Craig asked you about an entry in the shift test engineers log for September 1977 concerning formation of a steam bubble in the loops?

A Yes, I do.

Q And did you tell him in words or substance, and I am reading now from the document, "that steam bubble was not the most appropriate word, but rather a vapor bubble of very low quality was specifically what had formed due to the cooling down of the loops"?

A Would you read that back, please.

(Question read.)

A Yes.

Q Did Mr. Craig tell you why he was

interested in finding out about this event?

A He indicated that it was due to a review that the NRC had made in relation to the Three Mile Island accident.

Q Did he tell you or did you just know what possible connection a steam bubble in the loops could have to the Three Mile Island accident?

I will ask it in two questions: Did he tell you?

A Yes, he did.

Q What did he say?

A He indicated that the particular word, that being "steam bubble formed in the loops," resembled something which had occurred during the accident and he thought there was a connection there.

Q At the time you had this conversation, did you know anything about the Three Mile Island accident yourself?

MR. GLASSMAN: Are you talking about did he have actual knowledge or did he hear something?

MS. McDONALD: Did he know anything from whatever source he might have known it, whether he was told it or he knew it.

A Yes.

Q What did you know about the Three Mile Island accident?

MR. GLASSMAN: I object to the use of the word "know" because there is no testimony that people conducted an investigation.

MS. McDONALD: I would like to know his state of mind.

MR. GLASSMAN: That's fair.

THE WITNESS: Could you define "state of mind"?

Q What did you know or think you knew about the Three Mile Island accident?

A I made it a habit not to know very much of what occurred there because there was such a proliferation of documents that came out. I basically knew the sequence of events.

Q And prior to the time you talked to Mr. Craig, did you know that in the course of the Three Mile Island accident voiding had occurred in the primary system and resulted in formation of steam bubbles in the primary system other than in the pressurizer?

A No, I didn't know that.

Q Mr. Dominguez, what were your duties and responsibilities as a shift test engineer in TMI-2?

A Our duties and responsibilities were to conduct the pre-operational testing of Three Mile Island Unit 2 and they were pretty much limited to that.

Q In the course of your duties as a shift test engineer, were you required to fill out any kind of logs?

A Yes, I was.

Q What logs were those?

A The shift test engineers log.

Q What was the purpose of the shift test engineers log?

A The shift test engineers log supplied a list of all the testing that we had performed. It also documented or reviews what the shift test engineers did prior to conducting tests, and we also used it to put pieces of information that would be of value to both ourselves, the shift test engineers and our supervisors.

Q Was there a procedure for filling out the shift test engineers logs?

A I don't recall the procedure.

Q Did you receive any training?

A Yes, we did.

Q On how to fill out the log?

A Yes, we did.

Q Do you remember who that was from?

A That was from Mr. Toole.

Q What was Mr. Toole's position?

A It was the startup and test superintendent.

Q Was it part of your responsibility to fill out this log as accurately as you could, based on your knowledge when you were filling it out?

A Yes, correct.

Q When specific tests were being run, was it the practice in filling out this log to write down the number of the test procedure in the margin of the log?

A Yes.

Q Prior to assuming your position as shift test engineer, was it your practice to review the prior log entries back until your last entry?

A Yes, it was.

Q Was that required by the procedure for filling out the log?

A I am not familiar with the procedure.

Q Was it told to you in your training that that is something that you should do?

A I believe it was.

Q Was it your practice to consult with the shift test engineers who had the shift before you came on as to what the condition of the plant was, and what tests had been conducted during your shift?

A Yes, it was.

Q Did you also on occasion consult with control room operators?

On occasion, yes.

Q And shift foreman?

A Yes.

Q And shift supervisors?

A Yes.

Q Did you generally make yourself aware [illegible] condition that the plant was in when you came on [illegible]ift?

A Yes.

Q Do you know whether Mr. Toole made it a practice to review the log periodically?

A Mr. Toole reviewed the log.

Q And on occasion did you see in that log entries by Mr. Toole indicating that he had reviewed

it, and then he would on occasion make certain comments?

A Yes.

Q Did you ever record anything in the shift test engineers log that at the time you were recording it you knew to be false?

A No.

Q Do you know of anyone else who did that?

A No.

Q Even if a test, a specific test, was not in progress during one of your shifts, would you nevertheless make entries into the log, the shift test engineers log?

A That's correct, yes.

Q And was it your practice to record any unusual events or parameters that came to your attention in the log?

A It was not our habit to record any unusual parameter.

Q Was it your habit to record some unusual parameters?

A Yes.

Q Such as?

A Those deemed significant at the time.

Q Let me just show you what's already been marked as B&W Exhibit 173, and I am just going to ask you if you have ever seen that document before.

The document is entitled "Test Instructions Number 17 Shift Test Engineers Log, Prepared by J.P. Miller."

A Would you re-read that, please.

(Question read.)

A I don't recall ever having seen this.

Q While you were a shift test engineer, were you familiar with something called an Unusual Occurrence or Events Report?

A No, I wasn't.

Q While you were a shift test engineer, were you aware of any regulations or laws requiring that GPU or Met Ed report anything that came to their attention which might endanger the public health and safety?

A There is such a law. I am aware of it.

Q Were you aware of it while you were a shift test engineer?

A Yes.

Q While you were a shift test engineer, were you told that you had any responsibility for

bringing to your superior's attention things that might endanger the public health and safety?

A Yes.

Q Was it your understanding when you were a shift test engineer that certain things had to be reported to the NRC, certain significant or unusual events?

A No.

Q No one ever told you that while you were at Met Ed?

A I don't recall ever being instructed as to the requirement or necessity to report specific types of unusual events to the NRC.

(Recess taken.)

Q Could you tell me, Mr. Dominguez, what you remember today about what went on during the incident that is referred to in B&W 909?

MR. GLASSMAN: Are you talking about the entire incident or a particular aspect described on this document?

MS. McDONALD: The entire incident.

A Foremost in my mind was that there was a resin migration into the nuclear services closed cooling water system which forced all the pumps to

trip off after a period of time. That system cools the reactor coolant pumps and subsequently they had to be turned off to prevent damage to them.

Q Do you remember anything else about the event?

A It is not clear in my mind what we did directly after that. The only other thing that really sticks out in my mind was the fact that there was a lengthy investigation as to the extent of the resin problem.

Q Did this event continue for a few days?

A As I recall it did.

Q Do you recall that in the course of the event a vapor bubble of some kind was formed somewhere in the reactor coolant system other than in the pressurizer?

A I don't recall that.

Q Referring to B&W 909, you testified before that you told Mr. Craig of the NRC that a vapor bubble of very low quality was specifically what had formed due to the cooling down of the loops.

When you told him that, did you have a recollection of that or were you lying to him?

A As it relates to the incident in 1977,

September, I didn't recall formation of a steam bubble. What Mr. Craig had done here is to read something which he indicated I had written. I don't recall ever having written that. I don't know if I ever did write it. Under the assumption that perhaps I had written it, I felt that the choice of words "steam bubble" was inappropriate, but rather that specifically if you had some kind of voiding occurring in the loop, it would be a vapor bubble of very low quality. They use thermodynamic terms in here to describe it to Mr. Craig.

The conversation between myself and Mr. Craig was at best a big guessing game. He caught me completely off guard. I had no documents in front of me, and I explained to Mr. Craig that everything would have to be off the record because I really wasn't sure what he was talking about.

Q And at the time of your conversation with Mr. Craig, as you testified before, you didn't know what had happened really at Three Mile Island, is that right?

A That's correct.

Q So without knowing anything, very little, anyway about what had happened at Three Mile Island,

you knew that vapor could be formed in the reactor coolant system outside the pressurizer, is that correct?

MR. GLASSMAN: Objection as to form. I think he's answered already.

Q Would you just describe what you were trying to tell Mr. Craig, where did you get the understanding that vapor could be formed in the reactor coolant system outside the pressurizer?

A Every time that you cool down the loops, depressurize the pressurizer, something forms in the loops, the high points of the system, that is what I call a vapor space, or a vapor bubble.

What I had in mind when I was talking to Mr. Craig was when you heat back up again you pressurize the pressurizer. You have to force all that void space, this vapor bubble out to make sure the loops are filled with water. And that's why I said that specifically what you would have in a situation like that would be a vapor bubble of very little quality because in my mind that's what it would be called as opposed to a steam bubble.

Q And I take it that you knew when you were a shift test engineer at Three Mile Island that vapor

bubbles of very low quality could form in the reactor coolant system outside the pressurizer, is that true?

MR. GLASSMAN: Objection. The witness has already told you where specifically that might or might not form as to his understanding.

Q And I want to know if you knew what you just told us when you were a shift test engineer at Three Mile Island?

Is that right?

A We knew that when you cooled down and depressurized that between the time that had occurred and you pressurized back up again that the hot legs and the other high points would have vapor in them.

Q Based on your understanding at that time, why would the hot legs get vapor in them?

A Geometry.

Q What do you mean by that?

A The highest points of the system are the hot legs. If you let all the water drain down to some level below that, you are going to create a vapor space up there.

Q Was it your understanding that vapor could form prior to draining?

A No, I never expected it to occur prior to draining.

Q So you would have considered that to be unusual, is that right?

MR. GLASSMAN: You can't ask him to speculate about what he would have considered if he didn't actually consider it.

MS. McDONALD: Yes, I can.

MR. GLASSMAN: No, you can't.

A I would have to say I never really considered it.

Q Based on your knowledge when you were a shift test engineer that you just testified about, did you ever see vapor, experience vapor forming in the reactor coolant system outside the pressurizer to the system being drained of water?

A I can't recall ever seeing that happen.

Q The cooldown that you have just been describing where vapor sometimes formed was that a normal cooldown that occurred in every cooldown based on your understanding when you were a shift test engineer?

A Yes.

Q Do you know whether the control room

operators at Three Mile Island knew that?

A No, I don't know.

Q Did you ever have any conversations with control room operators, shift test engineers or shift foreman at Three mile Island regarding this phenomenon during cooldown?

A I don't recall having conversations of that nature.

Q Did any control room operator or shift foreman or shift supervisor ever indicate to you that he knew that vapor could form in the reactor coolant system during normal cooldown?

A I don't recall ever hearing that.

Q How did you come to know that?

A I witnessed it.

Q On how many occasions?

A I can only recall one occasion.

Q When was that?

A I can't recall a specific date or time.

Q Was it during the event which started with the resin migration?

A I can't recall.

Q When I refer to the event which started with the resin migtation, you know what event I am

talking about?

A You are talking about the event September 1977?

Q Correct. Do you remember anything during that event about behavior of the pressurizer level?

A I don't recall anything specifically about the pressurizer level.

Q During the normal cooldown that you have been describing in which on occasion vapor may form in the hot legs, was it your understanding that that vapor would cause pressurizer level to rise?

A No, it wasn't.

Q Was it your understanding that that vapor formation would have any effect on pressurizer level?

A No.

Q Were you ever taught while at Metropolitan Edison anything about the desirability or undesirability of operating Three Mile Island in the solid state?

A I don't recall any training that discussed the operation in a solid state.

Q Was it normal based on your experience as a shift test engineer to operate the plant with the pressurizer completely full of water?

A No.

Q Did you ever see that happen?

A I never saw operation of the plant with the pressurizer full of water, no.

Q Is it correct that the only time you saw the pressurizer full of water was during hydrostatic testing at Three Mile Island?

MR.GLASSMAN: I think the witness just answered that he never saw it.

MS. McDONALD: He used the word "operation," I thought he might be making some distinction there.

THE WITNESS: Yes, I was.

Q Did you ever see the pressurizer full of water, Mr. Dominguez?

A I observed hydrostatic testing of the plant. I don't recall what the condition of the pressurizer was. It has to be full in order to do that.

Q That hydrostatic testing is the only occasion that you remember seeing the pressurizer full of water?

MR. GLASSMAN: Just so we are clear, the witness just said he doesn't recall actually seeing that.

Q Do you remember any time other than the obvious time of hydrostatic testing that the pressurizer was full of water?

A I don't recall.

Q Based on your training and your knowledge while at Metropolitan Edison I want you to think back, would you have considered it unusual to have the pressurizer full of water while the plant was being operated?

A Yes, I would consider that unusual.

Q Now, Mr. Dominguez, I would like to show you portions of the shift test engineers log and the pages I would like to show you come from what has been previously marked B&W Exhibit 175, and the pages I am going to hand you are pages stamped W06066 through 06080. I would like to ask you if you recognize that as part of a shift test engineers log?

A I recognize this as the shift test engineers log.

Q Have you reviewed this portion of the shift test engineers log since the Three Mile Island accident other than with counsel?

A No, I have not.

Q During this time period, namely

September 1977, up through the time you left Metropolitan Edison, did the shift test engineers have three shifts a day?

A Yes.

Q They were 8-hour shifts?

A Yes.

Q Did they go from 11:00 p.m. to 7:00 a.m. and then from 7:00 a.m. to 3:00 p.m., and then from 3:00 p.m. to 11:00 p.m. were those shifts, the 8-hour shifts?

A Give or take an hour, yes. I don't recall the exact time.

Q But there were three 8-hour shifts?

A Yes.

Q Would you refer to page W06069, please.

Do you see the entry that begins at the bottom of the page and is dated September 8, 1977?

It starts "Relieved, Jack Garrison."

A Yes.

Q Can you tell based on your knowledge of how these logs were kept that that is the entry for the first shift on September 8, 1977? I note that the entry previous to that is dated 9/7/77.

MR. GLASSMAN: I think we can stipulate

that that's what it appears to be. Obviously the witness is hard-pressed to recall and say exactly --

MS. McDONALD: I am asking for the added knowledge that he might have known how these logs were kept.

A The time and day.

Q Was it approximately the 11:00 to 7:00 shift give or take an hour?

A Yes, I would say that was the first entry for September 8th, that being the 11:00 to 7:00 shift.

Q Would you turn the page. At the bottom of page 06070, towards the bottom, there is an entry "Opened RCV155 and V137, and started venting the pressurizer to the reactor coolant drain tank."

Do you recall that at some point during this event the pressurizer was vented to the reactor coolant drain tank?

MR. GLASSMAN: You are asking the witness for a present recollection rather than an interpretation of this document.

MS. McDONALD: Or if this log refreshes his recollection.

A I don't recall.

Q Do you recall that there were vent valves on the top of the pressurizer which led to the reactor coolant drain tank?

A I recall that there was at least one, yes.

Q Do you recognize either one of these valve designations as being valves at the top of the pressurizer?

A No, I don't recall those valve designations.

Q When you say you recall at least one, which one was that?

A I recall that the pressurizer had a vent, how many valves were associated with it or how many different vents there actually were, I don't recall.

Q Were these vents at the top of the pressurizer, generally?

A Generally, yes.

Q Would you turn over the page to page 06071.

Do you see your handwriting anywhere on that page?

A Yes.

Q Is the entry beginning with "Relieved John Ulrich," is that your entire entry in your handwriting through to the next page where you signed your name?

A Yes.

Q What do you recall was occurring when you took over this shift, and if this document refreshes your recollection feel free to make use of it.

MR. GLASSMAN: You want the witness' recollection now?

A I don't recall exactly where we were at the time of this entry in terms of plant conditions other than what is recorded at the top.

Q Sort of two-thirds down the page, do you see an entry which says "Pressurizer level unexpectably increased when venting the pressurizer, and decreased pressure from 500 psig to 460 psig. Pressurizer level increased about 150 inches during this evolution. Pressurizer temperature was about 340 Fahrenheit. Apparently the reference legs have flashed and there was no steam in pressurizer to fill the reference legs. One reference leg is going to be filled to verify the correct level."

Do you see that?

A Yes, I do.

Q That is in your handwriting?

A Yes, it is.

Q Do you recall that during this event

pressurizer level increased approximately 150 inches, and that that was unexpected to you?

A Yes. I would like to say one other thing. I don't really recall this particular conversation, but I believe it to be correct, that there was an unexpected increase in level.

Q Can you recall why you considered it to be unexpected?

A Prior to this time I had never entertained the -- this particular situation from occurring so it was unexpected.

Q I thought that it's written here that pressurizer level unexpectably increased. Did you mean unexpectably by the way?

A We didn't expect it.

Q This occurred when venting the pressurizer and decreased pressure from 500 to 460 psig. Had you ever before experienced the phenomenon of pressurizer level going up at the same time that pressurizer level was going down?

A I don't recall ever having witnessed that prior to this.

Q Was it your understanding when you made this entry that opening a valve at the top of the

pressurizer and venting it would tend to decrease pressure in the reactor coolant system, everything else remaining the same?

A Oh, yes.

Q You wrote apparently the reference legs have flashed and there was no steam in the pressurizer to fill the reference leg.

Can you recall what you meant by that?

A Yes. As we described before, flashing would be that the reference leg liquid had flashed into steam. Since we knew there was no steam in the pressurizer, there would be no way to fill that reference leg back up.

MS. McDONALD: Would you read that answer back.

(Question read.)

Q Fill that reference leg back up with what?

A Liquid.

Q You wrote apparently the reference legs have flashed, what caused you to think that?

MR. GLASSMAN: Objection. There nas been no testimony that was Mr. Dominguez' thought or anyone else's thought at this point.

MS. McDONALD: He wrote that.

MR. GLASSMAN: There has been no foundation, you haven't asked him whether or not particular notes reflect his thoughts or someone else's thoughts or any or all of the above.

There is no foundation.

Q I just want to know why you wrote apparently the reference legs flashed?

A The word "apparently" was used because apparently there was no proof, if you will, that that was the actual cause of the observed phenomena.

Q Did you write that because you suspected that that might be one cause?

A To me that seemed the most logical explanation for what had occurred.

Q So as far as you recollect, you wrote this based on a conclusion that you thought might be possible rather than someone else telling you this?

A I cannot recall if this is my own original thought. It wouldn't be unusual to have discussed it prior to coming to that conclusion.

Q While you were on this shift, do you recall having any conversations with any of the control room operators or shift formean or shift

supervisor who was in the control room?

A I don't recall having conversations with them.

Q Based on your understanding at the time you wrote this, why did you consider flashing of the reference legs as a possible explanation for the pressurizer level behavior?

MR. GLASSMAN: Are you asking for his current recollection of what he was thinking then?

MS. McDONALD: His recollection, unless I say otherwise that's what I'm asking him.

A The conclusion would be drawn that there would be an inaccurate level indication in the pressurizer due to the reference legs being in some other state than completely filled with liquid.

Q Did it subsequently, subsequently to this entry, come to your knowledge that in fact the pressurizer level which was seen was in fact the accurate pressurizer level?

A I don't recall.

Q You wrote here one reference leg is going to be filled with water to verify correct level.

How does filling the reference leg with

water verify the correct level based on your understanding at this time?

A If the reference leg is filled with water from another source then we know that the reference leg is indeed full, there is a guarantee that in fact everything that is in there is liquid. If that is the case then it would indeed be indicated the level it was calibrated to.

Q Would you turn the page to page 06072.

Based on your understanding of how these logs were kept, can you review the log and tell me who relieved you, apparently relieved you?

A Jack Garrison relieved me.

Q Do you recall informing Mr. Garrison of the unexpected pressurizer level behavior that you had witnessed or that you had recorded?

A I don't recall the conversation.

Q Was it your practice to review with the oncoming shift what had gone on with your shift?

A Yes, it was.

Q Do you see in the middle of the page 06072 an entry which reads, "Pressurizer level transmitter RC-LT3 was backfilled at reference leg. Comparison was made between LT1, LT2 and LT3. All three were

reading same. Pressurizer level indication as shown in control room is believed to be correct."

Do you see that?

A Yes, I do.

Q Do you recall being told or hearing somehow that the pressurizer level response which you had described in your entry was in fact correct and that the pressurizer level had in fact increased?

MR. GLASSMAN: Could I have that read back?

(Question read.)

A No.

Q After you observed this unexpected pressurizer behavior, did you mention that to anyone, did you have any conversations about how this could be?

MR. GLASSMAN: Objection. I don't think there has been any testimony that Mr. Dominguez personally observed that. He talked about his notes, but I don't believe he personally observed that.

MS. McDONALD: He testified that he remembered this happening.

MR. GLASSMAN: I think there may be some

ambiguity.

Q Do you remember the pressurizer level?

A I do not remember this particular phenomenon occurring.

Q Were you accustomed to writing down false things in the log?

A No.

MR. GLASSMAN: Objection. I think the nature of my prior objection and what I had suggested that counsel ask really related to know whether it was true or false. We all see the note and the note is in front of us.

The objection was whether this was a personal observation of Mr. Dominguez or whether he recalls the source of the information contained in the note.

That's all.

Q Do you recall the source of the information contained in the note?

A No, I do not.

Q Do you recall that shift test engineers were required to try to make sure that everything they wrote in the log was accurate?

THE WITNESS: Would you read the question

back, please.

(Question read.)

MR. GLASSMAN: Objection as to form. By "try to make sure," are you referring to some investigation of it or are you referring to just putting down impressions at that point in time. "Try to make sure" is somewhat vague.

MS. McDONALD: You may answer the question.

MR. GLASSMAN: The witness can answer the question if he understands it.

A Yes.

Q Were you aware of any requirement saying that the shift test engineers are solely responsible for the the accuracy of all entries in the log?

A I don't recall that statement ever being made.

Q Do you recall anyone telling you that it was imperative that all entries into the log be objective, factual, timely and not reflect personal opinion or personalities?

THE WITNESS: Read that, please.

(Question read.)

A Yes.

Q Who told you that, was that during

your training?

A Mr. Toole told me that.

Q Did you take that to heart and try to comply with that?

A Yes, I did.

Q Again, on page 06072, do you see an entry two-thirds of the way down the page it says "Whenever RC-V137 was opened to vent pressurizer, level would indicate an increase"?

Do you see that?

A Yes, I see it.

Q Do you recall any conversations or do you recall it in any way coming to your attention that every time the pressurizer was vented pressurizer level would go up?

A I don't recall having a conversation of that type.

Q Would you turn to the next page.

Do you see the entry that begins right below where it is written September 9, 1977?

A Yes.

Q Can you tell who relieved Mr. Garrison, based on your understanding of how these logs were kept?

A Yes, John Ulrich relieved Jack Garrison.

Q Do you know where Mr. Ulrich is presently employed?

A I believe he is employed with Metropolitan Edison Company.

Q Do you see kind of in the middle of that page, that's page 06073, it says "Closed RCV137 and applied nitrogen to the pressurizer. The pressurizer level came down proving that there was a steam bubble in each of the hot legs. Left nitrogen on until pressure started to slightly increase and secured nitrogen."

A Yes.

Q Just for the record, Mr. Dominguez, N_2 is nitrogen?

A That's correct.

Q Do you recall having it come to your attention that when the vent at the top of the pressurizer is closed and nitrogen was applied pressurizer level came down?

A Please read that?

(Question read.)

A I do not recall the specific instance.

Q Would you look at page 06074. Can you

tell from this log entry that you relieved Mr. Ulrich?

A Yes.

Q Again, was it your practice when coming upon shift to discuss what had gone on in the plant with the shift test engineer that preceded you on shift?

A Yes.

Q Was it also your practice, as I believe you testified before, let me just ask it again, to review the prior log entries when you came on shift?

A Yes, it was.

Q Do you have any reason to believe that you did not review Mr. Ulrich's log entry when you came on shift on September 9, 1977?

A No.

Q Do you recall having any discussions with Mr. Ulrich regarding where he apparently had written that the pressurizer level came down proving that there was a steam bubble in each of the hot legs?

A I do not recall a conversation with Mr. Ulrich.

Q Based on your understanding of how the system worked and your training up to this date, did you understand how it could be that there would be a steam bubble in the hot legs?

A No.

Q You don't recall going and asking anybody how that could be?

A I don't recall having conversations of that nature.

Q Was it your understanding at or about this time that in a reactor coolant system which was solid and filled with water that when nitrogen was applied to the top of the pressurizer level would go down or would it stay the same?

MR. GLASSMAN: Are you asking him whether that was ever considered?

MS. McDONALD: I am asking whether based on his knowledge at that time.

THE WITNESS: Please reread the question.

(Question read.)

A I don't believe I ever considered the situation.

Q Well, Mr. Dominguez, you had a bachelor of mechanical engineering from Penn State. You had training on pressurized water reactors in the Navy. You had several courses in physics and you have had some courses in thermodynamics. You had been trained to a certain extent at Met Ed.

I am asking you not whether you specifically considered that possibility. I am asking you based on all of the knowledge that you had thinking back to what kind of knowledge you had then, what would you have expected to happen?

MR. GLASSMAN: I object to the totally hypothetical realm. The witness said he did not consider it. Moreover, I think he testified sometime earlier that he had never even seen solid operations except in hydrostatic testing, and even there he didn't know that he had actually seen them so you can ask him a question about something he recalls, but it's inappropriate to get into some hypothetical area about whether piecing together some part of some education which we haven't identified --

MS. McDONALD: I have identified it. And I am entitled to ask him what all of his training led him to know about the operation of a pressurized water reactor. I do not have to be limited to things which actually happened in the pressurized water reactor.

MR. GLASSMAN: You can ask him that, what his training told him.

MS. McDONALD: That's all I asked him.

BY MS. McDONALD:

Q Can you answer the question?

MR. GLASSMAN: Do you understand the question?

THE WITNESS: Yes.

A If the loops are completely full of water and the pressurizer is completely full of water, and pressure is applied to the top of the pressurizer I would expect to see no change in level of significance in the pressurizer.

Q Well, whether or not you remember discussing Mr. Ulrich's apparent entry with him on that day, do you recall any conversations with anyone up to the time you left Metropolitan Edison regarding the possibility that a steam bubble had formed in the hot legs during this September '77 event?

A I don't recall having a conversation as to that nature.

Q Do you recall any surprise registering in your mind with regard to anything that happened in this event regarding bubbles in the hot legs, possible bubbles in the hot legs?

A You are referring to John Ulrich's entry

there?

Q Yes.

A I don't recall any particular reaction after reading that entry.

Q Would you refer to page 06078 of this log. Do you see the entry beginning at the bottom of that page, it says "Relieved Craig McMullin"?

A Yes.

Q If you would review the next couple of pages through 06080, can you tell that that is in fact the beginning of your entry, your signature appears to be on page 06080 with the exception of some writing on 06079 which may not be yours.

MR. GLASSMAN: I am somewhat confused now.

MS. McDONALD: All I want to know is, apparently, Mr. Dominguez began entering on 06078. It continues on 06079 and is interrupted with some other writing and then continues on the bottom of the page and he signs it, apparently, on page 06080.

Is that correct?

THE WITNESS: That's correct.

Q You talked before about Mr. Toole having the practice of reviewing the log. Do you see an entry

in the middle of your entry on 06079 which appears to be written by Mr. Toole?

A Yes.

Q Are you familiar with Mr. Toole's handwriting for reviewing these logs?

A No, I am not.

Q Was it your practice to review whatever Mr. Toole had written in the log?

A Yes, it was.

Q Towards the end of Mr. Toole's entry, number 6 reads: "There is no reason given for how we got into problems on pressurizer level. A change to cooldown procedure could be made if we knew what to do."

You will recall discussing with Mr. Toole a problem about pressurizer level that had occurred during this incident?

A I don't recall having a discussion with Mr. Toole concerning this incident.

Q Do you recall reviewing this entry?

MR. GLASSMAN: Aside from any review with counsel?

MS. McDONALD: Yes, reviewing this entry at or about the time it was written.

A I don't recall reviewing it, no.

Q But it was your practice to do so, however?

A But it was my practice to do so, yes.

Q What training, if any, did you receive after this September incident to explain to you what had happened?

A The September incident?

Q This incident we have been discussing here.

A Training subsequent to that particular incident to explain it?

Q To review or go over what had happened during the incident.

A Well, I don't recall anything. I don't recall any training to explain the phenomena.

Q As far as you recall up until the time you left Met Ed you never got an explanation of why that pressurizer level had gone up unexpectedly? As far as you know no one ever told you why?

A I don't recall receiving an explanation as to why that occurred.

Q Do you know who Mr. Illjes is, Ted Illjes?

A The name is familiar. I cannot recall what position he had.

Q Do you have any recollection of what

Mr. Illjes was doing, if anything, with relation to this incident?

A No, I do not.

Q You testified that you were in part concerned with the resin migration in this incident, is that right?

A Yes.

Q What did you do with respect to the resin migration?

A I was instructed to assist Metropolitan Edison's staff in their investigation as to the extent of the resin migration and come up with plans to determine the extent of it and means of resolving the problem.

Q So I understand, did you have to go somewhere out of the control room to look at where the resins might be?

Do you understand the question?

A Yes. The time frame of this would be -- the investigation occurred several days after the actual incident occurred. The corrective action that was taking place occurred over a period of a month or so subsequent to the incident.

Q As far as you remember you were not

involved in investigating what had gone on with respect to the resin until a few days after the event?

A That's correct.

Q At the time you wrote the entry that's on page 06071, were you in the control room?

A I would be unable to place my location in the control room at any specific time during the shift.

Q Well, can you from reviewing the log and based on your knowledge how you made log entries tell me whether you were probably in the control room when you wrote something about pressurizer level?

A I was not in the control room. It was not my habit to write entries into the log in the control room, but rather in an office that was off to the side of the control room.

Q In other words, if you wanted to write something in the log, you would leave the control room and go to some other office?

A Yes.

Q Where was that office?

A It was off to the side of the control room.

Q As far as you recollect, however, you weren't somewhere totally different, away from the

control room when you wrote this?

MR. GLASSMAN: I think the witness just said he couldn't tell you that.

MS. McDONALD: Well, I asked him based on his knowledge of how he made log entries.

A From my recollection all log entries were made in the office that was off to the control room.

Q Do you recall having any conversations about this event, by "this event" I mean the one we were discussing in September 1977 with Mr. Hartman?

A I don't recall having a conversation with Mr. Hartman concerning this event.

Q Mr. Scheimann?

A No.

Q Mr. Frederick?

A No.

Q Mr. Faust?

A No.

Q Mr. Zewe?

A No.

Q Have you ever had any conversations with anyone other than a gentleman from the NRC and counsel about this event?

A I do not recall any other conversations.

Q You never received any phone calls from anyone at GPU or Met Ed to ask you what you remembered about this event?

A No, I never received them.

Q Were you ever asked by anyone other than counsel to review this document that I am about to show you which has been previously marked as B&W 837. I just want to know whether you have ever seen that? The document is entitled "TMI-2 September 1977 Hot Functional Testing Event."

A No, I have never seen this before.

Q Have you ever seen what has been previously marked as B&W Exhibit 838 entitled "GPU Nuclear Technical Data Report Analysis of TMI-2 September 1977 Event During Hot Functional Tests"?

A I don't recall ever seeing this report.

Q As far as you remember then you had no input into these reports?

A I don't recall ever having input to these.

Q In 1981 you were already employed by Pennsylvania Power & Light, were you not?

A That's correct.

Q I would like to refer you to some charts that are attached to B&W Exhibit 838. The pages I

want to refer you to are headed "Figure 2, Pressurizer Level Increase From 107 to 320 inches 6:30 a.m. to 9:15 a.m. 9/8/77" and "Figure 3, Pressurizer Level Increase from 305 to 385 inches, 2100, 9/8/77."

I want to ask you if this chart refreshes your recollection in any way as to whether you ever saw pressurizer lever solid indicated at TMI-2 other than possibly in hydrostatic tests?

A No, it doesn't.

Q Do you see on Figure 3 that for a period of time pressurizer level was somewhere between 350, at least according to this graph between 350 and 400 inches?

MR. GLASSMAN: Objection. We can all agree that the figure shows what it shows, but this witness hasn't seen it before, so it's inappropriate to ask him questions about that.

MS. McDONALD: I want to see if his recollection is in any way reflected by this document prepared by GPU.

MR. GLASSMAN: I think he's already told you that it wasn't, but you can ask him that again: The question is whether this document refreshes your recollection.

A No, it doesn't.

Q I take it you have no reason to believe that this chart attached to GPU technical data report is inaccurate?

MR. GLASSMAN: Objection. I instruct the witness not to answer. The witness has not reviewed this document before. He's testified that he had not seen it.

Q Have you ever had any conversations with anyone from something called the Hart Committee, the congressional committee?

A No.

Q After the Three Mile Island accident had you had any conversations other than the NRC conversation we have already talked about about anything having to do with your employment at Met Ed?

MR. GLASSMAN: Other than conversations with counsel?

MS. McDONALD: Yes.

A I can't recall any conversations of that nature.

Q Do you recall that any change to the cooldown procedure was made after this September event as a result of what had happened?

A No, I don't.

Q Do you recall any conversations with Mr. Toole regarding his entry, apparent entry, saying a change to cooldown procedure could be made if we knew what to do?

A I don't recall a conversation with Mr. Toole concerning that.

Q Mr. Hawkins?

A Or Mr. Hawkins.

MS. McDONALD: Off the record.

(Discussion off the record.)

Q Mr. Dominguez, I have one other question about this event: Based on your understanding of how the system worked at TMI-2, am I correct in thinking that if the reactor coolant pumps are off that the spray to the pressurizer is inoperable, was inoperable, normal spray to the pressurizer?

A I believe that's correct.

Q I would like to show you a portion of what's already been marked as B&W Exhibit 174 which is a shift test engineers log.

Q I am showing you pages 06000 through 06002 of B&W Exhibit 174.

On page 06001, do you see an entry made

by you?

A Yes.

Q The entry starts "Relieved Craig McMullin," and then continues on the next page until it is signed by you, is that right?

A Yes.

Q And that's your handwriting and that's your signature?

A Yes.

Q Is this an entry for August 12, 1977 according to the log, can you read the date next to your name?

MR. GLASSMAN: That's obviously what it says?

A Yes, I didn't hear the question, yes, it is.

Q Referring to the bottom of page 06001 you wrote, "Started investigating makeup tank level decreasing excessively. Discovered NDTT relief leaking by using downstream temperature indication on computer. Shut RC-V2 and cycled the NDTT relief and reopened RC-V2 with no further leakage noted."

Is that your handwriting?

A Yes.

Q Mr. Dominguez, was the NDTT relief valve

the same valve as the PORV, but in a different mode?

A To the best of my knowledge, yes.

Q The pilot operated relief valve was a valve at the top of the pressurizer, is that right?

A Yes.

Q And at certain pressures, is it your recollection that that valve's setpoints would be changed; in other words, to make them the NDTT setpoints.

A I don't recall.

Q But in any event this NDTT relief that's mentioned here as far as you recollect was another name for the PORV?

A Yes.

Q What downstream temperature indication on computer were you referring to when you wrote this?

A I can only reword what is written.

MR. GLASSMAN: You are asking for his recollection?

MS. McDONALD: I am asking for his recollection of what indication there was, downstream of what?

A Downstream of the relief valve pipe there was a temperature indicator that was read

on the computer.

Q Based on your recollection did you consider it possible to determine or to at least investigate whether the pilot operated relief valve was leaking by use of the downstream temperatures?

THE WITNESS: Reread the question, please.

(Question read.)

A Yes.

Q You went on to write "Shut RC-V2," is that the block valve of the pilot operated relief?

A I believe it is.

Q Based on your recollection of how the system worked why were you shutting the block valve, cycling the relief and then reopening the block valve? I mean, what is the purpose of that?

A When you shut the block valve, you remove the pressure on the relief valve. When you cycle the valve, you are giving it another opportunity to seat properly under a low pressure condition. With that amount of information, that's why we chose to do this.

Q While you were at Met Ed, was it your practice if you thought the PORV might be leaking to perform this evolution or whatever you want to call

it; namely, closing the block valve, cycling the PORV and then reopening the block valve?

MR. GLASSMAN: I don't know what you mean by practice. There has been no foundation as to how often this occurred or whether it occurred more than once.

MS. McDONALD: I don't mean to indicate that it occurred a lot by use of the word "practice" but if you thought the PORV was leaking, what would you do?

A I would use the same procedure.

Q You wrote "Shut RC-V2 and cycled the NDTT relief and reopened RC-V2 with no further leakage noted."

How did you determine that there was no further leakage?

MR. GLASSMAN: Are you asking for his recollection?

MS. McDONALD: I am asking for his recollection, yes. I am always asking for his recollection, Mr. Glassman, and I think it's inappropriate to constantly interrupt in an attempt to remind the witness that he might not remember this.

MR. GLASSMAN: I am not doing that at all. I object to your comments. There has been no testimony whether his recollection is based on a note by Mr. Dominguez or whether this note is based on somebody else.

MS. McDONALD: I don't think it makes any difference.

MR. GLASSMAN: Your question had a lack of foundation. You assumed that Mr. Dominguez did something.

MS. McDONALD: Well, he wrote this.

MR. GLASSMAN: Well, he did write this, yes.

MS. McDONALD: Does he just write things out of the blue?

MR. GLASSMAN: You know full well as a person with some experience that the notes can reflect various things and you are here to be able to ask him questions about it, not to make assumptions or guesses. You may proceed.

Q Mr. Dominguez, how was it possible to determine that there was no further leakage?

A It would be possible to determine there is no further leakage by using the downstream

temperature indication on the computer.

Q Do you mean by that that the downstream temperature would then be lower than it was when you thought it was leaking?

A Yes.

Q Do you recall where you got this information that you wrote down here that you observed this or did some control room operator tell you?

A It was one or the other. I don't recall exactly which one.

Q Do you recall any conversations with anyone prior to the time you left Met Ed about how to determine whether the PORV was leaking?

A I don't recall having conversations of that nature.

Q Was that ever mentioned in your training?

A Not that I can recall.

Q Did the reactors with which you were familiar in the Navy have relief valves at the top of the pressurizer?

A To the best of my knowledge, yes.

Q Did you ever have occasion to investigate leakage on any of those?

A No.

Q Can you tell me which shift this is based on, your knowledge of how these logs were kept? This being your entry on August 12, 1977.

A Well, Jack Garrison had the midnight shift from 11:00 to 7:00 and -- well, excuse me, that's not true. Craig McMullin had the first shift on the August 12, 1977, which would have been the 11:00 to 7:00 shift.

Q And then you came on, is that right?

A I relieved Craig McMullin so I had the 7:00 to 3 o'clock shift.

Q I would like to show you another portion of B&W 174 pages 06011 through 06015. And specifically I would like to refer you to page 06013 which appears to be an entry by Jack Garrison apparently for August 17, 1977.

Do you see that?

A Yes, I see it.

Q Now, if you follow along in this log, do you see that some later period you relieved Mc. McMullin on August 18, 1977 according to the log?

A Yes.

Q And again it was your practice to go back and review the prior log entries?

A Yes.

Q Now, on page 06013 do you see an entry that reads "NDTT relief appears to be leaking into reactor coolant drain tank" Closed RC-V2 and manually opened valve RC-RV2. Closed RC-V2 and reopened RC-V2. Monitored downstream line temperature and reactor coolant drain tank level. Indications were that valve was still leaking. Closed RC-V2 and allowed line to cool to approximately 125 degrees Fahrenheit. Manually cycled valve again and reopened RC-V2. Indicates valve is still leaking. Issued PR Number 5055."

Do you recall this event?

A I don't recall this particular event.

Q Based on your review today, do you see that it's another example of what we were talking about before?

MR. GLASSMAN: Objection, the witness said he didn't recall it. He is not here to tell you now what he sees with regard to a document that he doesn't recall.

Q Do you recall prior to leaving Metropolitan Edison that on occasion the pilot operated relief valve would leak and that would be determined by use of certain indications such as downstream

temperature or reactor coolant drain tank level?

A I can recall that that was a method which I employed to determine whether the valve was leaking or not.

Q And as you testified before, part of that investigation might on occasion involve closing the block valve and then monitoring the temperatures you saw, is that correct?

A Yes, that is correct.

Q I would like to show you a portion of again, B&W 174, pages 06144 and 06145. Again this is part of the shift test engineers log.

Do you see an entry on page 06144? It starts: "Relieved by Andre Dominquez"?

A Yes.

Q And then do you see an entry that you wrote, that is in your handwriting anyway?

A Yes.

Q Is that entry signed by you on page 06145?

A Yes.

Q Is there a date next to your signature, October 7, 1977?

A 10/7/77, yes.

Q On page 06144 on the bottom, do you see,

it's written there, "Opened RC-V2"? Again, that's the block valve, is that correct?

A Yes.

Q "And temperature downstream RC-RV-2 remained at 123 degrees Fahrenheit"?

A Yes.

Q Do you remember, based on your understanding and knowledge up to that time why you wrote that, what that meant?

MR. GLASSMAN: You don't want him to interpret this document for you now, you want his recollection?

MS. McDONALD: Right.

A I am not really sure, but it appears to be connected with some prior event as if, perhaps, I was instructed to open the valve and record the temperature.

Q Based on your training and knowledge up to this time, was it your understanding that if the block valve had been closed for a period of time and then it was opened and the temperature stayed the same that was at least some indication that the PORV was not leaking?

A I believe that it could be interpreted

as such.

Q Having reviewed these log entries that talk about the PORV, do any of them refresh your recollection about any conversations you may have had regarding how to determine whether the PORV was leaking or not?

A No, they do not.

Q Did anyone ever tell you in your training at Met Ed that you must never close the block valve to the PORV?

A I don't recall that statement ever being made.

Q Do you recall anyone that you talked to ever expressing concern about closing the block valve to the PORV?

A No, I never heard anybody expressing that kind of concern.

Q I would like to show you another portion of the shift test engineers log, and this portion comes from B&W Exhibit 174 again, and I would like to show you pages 06042 through 06045.

I would like to refer you to page 06044 which appears to be an entry made by John Ulrich on August 30, 1977. Do you see towards the bottom

of that page is written, "Relieved by Andre Dominguez"?

A Yes.

Q Above where it says that, Mr. Ulrich has apparently written "Successfully cycled RC-V2 after open torque switch was set to 1.5. Placed RC-R2 in auto and raised RCS pressure to 2275 psig. RC-R2 lifted at approximately 2250 psig. Sprayed down pressurizer to 2130 psig and RC-R2 never closed.

"The relay which actuates RC-R2 did drop out so it looks like RC-R2 is mechanically binding."

Do you recall reading that entry?

A I don't recall reading this entry.

Q But again it was your practice to review the prior entries and so forth, is that correct?

A Yes.

Q Based on your recollection of when you were the shift test engineer at Metropolitan Edison, can you tell me what relay is being referred to there? I don't mean its designation, but just what it says.

A A relay is a device which changes state, that is, it's either on or off. This particular relay referred to in this entry is the device which will turn on or open the valve or instruct us, if you will, to close.

Q It was, based on your recollection, an electrical device which commanded the valve to open?

A Yes.

Q And if it was off the valve was electrically told to close, is that correct?

A In a manner of speaking, that is correct.

Q Do you recall it coming to your attention while you were at Metropolitan Edison that even though the status of the electrical signal to the PORV was telling the valve to close that it could nevertheless stay open for some mechanical reason?

Did that come to your attention?

A I don't recall it coming to my attention in this particular instance.

Q Do you recall it coming to your attention in general?

A It's a matter of fact in any case.

Q That a valve can stick open for a mechanical reason despite the status of the electrical signal that's going to it?

A Correct.

Q Do you recall any specific instances at TMI-2 of the PORV being open when it was supposed to be closed or being closed when it was supposed to

be open, specific instances?

A There was an occasion when the pressure -- excuse me, when the PORV was open, and the control room did not have that knowledge.

Q Do you recall that event occurring in March approximately of 1978?

A I don't recall the exact time.

Q Do you recall that there came a time when a light was installed in the control room with respect to the PORV?

MR. GLASSMAN: Are you talking about the TMI-2 control room?

MS. McDONALD: Yes.

A I don't recall the actual installation of a light. What I do recall is that there was a light indication given associated with that particular valve.

Q Do you recall that that light was put in after the event that you just described regarding the PORV being open when it should have been closed?

A Yes.

Q Do you recall anyone from Met Ed or GPU telling you what that light was for?

A I don't recall any specific instruction as to what that valve -- excuse me, where that light

came from.

Q You do, I take it, remember there was at some point a light there in the control room?

A Yes.

Q Do you recall that that light showed whether or not power was going to the solenoid, the PORV solenoid?

A As I recall that was the case.

Q Was it your understanding, in any event, that that PORV could remain open for a mechanical reason even though the electrical signal that was going to the PORV was off?

MR. GLASSMAN: The witness just gave us his testimony a few moments ago about his general understanding regarding valves and electrical signals. The question now is whether he particularly understood that with regard to this valve?

MS. McDONALD: No, I think really to make it more clear my question is:

Q Did you understand that what the light in the control room showed was the electrical status of the PORV?

MR. GLASSMAN: I think he just answered that. He understood that was power to the solenoid.

Q Is that right?

A Yes.

Q Am I correct in thinking that your understanding that you testified about before; namely, that the valve could be open for a mechanical reason despite the electrical status of the valve did not change in any way after the light was installed in the control room?

MR. GLASSMAN: Objection as to form. The witness may answer it.

A My understanding did not change.

Q Did you have any conversations with anyone after the light was installed regarding the light?

A Not that I can recall.

Q Could you tell me again. I know we went into this before, when you left Metropolitan Edison, approximately what month was that?

A Approximately September.

Q Of 1978?

A Yes.

Q I would like to show you now another portion of the shift test engineers log. This portion comes from B&W Exhibit 176. I am showing you pages

06452 through 06454.

On page 06454, do you see an entry that reads "Relieved by Andre Dominguez," signed apparently "John Ulrich," dated March 29, 1978?

A Yes.

Q And do you see an entry written by yourself and then signed by you?

A Yes.

Q Now, could you take a look at Mr. Ulrich's entry and tell me whether you can tell that this entry relates to the events that you testified to just now where the PORV was open when it should have been closed?

Just review his entry and see if you can determine that?

MR. GLASSMAN: That's inappropriate. If you are asking whether this refreshes his recollection that's appropriate, but he is not here to interpret --

MS. McDONALD: All right, I'll ask that.

MR. GLASSMAN: It's not in his handwriting, that portion.

Can you rephrase the question?

Q Do you see on page 06453 it is written

that 1440, it appears at this time that during ES testing the fuses on 2-IV inverter blew and gave a reactor trip and a full ES actuation. The electromatic relief valve lifted and pressurized the RC drain tank to approximately 100 psig. The inverter was put on alternate source and the HP injection stopped.

Does this refresh your recollection that the events that you were referring to before occurred on March 29, 1978?

A Yes.

Q Mr. Dominguez, do you see Mr. Ulrich's entry on page 06454, something that reads, "The pressurizer level was increased to approximately 200 inches. RCS pressure decreased to approximately 1200 psig before recovery started."

When you relieved Mr. Ulrich, did you have any conversations with him about that particular entry that he had written, apparently written?

A I don't recall.

Q Again, it was your practice to review prior log entries, is that right?

A Yes.

Q Do you recall any discussions while you

were at Met Ed with regard to pressurizer level increasing reactor coolant system pressure decreasing during this March 29, 1978 event?

A No.

Q Did you receive any training after this March 29, 1978 event with regard to what had happened during the event?

A I don't recall any training.

Q Based on all of your training and your knowledge of how pressurized water reactors worked up until this time, March of 1978, and again I want you to think back and give me your recollection, would you have considered it unusual to have pressurizer level increase at the same time pressure was decreasing?

MR. GLASSMAN: If you are asking whether this was something that was considered, I will let him answer it, but if you are asking how he might have responded to some hypothetical situation which he doesn't recall then it's inappropriate.

MS. McDONALD: Mr. Glassman, we went through this before, and you let him answer and I said based on his training and his knowledge,

his training from everywhere and his knowledge of how pressurized water reactors worked, would he have considered it unusual to have pressurizer level increase while pressure was decreasing, and I am not limited to whether he knows of a specific event or anything like that.

MR. GLASSMAN: You can ask whether he was trained on that. I will permit him to answer that, but to ask him whether he might have considered it to be unusual to see something which he was not trained for is inappropriate. You can ask him what he was trained on and if he was trained on it.

Q Mr. Dominguez, were you trained that it was the usual reaction of a pressurized water reactor that pressure would go down while pressurizer level was going up?

A I don't recall receiving that specific instruction.

Q In fact, weren't you trained the opposite?

A I don't recall.

Q I take it as best you can recollect, you didn't express any surprise or astonishment to Mr. Ulrich upon reading this entry?

A I don't recall whether I was surprised or astonished or complacent after reading that.

Q Did you receive any training after this event which indicated to you that it was possible to have reactor coolant system pressure go down while pressurizer level was going up?

A Not that I can recall.

(Recess taken.)

Q Mr. Dominguez, prior to the Three Mile Island accident, did you know that voiding could occur in a pressurized water reactor in the primary system outside the pressurizer, and that that voiding could cause pressurizer level to increase?

A No.

Q Do you know that now?

A I really don't feel qualified in answering that. I have never assembled the facts of what had occurred in Three Mile Island and so I really don't feel qualified to say that.

Q I am not relating my question to anything related to Three Mile Island. I am just wondering if you know that today from any source?

A I have never seen it written or communicated to me that that was a source.

Q Just so the question is clear: I am not limiting my question to something you remember being told or something you remember experiencing. Human beings know things that they can't remember who told them. I know that the sun came up on March 1, 1963. I have no recollection of either seeing it or being told it.

I would like to know whether you know in your brain that voiding in the reactor coolant system can cause pressurizer level to increase based on all of your knowledge and training and college degree and information that came into your head?

MR. GLASSMAN: Perhaps we are quibbling, and this is a bit silly here, but it's a perfect example, when you say that the sun came up on March 1, in some particular area it may have been cloudy, and you are saying, you know, you are just assuming you know that. You are just assuming that. That's precisely the point. It's a silly example, but, for example, in another part of the world, you could be in a part of the world where it was cloudy.

MS. McDONALD: Are you saying that the sun didn't come up if it was cloudy? I am trying

to probe what this witness means by "no." I think you have totally distorted what that means here.

MR. GLASSMAN: I am not distorting anything. I think the witness has told you what the state of his knowledge is in this regard.

Can you ask him another question.

BY MS. McDONALD:

Q Mr. Dominguez, do you know today that voiding in the primary system of a pressurized water reactor can cause the pressurizer level to rise?

A Let me put it to you this way: I cannot prove it, therefore I don't know it. Aside from anything you feel counsel may have done to me this is something which I determined, you know, that's sort of the way I do business.

You must also recall that I haven't even looked or thought of a pressurizer outside of what I read in the papers since I left Metropolitan Edison. It's a subject distant from my mind for almost three years.

Do I know it, no, I don't know it. Does it occur, I would say if there is documented evidence that says it does, I would say yes it would; I would draw

that conclusion, I would work with it and I would in fact believe it. I don't feel I can sit here and assemble facts to convince myself but perhaps I could convince other people that it was true.

Q Ans when you read, according to your practice, Mr. Ulrich's entry in the shift test engineers log saying the pressurizer level came down proving that there was a steam bubble in each of the hot legs, did you disbelieve that?

MR. GLASSMAN: I just object. The witness said that he didn't recall actually reading that.

MS. McDONALD: He said it was his practice to review the log entries, Mr. Glassman.

MR. GLASSMAN: We agree on that, and he said that several times, counsel, but there is a difference between a practice and an actual recollection of a particular entry. He told you he didn't recall reading that particular entry.

Q Did you ever recall reviewing any shift test engineers log entry and thinking that what was written there was impossible?

A You are treading on the philosophical

regions of the question.

Q Can you answer it?

A I don't recall ever reading anything in the shift test engineers log and thinking that it was improbable.

Q And when, and I know you don't recall reading it specifically, and when according to your practice, anyway, you reviewed Mr. Ulrich's entry for March 29, 1978 which reads, "The pressurizer level was increased to approximately 200 inches, RCS pressure decreased to approximately 1200 psig before recovery started."

Did that remind you of the entry that you had made in September of 1977 where you wrote pressurizer level unexpectably increased when venting pressurizer and decreased pressure from 500 psig to 460 psig pressurizer level, pressurizer level increased approximately 150 inches during this evolution.

MR. GLASSMAN: The witness said he doesn't recall reading any of these particular entries, it's impossible to say when reading one brought back another.

He told you he doesn't recall reading

them, counsel. I object.

Q You don't recall thinking that there was any similarity between the events of March 28, 1978 and the events of September 8, 1977, you don't recall thinking that?

A I don't recall.

Q When you heard about the Three Mile Island accident, did that bring to your mind any events that had occurred while you were at Three Mile Island?

A No, it did not.

MS. McDONALD: Off the record.

(Discussion off the record.)

MS. McDONALD: We have copied certain portions of the documents which Mr. Dominguez produced, and I will represent that what I am about to mark came from what he produced.

The first document I would like to mark is a document entitled "Pressurizer Lecture Outline Prepared By: T. Hawkins."

I would like to have that marked as B&W Exhibit 910.

(Document consisting of a "Pressurizer Lecture Outline Prepared By: T. Hawkins," was marked B&W Exhibit 910 for identification.)

Q Can you tell me what that document is, Mr. Dominguez?

A That is a copy of the Lecture Outline that Tom Hawkins used to instruct us about the pressurizer.

Q Do you see your handwriting, little notes, anywhere on this document?

A Yes.

Q Are all the notes in the margin and otherwise your writing?

A They should be.

Q Do you see anything that's not your handwriting?

Just flip through it.

A The notes on the letter "REM-II-7," the signature of that, the handwriting on the three pages following the letter. That should be it.

Q Is that a document that you maintained while you were an employee of Metropolitan Edison?

A This was a document in my possession while I was an employee with Metropolitan Edison, yes.

Q And it was part of your training, is that right?

A Yes.

Q Is that true of all of the documents you produced?

A Yes.

MS. McDONALD: I would like to mark as B&W Exhibit 911, a document produced by Mr. Dominguez entitled "Decay Heat Removal System Lecture Outline Prepared By: S.G. Poje."

(Document entitled "Decay Heat Removal System Lecture Outline Prepared By: S.G. Poje," was marked B&W Exhibit 911 for identification.)

Q On the second page of this document, is that your handwriting?

A Yes.

Q Was this also a lecture outline prepared for your training?

A Yes.

MS. McDONALD: I would like to mark as B&W 912, a document entitled "Engineered Safety Features STE Briefing Notes Prepared By: M.J. Perry."

(Document entitled "Engineered Safety Features STE Briefing Notes Prepared By: M.J. Perry," was marked B&W Exhibit 912 for identification.)

Q As you go through that, Mr. Dominguez, would you note if you see something that's not your handwriting?

A Yes. Page 9 is not mine, page 10, page 11, page 18, the questions on The ESAF Quiz are not mine, the answers are.

Q Referring to that ESAF Quiz, do you see comments on occasion under your answer appear to be written in felt tip pen?

A Correct, those are not mine either. Other than the noted exceptions the handwriting -- the notes on these lectures are mine.

Q And again this was a document you maintained as part of your training, is that right?

A Yes, I had it, correct.

MS. McDONALD: The next exhibit, B&W 913, a document called "Transient Analysis Lecture Outline Prepared By: M.A. Nelson."

(Document called "Transient Analysis Lecture Outline Prepared By: M.A. Nelson," was marked B&W Exhibit 913 for identification.)

Q Again, could you please note the things that are not in your handwriting?

A The handwriting on the letter entitled

TMI-2 Reactor Building Spray System. Figure 1, the drawing following figure 1; the felt tip writing on figure 1-1; the printing on figure 2-1. The printing on figure 2-2; 2-3, 2-4, the two graphs following figure 2-4. Figure 2-7; other than the noted exceptions the written notes are mine.

Q Do you recall this lecture by Mr. Nelson?

A I do not recall this particular lecture.

Q Again, this is a lecture outline that you had as part of your training at Metropolitan Edison?

A That's correct.

Q Do you recall why you were being taught something about transient analysis?

A It was required.

Q By what?

A By Mr. Toole.

Q Should all the shift test engineers that you knew of have had this similar training?

A Yes.

Q Was this training at which only shift test engineers were present or other employees of Metropolitan Edison and GPU present?

A The training always had the four STE's present. There were on occasion seven other people

that could have been present depending upon the nature of the subject.

Q There were seven other people, is that what you said or several? I didn't hear you.

A Seven, I said.

Q Who were the seven?

A Typically the startup test engineers were there, an example being Poje or Gatto. I believe there were four, Mr. Toole and Mr. Hawkins were generally present. Depending upon the topic you would have a special lecture such as Lentz or Max Nelson.

Q Do you recall what Max Nelson's position was at Met Ed or GPU?

A I don't recall what his title was.

Q Do you know which organization he was employed by?

A GPU.

Q Have you ever had any training from B&G?

A Yes.

Q What training was that?

A On two occasions I attended their simulator.

Q When were those occasions?

A The first occasion was when I was an

engineer level 1 with Met Ed.

The second occasion was following the lecture series that we are discussing.

Q And how long a period of time were you down at Lynchb n each of those occasions, approximately?

A One to two weeks.

MS. McDONALD: I would like to mark as as B&W 914, another document produced by Mr. Dominguez entitled "TMI Unit 2 EP 2202-1.5 Pressurizer System Failure."

(Document entitled "TMI Unit 2 EP 2202-1.5 Pressurizer System Failure," was marked B&W Exhibit 914 for identification.)

Q Mr. Dominguez, can you tell me what this document is?

MR. GLASSMAN: Is this copied by counsel from part of the same materials?

MS. McDONALD: Yes.

A I don't recognize the documents.

Q Mr. Dominguez, let me show you the original of that document in the notebook that you produced. Maybe it will help you. This notebook bears the file number 2857-3-1.

MS. McDONALD: Mr. Glassman, I take it that was something put on by Kaye, Scholer, is that correct?

MR. GLASSMAN: I believe that was put on by counsel for identification purposes, and perhaps so we are clear on it, it has a note on the binding "SIU Training/A.J. Dominguez Books," then the first page of which has a mailing label with Mr. Dominguez' home address on it and the substantive page on it is a memorandum on GPU Service Corporation stationery bearing the heading "Training Schedule Update June 11, 1976."

And we are at this point looking at the section which has the mark on it DG -- no, a section which has a little marker in handwriting that says "Emergency Procedure," or "Procedures." It's Proc., which is the fourth of a number of tabs which have been inserted on these pages about a third of the way through the book.

BY MS. McDONALD:

Q Mr. Dominguez, did you put these tabs on this book?

A Yes, I did.

Q Could you take a look at the section which

is tabbed "Emergency Procedures," and I would just like to ask you if that refreshes your recollection as to whether you had any training on emergency or operating procedures while employed at Metropolitan Edison?

A No, it does not refresh my memory.

Q The last page of B&W Exhibit 914, is that your handwriting?

A Yes.

Q On the front of B&W Exhibit 914 --

MR. GLASSMAN: So I am clear on this: We have B&W 914, it's not stapled and the material that's been pulled out as part of 914 contains a number of typed pages starting at page 1.0 going through 11.0 and a separate page at the end that in handwriting says "Compatability of material," and "corrosion minimize."

Q Mr. Dominguez, do you see in the original of B&W 914 that the handwriting is in fact on the back of the last page of B&W 914?

It was just copied on a separate page when we copied it.

A Yes.

Q Can you tell me whether the handwriting

that Mr. Glassman just read in fact relates to the next document in the original exhibit labeled "Primary and Secondary Chemistry Plant Chemistry Lecture Outline"?

A I can draw a conclusion, but I couldn't really say for sure.

Q I take it seeing none of these documents refreshes your recollection that you at any time reviewed the pressurizer system failure procedure which is in your book here?

A No.

Q Do you see on the front of that procedure some handwriting, the first page?

A Yes.

Q Is any of it yours?

A No.

Q Do you see that somebody has written there "PORC 12/11"?

A Yes.

Q Do you know what the PORC is?

A Yes.

Q What was that?

A It is the Plant Operation Review Committee.

Q What was that committee for?

Do you recall?

A My recollection of the PORC was that it was to review procedures in light of safety related issues.

Q Do you see the name "Miller" at the top of B&W Exhibit 914?

A Yes.

Q Is that Gary Miller to the best of your knowledge?

A Yes.

Q Can you give me any explanation for why this procedure appears in your book?

MR. GLASSMAN: Are you asking him to guess?

A May I have the book back, please?

MR. GLASSMAN: Are you asking him to review the book and see if that can give him any indications --

MS. McDONALD: Yes.

A I can offer conjecture.

MR. GLASSMAN: We are not here for that. The question is whether reviewing the book -- let the record reflect that the witness has attempted to review the entire book or at least

apparently some beginning portions of it as well as the portions that counsel referred to. The question is does reviewing this refresh your recollection as to why emergency procedures, in particular were included in a particular section of this book?

THE WITNESS: I am not sure why those particular procedures were included in that section.

MS. McDONALD: I would like to mark as B&W 915, the beginning pages of the book that we have been referring to.

Let me just ask you to identify what is going to be marked as B&W 915 is, in fact, pages from the notebook that you produced?

THE WITNESS: Yes, they are.

MS. McDONALD: I would like to mark as B&W 916 the first page of the emergency procedures section, again, from Mr. Dominguez' book, is that correct, Mr. Dominguez?

THE WITNESS: Yes, that is correct.

(Document entitled "Training Schedule Update June 11, 1976, was marked B&W 915 for identification.)

(Two-page document entitled: "Emergency and Abnormal Procedures," was marked B&W Exhibit 916 for identification.)

BY MS. McDONALD:

Q I would like to ask you whether B&W 916 has your handwriting anywhere on it?

A Yes, it does.

Q Do you see opposite where it's written "Pressurizer System Failure," that you have written something?

A Yes.

Q Does it say "Thermocouple High Temp, Increase Pressure, Temp, Level in Reactor Coolant Drain Tank"?

A Yes.

Q Is that your handwriting?

A Yes, it is.

Q Does seeing that there refresh your recollection as to whether you ever reviewed the pressure system failure procedure?

A Quite truthfully, no.

MS. McDONALD: I have no further questions.

EXAMINATION BY MR. GLASSMAN:

Q Mr. Dominguez, I believe at the beginning

of your testimony today, you testified that when you were in the Navy that you had never actually seen solid operations, is that correct?

A That is correct.

Q Do you recall being told or instructed in the Navy whether or not it was appropriate to operate in a solid condition?

A Yes.

MS. McDONALD: Object to the form.

A Yes, and we were instructed not to operate in a solid condition.

Q Were you instructed as to any situation where it would be appropriate to operate in a solid condition?

A No.

MR. GLASSMAN: I have no further questions.

EXAMINATION BY MS. McDONALD:

Q Your training that you just described or in the Navy were you told why it was considered inappropriate to operate in a solid condition?

A I cannot recall any specific reason why, but to the best of my knowledge it's because it is unsafe.

Q Is that because to the best of your

recollection, is that because operating in a solid condition can result in very rapid pressure increases?

A To the best of my knowledge, yes.

Q Based on your training in the Navy was it your understanding that solid condition meant all of the reactor coolant system full of water including the pressurizer?

A Yes.

MS. McDONALD: I have no further questions.

(Time noted: 1:25 p.m.)

-ooo-

ANDRE J. DOMINGUEZ

Subscribed and sworn to

before me

this day of ,1982.

C E R T I F I C A T E

STATE OF NEW YORK)
: ss.:
COUNTY OF NEW YORK)

I, NANCY A. RUDOLPH, a Notary Public within and for the State of New York, do hereby certify that the foregoing deposition of ANDRE J. DOMINGUEZ was taken before me on Tuesday, August 17, 1982;

That the said witness was duly sworn before the commencement of his testimony and that the within transcript is a true record of said testimony;

That I am not connected by blood or marriage with any of the parties herein nor interested directly or indirectly in the matter in controversy, nor am I in the employ of any of the counsel.

IN WITNESS WHEREOF, I have hereunto set hand this 27th day of August, 1982.

Nancy A. Rudolph

NANCY A. RUDOLPH

I N D E X

E X H I B I T S

-oOo-

C E R T I F I C A T E

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: ss.:
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IN WITNESS WHEREOF, I have hereunto set my hand this 27th day of August, 1982.

Nancy A Rudolph
NANCY A. RUDOLPH

I N D E X

E X H I B I T S

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

GENERAL PUBLIC UTILITIES CORPORATION, JERSEY CENTRAL POWER & LIGHT COMPANY, METROPOLITAN EDISON COMPANY and PENNSYLVANIA ELECTRIC COMPANY Plaintiffs, - against - THE BADCOCK & WILCOX COMPANY and J. RAY McDERMOTT & CO., INC. Defendants.	80 Civ. 1683 (RO) AFFIDAVIT

STATE OF PENNSYLVANIA)
: ss.:
COUNTY OF LUZERNE)

I have read the transcript of my deposition taken on August 17, 1982 and together with the attached corrections, it is accurate to the best of my knowledge and belief.

Andrés Domínguez
A. Domínguez

Signed and sworn to before me
this 26 day of October, 1982.

Marianne C Fetter
Notary Public

MARIANNE C. FETTER, NOTARY PUBLIC
BERWICK BORO, LUZERNE COUNTY
MY COMMISSION EXPIRES MAR. 4, 1985
Member, Pennsylvania Association of Notaries

Corrections to A.J. Dominguez Deposition Transcript
September, 1982

Page	Line	Correction
8	18	"machinest" should read "machinist"
8	23	"machinest" should read "machinist"
8	24	"on a nuclear plant trained," should read "on the nuclear plant,"
8	25	"machinest" should read "machinist"
9	5	"Greenland" should read "Greenling"
22	6	"recirulate" should read "recirculat
25	2	"level in a band to operate between" should read "level band to operate i
32	6	"they're" should read "they're an"
35	18	"documented or reviews what" should read "documented reviews that"
42	11	"They use" should read "I used"
54	5	"particular conversation" should rea "particular log entry"
58	8	"indicated" should read "indicating"
75	8	"lever" should read "level"
86	15	"Dominquez" should read "Dominguez"
89	24	"us" should read "it"
102	6	"Ans" should read "And"
109	19	"B&G" should read "B&W"