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Transcript of Proceedings

UNITED STATES OF AMERICA

PRESIDENT'S COMMISSION ON THE ACCIDENT AT
THREE MILE ISLAND

DEPOSITION OF: SCOTT NEWBERRY

Bethesda, Maryland

July 31, 1979

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UNITED STATES OF AMERICA

PRESIDENT'S COMMISSION ON THE
ACCIDENT AT THREE MILE ISLAND

DEPOSITION OF SCOTT NEWBERRY

Room 6704
Maryland National Bank
7735 Old Georgetown Road,
Bethesda, Maryland

July 31, 1979
9:20 a.m.

APPEARANCES:

On Behalf of the Commission:

Stan M. Helfman,
Gary Sidell

On Behalf of NRC:

Mark Chopko, Esquire

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PROCEEDINGS

Whereupon,

SCOTT NEWBERRY

having been first duly sworn, was called as a witness herein, and was examined and testified as follows:

EXAMINATION

BY MR. HELFMAN:

Q. For the record, will you please state your full name?

A. Scott Newberry.

Q. Have you ever had your deposition taken before?

A. No, I have not.

Q. I will explain to you some of the characteristics of a deposition.

The testimony you are about to give today is sworn and, therefore, will have the same force and effect as if giving your testimony in a court of law. The testimony will be reduced by the court reporter into transcript form and you will be provided with a copy and an opportunity to make changes in it which you deem necessary.

However, you should be aware that if you make changes in the deposition we will have the opportunity to comment on those changes and if they are substantial, they may adversely affect your credibility. For this reason, it is also important that you ask for clarification of any

questions that are asked before answering if you don't understand the import of the question.

For the benefit of the court reporter, give audible responses because it is difficult to record nods of the head or other gestures.

Allow me to complete a question before answering even if you anticipate where the question is going and I will try to remember not to ask questions while you are completing your answer.

It has been our practice at the conclusion of a deposition not to terminate it, but to recess it; in the event that we have additional questions to ask you we will reconvene the deposition.

Do you have any questions?

A. No.

Q. Were you asked to bring a resume with you?

A. Yes.

Q. May I have that, please?

MR. HELFMAN: May we have this marked as the first exhibit to the Newberry deposition.

(Whereupon, the document referred to was marked for identification as Newberry deposition exhibit one.)

BY MR. HELFMAN:

Q. Mr. Newberry, could you please begin by informing

us of your title at NRC for the record and following that with a brief description of your responsibilities?

A. My title is reactor engineer. I work in the reactor systems branch. I am primarily responsible for reviewing construction permit and operating license applications in the areas as I believe described in my resume.

They would be over-pressure protection of the reactor coolant system, missiles generated inside the containment, leakage detection systems for the reactor coolant pressure boundary inside containment, residual heat removal systems or decay heat removal systems, reactivity control systems, emergency cooling systems and other reactor system components.

Q. Who is your immediate supervisor?

A. Gerry Mazetis.

Q. Has that been the case the entire time you were with this particular department?

A. Yes, that is correct.

Well, he has been my immediate supervisor up until the time of the accident and through a few weeks, we reorganized approximately July first.

Q. I would like to show you a document dated January 10, 1978, signed by Thomas M. Novak, chief of the reactor systems branch and ask you if you have ever seen it

before.

MR. HELFMAN: I note for the record that this is an exhibit to the Sandy Israel deposition.

THE WITNESS: Yes, I have seen it.

BY MR. HELFMAN:

Q Can you describe the circumstances as to how this document came to your attention?

A As is normally the practice, when a review reminder or a memo like this is written, they are distributed internally in the branch. I suppose I found it in my basket and read it when I picked it up from my mail.

Q Do you recall receiving it approximately January 10, 1978?

A Approximately. I only assume that because of the date on the memo.

Q You received it at about the time the memo was promulgated?

A I think so, yes.

Q Who is Mr. Novak?

A My branch chief in reactor systems.

Q Is he Mr. Mazetis' boss?

A That is correct.

Q What is the purpose of distributing memoranda to an engineer such as yourself from the staff?

A It is to remind the engineer to or request that

he look at something on the docket he is reviewing, normally. Sometimes it is a point that has come up as a result of another engineer's review and was distributed for everybody's information.

Q I would like to read to you two paragraphs from a document that has already been marked as exhibit number two to the Sandy Israel deposition. It is a summary of main factors that caused and increased the severity of the Three Mile Island incident as stated by Chairman Hendrie April 10, 1979.

At page 10, paragraph 2, it reads, "The pressurizer electromatic relief valve which opened during the initial pressure surges failed to close when the pressure decreased below the actuation level. This failure was not recognized and the relief line closed for some time."

Paragraph 3 reads, "Following rapid depressurization --"

A Excuse me. The relieve line closed?

Q There is a grammatical mistake. It should read this failure was not recognized nor the relief ~~line~~ valve closed for some time.

And paragraph three reads, "Following rapid depressurization of the pressure ~~riser~~ the pressurizer level indication may have led to erroneous inferences of high

level in the reactor coolant system. The pressurizer level indication apparently led the operators to prematurely terminate high pressure injection flow even though substantial voids existed in the reactor coolant system."

Based on your present understanding of what occurred at Three Mile Island in March of this year, would you agree with Chairman Hendrie that these two factors were among the main factors that caused or increased the severity of the accident?

A Yes, sir.

Q Referring to the January 10, 1978, memorandum which was distributed to you in January of 1978, and signed by Mr. Novak, let me read to you several paragraphs from this memorandum.

Paragraph one, beginning with the fourth line from the top, "However, under upset conditions such as prolonged relief valve opening and accidents [illegible] where significant voids are formed in the primary system. It may be possible to end up with a two-phase mixture in the pressurizer that is not at the highest temperature in the primary system. Under these circumstances additional loss of primary system inventory or ~~slippage~~ leakage in the primary system may not be indicated by pressurizer level. This situation has already occurred at Davis-Besse one when a relief valve stuck open."

And then from paragraph three, "Although the safety analyses do not require termination of the make-up system, operators would control make-up flow based on the pressurizer level as part of their normal procedures. As a result, under certain conditions where the pressurizer could behave as a manometer, the operator could erroneously shut off make-up flow where significant voids occurs elsewhere in the system or loss of inventory is continuing."

Would you agree that the memorandum distributed to you and signed by Mr. Novak essentially predicted the two factors which I read to you from CHairman Hendrie's summary of main cases in the Three Mile Island transient of March of this year?

A. No, I don't think it is as simple as that. I don't think you can state it that simply.

Well, when you read the first paragraph I believe in the memo, first of all, the memo was entitled loop seals and pressurizer surges, and it appears to attribute the problem with the pressurizer level indication to the loop seal.

Q. Could you describe to me what the term loop seal means?

A. Loop seal specifically relating to the way that the TMI two plants and the B&W plants in general are

designed. The enclosure describes it better than I could.

Q The second page of the January 10, 1978 memorandum is a drawing of a pressurizer.

A That is correct.

Q This upsidedown half-circle would be known as a loop or a loop seal?

A I guess a loop seal. That is correct. A curved portion of the pipe.

Q Correct me if I am wrong -- my understanding was that this portion is known as the loop and when the circumstances described in the memorandum exist and you have the differential in pressure and you have coolant caught inbetween that you then have this sealed and that is why this is referred to as a loop seal. Are you saying the lopp itself is referred to as a loop seal?

A At times I have heard it referred to that way, yes. It is referred to as a loop seal even when all of this is filled with water, for example.

Q Or if the --

A This is normally filled with water.

Q If the hot leg were empty, the pressurizer were empty and this semi-curved pipe were empty, would this still be referred to as a loop seal?

A I suppose so, yes. I have heard it referred to as that, yes.

Q Are you aware of whether loops (loop seals are commonly found in B&W design plants?

A I have heard that they are commonly found specifically in B&W plants.

Q Do you know if TMI-2 design contains this loop or loop seal?

A I have been told that, yes.

Q Could you continue with your explanation of why you feel the memorandum does not predict the factors addressed by Chairman Hendrie?

A In retrospect, I think you may be able to come to that conclusion, but I don't think it would be clear -- you know, having been through the TMI scenario -- but there are many other indications that an operator has available to him in the control room to base his actions upon, and therefore should a valve open in the top of the pressurizer, depressurizing the plant, causing ECCS to come on, it is not clear that just pressurizer level would be the primary instrument causing him to turn off make-up.

Q Are you finished?

A Yes.

Q Do you know if Davis-Besse contains the same loop or loop seal design?

A I assume so. I don't know that for sure. Like I say, I have heard all B&W ~~is~~ plants are designed that way.

Q Davis-Besse is a B&W design?

A That is correct.

Q If we assume that the operator prior to TMI-2 commonly relied on pressurizer level as an indication of core condition or core coolant level or primary system coolant level, would you then agree that this memorandum predicted the factors addressed by Chairman Hendrie?

A The beginning of your question was if we assume that?

Q Yes. Hypothetically. If we assume without deciding that the operator relied primarily or exclusively on pressurizer level as the indication for primary coolant level or core collant level, would you then agree that the Novak memorandum of January 1978, predicted the factors addressed by Chairman Hendrie?

We are making a hypothetical assumption now.

A If he assumes solely the pressurizer level -- if we assume that the operator will turn off high pressure injections based upon a high pressurizer level and leave it off when the pressurizer level is high, then given the event of Three Mile Island, yes, it could lead to a severe consequence.

Q Eliminating post-TMI learning, the first sentence of paragraph three of the memorandum reads, "Although the safety analyses do not require termination of the make-up

system, operators would control make-up flow based on the pressurizer level as part of their normal procedures."

The final sentence of the final paragraph of the memorandum reads, "For OL review procedures should be reviewed to insure adequate information before the operator terminates make-up flow."

Would you agree from those two sentences that this memorandum assumes that the operator relies primarily or exclusively on pressurizer level as an indication of primary system level?

A Yes, that is what it says. I guess I can say that at the time of this memo I had not looked at any operating procedures myself.

Q So at the time you received this memorandum you did not know whether operators did or did not rely exclusively or primarily on pressurizer level indication to determine primary system level?

A That is correct. My operating experience personally in the Navy would tell me he probably would.

Q He probably would rely on pressurizer level?

A Yes.

Q Do you know if other plant designs such as Westinghouse or Combustion Engineering contained the loop or loop seal design as well as B&W plants?

A I have been told that they do not have a loop seal.

Q So this memo would be used by you primarily for review of B&W plant CP's on OL applications?

A I am not sure that is clear. I don't know -- it says for OL reviews, procedures to be requested. It doesn't say for B&W OL reviews.

Q The first sentence of the first paragraph reads, "Loop seals in the pressurizer surge line are used in some plant designs (noted in B&W)."

Did you deem this memorandum to refer to a generic concern with respect to B&W plants when you received it in January of 1978?

A It is difficult for me to remember receiving the memo and exactly what I did when I did receive the memo. It was over a year and a half ago.

Q Do you recall whether this first sentence which refers specifically to B&W plants caught your eye when you received the memorandum?

A I don't recall.

Q You will note that in the last paragraph it refers to both operating license reviews and CP reviews.

A Yes.

Q What is the evil to be avoided by insuring that procedures would provide the operator with accurate information so that he does not rely on pressurizer level as an indication of core coolant level when there may be

loss of coolant or voids and erroneously turn off the HPI -- what is the concern?

A. The concern is uncovering of the core and fuel damage. Although I don't believe that is mentioned in the memo.

Q. Is it a rather obvious implicit concern in this memorandum?

A. I don't believe it is that obvious in the memo, no.

Q. Well, there is an obvious concern in this memorandum, is there not, for erroneous operator action based on inaccurate indication of core coolant level based on pressurizer level and operator turning off HPI in light of this erroneous information?

That is rather obvious from this memorandum; is it not?

A. Fine. Yes.

Q. Do you agree?

A. That is obvious, I suppose. Yes.

Q. And is the obvious concern for the operator turning off HPI under thos circumstances core uncovery or fuel damage?

A. I guess it depends who is reading the memo whether it is obvious or not.

Q. Was it obvious to you when you received this

memorandum in January?

A No, I don't think so. That is why I think it is not obvious.

Q From post-TMI learning it is obvious?

A Yes, I would say from post-TMI learning it is obvious.

Q Have you had an opportunity since January 10, 1978, to use this memorandum or the concerns that it raises in reviewing a CP or OL application?

A The only plant I would have had opportunity to use it on is Midland.

Q Is that a B&W designed plant?

A Yes, it is. It is a plant similar to TMI-2, as a matter of fact.

Q And are you referring to a CP application or a OL application?

A It is an OL application.

Q You say is an OL application. Is this plant presently under review?

A It is docketed and is being reviewed, yes.

Q When did that review commence?

A I am not able to give you the exact date, but generally the fall of 1977, I would guess.

Q And it is still under review at this time?

A That is correct.

Q So the Novak memorandum of January 10- 1978, fell somewhere during the review of the Midland OL application?

A That is correct.

Q Was the Midland application assigned to you for review from the outset?

A No, it was not.

Q Who received it initially?

A Well, let me explain. I did the acceptance review for Midland.

Q Is that another term for construction permit?

A No.

Q What is an acceptance review?

A An acceptance review is conducted by the staff prior to the docketing of the application to determine whether the safety analysis report is acceptable for review. Let's say a review that is done to see that there is at least sufficient information in the document to review.

Q Is that done prior to the review of the construction permit application or is it the operator licensing --

A Excuse me. There is an acceptance review done both at the CP stage when the PSAR or preliminary safety analysis report is docketed.

There would also be an acceptance review done when a final safety analysis report is docketed for an operating license. I am referring to the FSAR or final

safety analysis report for the Midland operating license.

Q. And the acceptance review was done by you when -- in 1977?

A. Yes, the end of 1977.

Q. Is that -- what was the term again you used --

A. The acceptance --

Q. The acceptance review?

A. That is correct.

Q. What document is submitted to you for review?

A. The entire final safety analysis report, FSAR, is submitted to me for review.

Q. Is that provided by the applicant?

A. That is correct.

Q. And prepared by the applicant?

A. Prepared by the applicant. It is normally prepared by the applicant or for the applicant by his architect/ engineer. Yes. It is submitted by the applicant. He is responsible for the application.

Q. And your review of the SAR is confined to determining whether there is sufficient information to do an operating license review?

A. That is correct.

Q. After you did the review of the SAR, did you remain assigned to review of the Midland plant operator license application?

A Sort of, I guess is the way I would have to answer that. I was also reviewing other plants at that time and was involved in other work. The review, the round one review which it is called, was given to EG&G in Idaho. They performed the first-round review and provided questions resulting from that review to us.

Q Who is EG&G?

A I don't know what the abbreviation stands for. I am sure we could find out.

Q I would appreciate that.

And what is EG&G?

A EG&G, I believe, runs the national laboratory in Idaho. They were doing a little bit of review work for us at that time and I believe still are.

Q And they were involved in review of the operator license application or the SAR at that stage?

A They were responsible for -- the FSAR is the application for the license, yes. I guess the staff at NRC is responsible, but they are doing the review.

Q And did they provide the proposed questions to you which you referred to for review before they are transmitted to the applicant?

A That is correct.

Q And are you simply a conduit for transmittal of those questions to the applicant or do you do something

further with those questions?

A. No. We review the questions, go over them with the reviewers at the lab who prepare the questions and review the FSAR, and if we think some questions are not appropriate or we feel have already been addressed, we may be able to delete a question; or if we feel additional questions need to be asked, we will add questions.

Q. Do you recall when EG&G was retained to review the OL application?

A. No, I couldn't give an exact date. It was probably around the beginning of 1978, ~~that the change order was~~.

Q. Do you recall when their proposed questions were returned to you for review?

A. No. I can only guess based upon the date when we sent the questions to the applicant, which was -- well, excuse me. It was in March -- we forwarded the questions from our branch to project management in March 1978, so I received the questions from EG&G sometime prior to that.

Q. You were referring to a document there. Would you please describe for the record what that is, and may I see it?

A. What I have here is a document. It is a memorandum from G.R. Mazetis through T.M. Novak to D.B. Vassallo,

assistant director for LWRs, which contains the first-round questions on the Midland plant.

Q. This document is dated March 8, 1979. It consists of 14 pages of questions and a cover letter.

MR. HELFMAN: I would like to have this marked as exhibit two to the Newberry deposition.

THE WITNESS: Excuse me. I have more Midland questions here. That isn't the only one.

BY MR. HELFMAN:

Q. The additional questions that you have are also part of the first-round?

A. Yes, I have more first-round questions.

Q. All right.

MR. HELFMAN: I have received a document dated March 9, 1978, consisting of two-and-a-half pages of questions covered by a cover letter directed to D.B. Vassallo through T.M. Novak from G.R. Mazetis.

BY MR. HELFMAN:

Q. Are there any additional first-round questions?

A. As referred to by these memos, no. I believe project management who received these questions may have labelled them differently, but no, these are the only first-round questions as addressed by us.

(Whereupon, the documents referred to were marked for identification as Newberry deposition exhibits two and three.)

BY MR. HELFMAN:

Q What materials did you provide to EG&G in order to enable them to prepare first-round draft questions for the Midland plant?

A We, that is the branch, provide them with the FSAR, any amendments that have come in for the FSAR, and also branch -- well, the same documents that I would use to review the plant; that is the regulations,the standard review plan, regulatory guides, many branch positions that are applicable for the review.

Q Would that include a review memorandum such as the January 1978, Novak memorandum?

A I don't know whether they received that or not.

Q If this memorandum was in your file in January of 1978, when you referred the matter to EG&G for preparation of draft questions, would you have provided them with a copy of this memorandum?

A I didn't provide EG&G with the positions. The branch did.

Q Who in the branch did that?

A I don't know. It is coordinated by someone else

in the branch and I am not sure what the procedure is for getting the stuff out to EG&G.

Q. Would it have been another engineer on your team or would it have been your team leader or would it have been your team leader in conjunction with Mr. Novak?

A. It was probably another engineer in the branch who is responsible -- well, who coordinates the EG&G review. I am not sure.

Q. Do you know who that might be?

A. My supervisor would probably know.

Q. Mr. Mazetis?

A. Mr. Mazetis. I think at that time an engineer by the name of Byron Seigel was coordinating EG&G review.

Q. Is he still with NRC?

A. Yes, he is.

Q. How does he spell his last name?

A. I think s-i-e-g-e-l, or e-i.

Q. Is he still an engineer?

A. Yes. He was in the reactor systems branch.

Q. From the dates that you have provided, it appears that the Novak memorandum would have been in your hands if not at the time the material was provided to EG&G, certainly at the time the draft questions were returned to you for review.

A. That is correct.

Q Do you recall whether the concerns addressed in this memorandum were addressed in the draft questions for Midland proposed by EG&G?

A I don't remember. I don't think it was addressed.

Q Perhaps we should give you an opportunity to look over the draft questions.

A These questions you see there that I have shown you are the result of my review of their draft and what we sent to projects. That is not EG&G's effort.

Q I see. Do you have a copy of EG&G's proposed questions?

A Not with me. I may have a copy in my office.

Q Could you check and if so, could you provide us with a copy of that?

A Yes, I can provide you with that.

Q When you reviewed the proposed questions, did you review those questions with a view to insuring that the concerns addressed in this memorandum were addressed in the questions?

A I can't remember specifically what I -- what I did do, I remember when I went through,when I got the questions, is I went through my file of memorandums of this type and branch positions to see that everything was covered by EG&G. I do that, you know, whenever I ask ~~for~~ a round of questions.

It is the normal procedure. So I don't remember specifically what I did with that memo, though. Looking back through the questions recently, since Three Mile, I do not find the questions referencing or drawn from that memo.

There are quite a few questions you will note regardin loss of coolant ~~action~~ accident, small breaks, large breaks, but nothing specific on pressurizer level indication. s

Q And the review that you are referring to was a review of your questions proposed to the applicant which followed your review of the questions proposed by EG&G?

A That is correct. I don't remember. Thinking back, trying to remember what my action was when I did get this memo, I expect I probably discussed it with my supervisor, which is normally the case.

Q Mr. Mazetis?

A Mr. Mazetis. And although I am not too clear on this. Maybe we decided to wait until a certain point in the review. I don't honestly recall.

Q Did you ever discuss this memorandum with Mr. Israel, who is noted as the contact in the lower left hand corner of the January memorandum?

A I don't remember discussing it with him.

Q Has there been a second round of questions to applicants?

A. Yes, a second round of questions, if you want to refer to them as that.

Q. Continuing first-round questions?

A. Yes.

Q. In referring to the first-round questions, does that indicate that there is a second round of questions?

A. Like I say, there have been several rounds since March of 1978.

Q. Have the concerns addressed in the Novak memorandum of January '78, been addressed in questions in subsequent rounds of questions to the Midland applicant?

A. No, sir.

Q. What is the purpose of a review reminder? Isn't it to alert the reviewer to insure that these concerns are addressed in review of the operating license?

A. That is correct. At a certain point, like I say, the Midland review is still underway, and many of these areas brought up in these questions are still under review.

Q. At least in the light of the learning of TMI-2, it is likely that Midland will be required at some point to address these concerns, would you agree with that?

A. Certainly.

Q. But from January 10, 1978, through March 28, 1979, Midland was not required to address any of these concerns as far as you know?

A. That is correct.

Q. And the responsibility in this regard primarily was yours?

A. Yes, sir. I was responsible for that.

Q. Now, you indicated that you may have had a conversation with Mr. Mazetis concerning the applicability of this memorandum to the Midland review. Is that an assumption on your part or do you remember a conversation with Mr. Mazetis concerning this matter?

A. That is more an assumption than a remembrance, because normally when I get memos like this, I discuss them with him to see what their application would be.

Like I say, I just assume that I had that conversation with him, since it was my normal practice to do so. What we decided to do with the memo, I can't recall.

Q. Did you find a copy of this memorandum in your file when you reviewed your file for purposes of this deposition?

A. Yes, I did.

Q. And it was in the file where you normally keep such memoranda?

A. Yes, sir.

Q. You indicated that you have subsequent sets of questions that were posed to Midland?

A. Yes, sir.

Q In document form?

A Yes.

Q Could you provide us with copies, please?

A Yes. There is the acceptance review. Supplemental rounds.

(Documents proffered to counsel.)

MR. HELFMAN: Mr. Newberry has provided us with five documents, the first dated September 28, 1977 entitled "Acceptance Review of the Consumers Power Company, Midland Plants One and Two, Final Safety Analysis Report" consisting of five pages of specific commentary on the application covered by a cover letter and a routing list.

We would like to have this marked as an exhibit to the deposition.

(Whereupon, the document referred to was marked for identification as Newberry deposition exhibit four.)

MR. HELFMAN: The second is a document dated January 29, 1979, consisting of two pages of inquiries with a cover letter signed by Gerald Mazetis. We would like to have this marked as an exhibit to the deposition.

(Whereupon, the document referred to was marked for identification as Newberry deposition exhibit five.)

MR. HELFMAN: The next is a document dated December 27, 1978, consisting of six pages, apparently of reactions to responses provided by the Midland applicant with a cover letter signed by Robert Todesco, assistant director for reactor safety, and a routing list.

BY MR. HELFMAN:

Q I notice that on some of these memoranda Mr. Ross is on the route list and on others he is not, but Mr. Todesco is. Is there some explanation for that as to why some went to Mr. Ross and some went to Mr. Todesco?

A At some point Mr. Todesco took Mr. Ross' job as assistant director of reactor safety. I don't recall when that was.

(Whereupon, the document referred to was marked for identification as Newberry deposition exhibit six.)

MR. HELFMAN: And the last two, which may be marked together for convenience purposes, one is dated October 26, 1978. It consists of three pages of reactions to response from the applicant and a cover letter and the other is dated September 28, 1978, which consists of 22 pages and a cover letter signed by D.F. Ross, Jr.

(Whereupon, the documents referred to were marked for identification as Newberry deposition exhibits seven and eight.)

BY MR. HELFMAN:

Q. Mr. Newberry, you have stated that you have reviewed these memoranda recently in an effort to determine whether the concerns of the Novak letter were addressed in the questions propounded to the applicant.

A. That is correct.

Q. And you found no such reference; is that correct?

A. No specific reference to the memo.

Q. Did you find any questions --

A. Let me continue. Like I say, there are quite a few questions in there on the subject of loss of coolant ~~action~~ accident, small breaks, large breaks, emergency core cooling system questions, operations and a lot of similar things, but nothing specifically on pressurizer level.

Q. You found no questions specifically dealing with operator error and pressurizer level indication in the questions?

A. That is correct.

Q. I refer you to exhibit number two, a document entitled "First-round Questions", page 12, the last question, which continues on page 13, would you read that to

yourself, please?

(Witness reviewing document.)

BY MR. HELFMAN:

Q Have you finished reading?

A Yes, sir.

Q Does it appear that that question addresses the concern of erroneous operator action stimulated by pressurizer level indication?

A No.

Q The question reads, for the record, "With regard to an inadvertent operation of ECCS during power operation, section 15.5.1.2 states that after reactor trip, the operator terminates HPI flow. Is this action necessary for plant safety? Provide a sequence of events table which includes the time frame for operator action. Also, provide figures showing appropriate plant parameters as a function of time, pressure, DNBR, pressurizer level, et cetera."

To what does that question refer?

A That question refers to the inadvertent operation of ECCS at power. If, for some reason, the ECCS system actuated inadvertently, not because of a transient like stuck open valve, and it begins filling up the system with water, pressurizer level starts increasing, the pressure will increase based on certain parameters, time in life of the

core, moderator temperature coefficient and what you have, the plant would probably trip on high pressure or the power would decrease because you are injecting boron, it is difficult to say.

But there is no voiding in the core. There is no transient response as indicated in this memo here.

Q. The question is concerned with operator actuation of HPI rather than operator termination of HPI?

A. That is correct. It could have been an inadvertent actuation of the ECCS by the operator.

Q. Would you agree that the failure to address the concerns raised in the Novak memorandum in any of the question sets propounded to the applicant was an oversight?

A. It may have been an oversight. I guess that is one of the alternatives. I have tried to figure out what I did with this memo. It may have been an oversight. We received these memos periodically and review reminders. We generate new positions and areas periodically. I suppose that is a possibility.

Like I say, another possibility would be that we decided to wait because probably Midland hasn't even generated their operating procedures yet. The plant is still under construction and wouldn't be loading fuel for at least I suspect a couple of years now.

It is hard to say. I don't remember.

Q. The last paragraph, first sentence of the Novak memo reads, "It is recommended that the basis for the design requirement be studied carefully for all CP reviews with the object of determining if the loop seal can be eliminated."

With respect to that potential solution to the problems addressed in the Novak memorandum, would it have been necessary to wait until the Midland applicant developed procedures?

A. I don't understand the question.

Q. Well, there are two potential solutions which are suggested in the last paragraph. One is a design solution, elimination of the loop seal. The second is a review of operator procedures.

MR. CHOPKO: I think the record should note that the solutions would occur at two different stages. The first sentence calls it a CP stage review and the second sentence indicates that it is the OL stage review.

THE WITNESS: If we asked a question, I suppose, you know, at the first or second-round stage, the applicant could have responded by saying when we write our procedures, they will include such and such. I am just trying to recollect or guess even, because I don't really recall what I went through when we discussed this memo in January 1978.

BY MR. HELFMAN:

Q. If at the time of OL review a design defect was noted, and the applicant has already received his construction permit, is it then too late to do something about the design defect?

A. If it is a safety defect, that is, important to safety, no. It can be fixed. It depends on -- or the plant could be shut down, depending on what the impact is.

Q. I note that Mr. Ross received a copy of January 10, 1978, memorandum. He was listed as a CC at the bottom. And I also note that he was provided with several sets of the questions which are propounded to the Midland plant. What would Mr. Ross' function have been? Why was he provided with copies of review memorandums and proposed questions?

A. I know it is normal procedure, I guess, for the assistant director to receive information copies of what the staff under him is doing. I am not sure what he normally does with them. Every once in a while I know if he sees a question that he is interested in he might discuss it with me.

Q. During the time you have been an engineer in this department, have you ever had an occasion to address a generic concern which you felt should be called to the attention of your superiors or perhaps other departments within the NRC?

A. I don't understand what you mean by address a generic concern.

Q. Well, let's assume hypothetically that in January of 1978, the full import of the Novak memorandum struck you and you alone. How would you have gone about calling the matter to the attention of your superiors or other departments within the NRC?

A. I am sure if it was a safety concern that came about that I felt was important as you suggest, I first would have gone in and talked with my supervisors, Mr. Mazetis and Mr. Novak, and come up with a resolution of what action is necessary, whether it is write a memo, discuss with other people, maybe more rapid action would be necessary.

But I know that path is always available.

Q. Have you ever employed that path?

A. I have talked with them on many items, many, many items. You can see there are a lot of questions here, so, yes, I have talked with them on a number of issues.

Q. Based on normal procedures, after having discussed such a concern with your superiors, in the event a decision was made to notify other departments, who would be responsible for doing that?

Would that be you, Mr. Mazetis or Mr. Novak?

A. I don't know where that responsibility is defined.

When you say other departments, do you mean -- who do you mean?

Q. For example, you might have concluded after reading this memorandum that the operator 109 reactor branch should know so that the concern could be addressed to reactors which already had their construction permits and operating licenses.

A. Normally -- I don't know normally -- many times we will forward them information copies of things like this.

Q. Have you yourself ever notified another department or office about a concern that you recognized which had generic implications?

A. Well, I have communicated with operating reactors many times. They call me a number of times to see, you know, what I have been doing on plants, and I have talked to them many times to see what they have been doing. I can think of one specific example on the Midland review. Since Midland is similar to a number of operating B&W plants -- as a matter of fact, it is the last of a certain vintage in the 177 fuel assembly plants to be licensed -- all the others are licensed -- I have talked to them a number of times on issues that had come up on the operating reactors and have expressed, you know, concerns on items that may be being reviewed on operating reactors that I know are applicable to Midland and say, look at this when you are

looking at it on that operating reactor. There is an open line of communication.

Q Was this both pre and post TMI?

A Oh, yes.

Q Do you know when the TMI-2 operating license review was before your team or group?

A Pardon me -- do I know what?

Q Do you know when the TMI-2 OL application was before you division for review?

A Before our division -- at some time, it was.

Q Do you know when?

A Not specifically.

Q Did you work on that application review?

A No, I did not.

Q Do you know who did?

A Yes.

Q Who did?

A Jim Watt.

Q Is he an engineer?

A Yes, he is.

Q Whose team is he on?

A I don't understand. What branch?

Q You have indicated that you were on Mr. Mazetis' team.

A In his section. He is in Sandy Israel's section,

or was prior to TMI-2.

Q Prior to the event, prior to the March transient?

A Prior to the March transient, yes.

Q So at the time the operator license application was being reviewed by your branch, it was being reviewed by Sandy Israel's section?

A I think so. I am presuming that. I came to work for the Commission at the end of 1976, and I believe TMI-2 was being reviewed prior to me ever coming to work at NRC. I believe I recall Mr. Watt working on the TMI-2 application when I came to work for the Commission.

Q Do you know when TMI-2 received its operator license?

A No.

Q Would it have been 1979; do you know?

A It is before 1979, I think. Some time in 1978. I don't know the date.

Q Do you know if it was before or after the Novak memorandum of January 10, 1978 was promulgated?

A I do not know that, no.

Q What were the responsibilities of or what are the responsibilities of Mr. Mazetis in the review of the Midland plant as your section leader?

A I am not familiar with all of his responsibilities. I know I report to him. He will review my work. Specifically

on a review,he will go through the questions one by one and we will discuss them and as they move up the chain prior to going to the licensee, he would stay in direct touch with them as they were discussed with management. He supervices my review.

He watches the schedule of the review. He is responsible for getting moving my -- for my review time, what plants I review.

Q. Were you aware at the time of the promulgation of the Novak memorandum of the Davis-Besse one transient which is referred to in the memorandum?

A. Yes, I was aware that there was ~~another~~ a transient at Davis-Besse one.

Q. Were you aware of the nature of the transient?

A. Not really, no. Iknew that they had a stuck open relief valve on the pressurizer. I didn't ever get involved in the details of that event.

Q. Did Mr. Mazetis ever provide you with an investigation report concerning the Davis-Besse one transient?

A. No. I don't think I have ever seen that.

Q. Were you aware at the time of the promulgation of this memorandum that the operator had terminated HPI during the Davis-Besse one incident?

A. I don't recall. I think it is referred to in the

memo. Yes. It is referred to in the memo here, the January 10th memo, but I don't recall the details of the Davis-Besse one event. At least, I didn't then. I am more familiar with it now.

Q At the time you are reviewing an OL application, do you receive investigation reports concerning transients at plants which might be pertinent to the questions you propound to an applicant?

A Yes. Let me say a couple of things about LERs. I am the fellow in the branch that gets the LERs routed to us in the reactor systems branch and screen them and basically the procedure I have followed and have discussed with Mr. Novak is to look at the LERs and determine which ones are even applicable in any way to reactor systems, whether it is a transient, a design problem or even auxiliary systems related in any remote way to our review.

I will do two things with that group of LERs. If I know that there is a person in the branch specifically involved with a certain item, it may be the review of ATWAS or a failure of reactor coolant pumps or whatever, I would give the LER to him for his attention; if they are just general information on maybe component failures, transient that occurred at a plant such as a loss of off-site power, I periodically say once a week or whenever the number

of LERs gets reasonable, I will route them to all the members of the branch for their information.

Q. Do you recall whether or not you routed the LER on Davis-Besse to members of the branch?

A. No, I don't remember.

Q. Is there some way to find out?

A. I wouldn't think so. The LERs are sent around, hundreds of them that come in. As they are routed around, a lot of them are probably thrown away. I don't recall personally seeing the Davis-Besse LER. I don't remember. But it would be difficult to find.

Q. If I mentioned the name Carl Michelson, does that ring a bell?

A. Yes.

Q. Did you know of him prior to the TMI-2 transient in March of this year?

A. No.

Q. Were you aware of his memorandum prior to TMI-2 in March of this year?

A. No.

Q. Do you know who Jesse Ebersole is?

A. Yes.

Q. Who is Jesse Ebersole?

A. He is a member of the advisory committee for reactor safeguards.

Q. Are you aware of any contacts between Sandy Israel and Jesse Ebersole prior to the January 1978, memorandum?

A. I knew that Mr. Ebersole was asking questions on several plants in the review process regarding small breaks. And I know Sandy Israel had responded to some of those questions at ACRS. That is about the extent of my knowledge.

Q. Do you know if Mr. Israel's responses to questions posed by Mr. Ebersole concerning some plants were formal responses in written form or at a public meeting at which a transcript -- for which a transcript would be available or is it your impression that these were informal contacts?

A. I am not familiar with any informal contacts he had with Mr. Ebersole. I know that any contact he had from ACRS would be recorded in transcripts.

Q. How do you know about the formal contacts between Mr. Ebersole and Mr. Israel?

A. I know that on a plant I was working on a construction permit for, the Pebble Springs units, some questions were posed by ACRS, written questions that were directed to the applicant for their responses. They provided responses, and those responses were discussed to some degree with the ACRS.

I wasn't involved in any detail with the review of their responses. But I can't recall whether Dr. Israel

discussed them with the ACRS or not. I know before the ACRS meetings when I had a meeting I think with Mr. Novak, Mr. Mazetis and Dr. Israel, looking over those responses, that he was going to address any -- he was going to be ready to address any questions on the small break questions generated by ACRS.

Q. Are the questions generated by the ACRS normally routed to your division or your branch?

A. Questions relating to our branch responsibilities, yes. As I recall -- I haven't been through that many ACRS situations in my experience at the NRC, and I am not sure really how the questions are handled, whether informally or formally.

Q. But you have seen ACRS questions come through your branch?

A. Several times. Yes, I know the Pebble Springs questions, and I think a couple of other plants, they may have prepared with their agenda some questions that they might want the staff to be prepared to discuss at the meeting.

Q. Are the responses from the applicant likewise routed through your branch?

A. I don't know that they are routed through the branch, no. When you say routed through the branch, you mean everybody in the branch?

Q. Anyone in the branch.

A. Anyone in the branch.

Q. Anyone on Mr. Mazetis' or Mr. Israel's team?

A. Well, I know in the case of the Pebble Springs, I think it was quite unusual for the applicant to respond to ACRS questions directly in writing. At least, I was told that was unusual.

Q. And the responses on the Pebble Springs plant were routed to your branch?

A. Were routed. I know Mr. Novak, Mr. Mazetis and I and Mr. Israel had copies.

Q. Do you have copies of those questions with you?

A. No.

Q. Do you recall whether the questions promulgated by the ACRS concerning the Pebble Springs application addressed the concerns which are addressed in the January 10, 1978, Novak memorandum?

A. I don't remember.

Q. You don't recall question number six?

A. No. I haven't looked at those questions in a long time.

Q. Who told you that it was unusual for the applicant to respond in writing to questions propounded by the ACRS?

A. I don't remember. I think -- working on Pebble Springs it was my first year with the Commission and I wasn't that familiar with the procedural aspects of a

review. I don't recall.

Q Do you recall if there were ACRS questions routed through your branch concerning the TMI-2 OL application?

A I am sorry. I get confused by when you say routed through the branch.

Q What would be the more appropriate terminology?

A Questions from the ACRS?

Q Questions addressed by the ACRS to the applicant.

A To the applicant?

Q To the utility.

A I am not familiar with any situation where the ACRS addresses questions directly to the utility other than Pebble Springs.

Q It was unusual in that respect?

A Yes. Excuse me. To continue on that, the questions I am familiar with that the ACRS directs to the utility have always been at the ACRS hearing, at the public meeting. I am not familiar with any written questions, I guess I should say.

Q Other than the Pebble Springs situation?

A Other than Pebble Springs, yes.

Q Were you aware prior to the TMI-2 transient of March of this year of a transient at TMI-2 which occurred

in March of 1978, concerning a stuck open PORV?

A Yes. I think I heard about that one.

Q Did you address any inquiry to the Midland applicant concerning PORV reliability or indication?

A I don't believe I addressed anything on reliability or indication. I asked a question on stuck open PORV, I think. And they provided an analysis in their final safety analysis report for a stuck open -- I don't know if it is PORV. I think they call it a stuck open safety valve or relief valve analysis.

Q I show you the September 28, 1978, set of inquiries addressed to the Midland plant applicant and call your attention to page 22 of the inquiries, the paragraph numbered (5), and ask you if that is the inquiry addressed concerning that topic.

A You are referring to question 211.105, and that is a subpart to a question relating to their over-pressure protection system while operating at low temperatures. It so happens that on this plant, Midland, they are intending as of this time to use the power operated relief valve for that type of protection.

Q Over-pressurization protection?

A Yes. While the plant is shut down in a cold condition. It is really an entirely different situation than what we are talking about on valve reliability while

operating power, because this -- it is an item which is still under review. Their use of that valve -- I am not sure what they are going to end up with as far as the design on that plant. It is a new requirement that has come about in the last couple of years. It wasn't included in the construction permit review of Midland.

Q Is your review of construction permits and operator license applications confined primarily to safety related items?

A Primarily, yes. That is correct.

Q Is the PORV considered a safety related item with respect to the Midland plant?

A It depends upon your definition of safety related. The question that we just finished discussing, over-pressure protection while operating at low temperatures, that system is installed to prevent violating the upset limit, ~~amount of~~ not a safety limit. There are certain criteria defined in our branch position which must be met by that protection system.

The system is not really defined as a safety system, but must meet certain criteria to prevent violation of what is called appendix G, a pressure temperature limit.

Q Are these criteria contained in a memorandum?

A The criteria for over-pressure protection while operating at low temperatures are contained in a branch

position, yes.

Q Is the PORV addressed in that memorandum or position?

A Not specifically, no. The position states that the system designed by the applicant must meet certain criteria. We don't tell him what components must be used in that system. It is not necessary for them, for example, to use a PORV. Maybe he would install a new safety valve, an electromagnetic valve or use valves on another system. It happens that Midland and other plants operating are using the power operated relief valve.

Q In the event the power operated relief valve was not used to address the concern of over-pressurization in the shut-down situation, but was used for some other reason, some other pressurization protection reason, would it be addressed by your branch?

A If it was used for another reason, yes. It would be addressed. If it was used for a safety related reason, it would be addressed, yes. We are responsible for over-pressure protection of the reactor cooling system pressure boundary and the devices used to relieve pressure.

Electromatic relief valves are not normally used for that protection.

Q When you refer to an item as safety related, what

is the definition, pre-TMI-2 incident, that you are referring to?

A. I don't have an exact definition of safety related that I could give you. I could say -- I will make an attempt.

Q. Please do.

A. A safety related component would be one that was necessary to mitigate the consequences of a transient or accident, that is, to prevent violation of safety limits. Or would be relied upon to prevent the release of radioactive material.

Q. Let me read from the first paragraph of your resume and ask you if this expresses the same definition or another definition of safety related. The reactor systems branch is responsible for evaluating the capability of reactor safety systems needed for safety shut-down during normal and accident conditions, including the performance of emergency core cooling systems.

A. Yes. Safe shut-down would be another aspect of what I was saying.

Q. Was the PORV considered a component which fell within this definition prior to TMI-2?

A. No.

Q. In such event would indication of PORV position be considered a safety related item?

A In such an event, referring to the TMI-2 event.

Q In the event that the PORV is not considered safety related, would indication of a non-safety related item be considered safety related?

A We don't in our branch normally get involved with the instrumentation, per se. Not normally would be the response to the question.

Q Are you aware of whether the Midland plant has a position indicator for the PORV?

A No, I haven't reviewed that aspect.

Q Do you expect to review that aspect?

A Subsequent to TMI-2, my responsibilities having shifted, I don't even know for sure that I will be back on Midland review, but I would expect that the PORV will receive more attention in the future, including the indication of the valve. That has been the recommendation from many groups since TMI-2.

Q Do you know who would be responsible for reviewing it in the event that you do not review it?

A No.

Q Would such a review normally fall outside the scope of the review conducted by your branch prior to the TMI-2 transient of March of this year?

A The indications on non-safety grade equipment I don't think would be reviewed by my branch prior to TMI-2.

I am not sure that any branch would look at them. Instrumentation and control systems branch looks at indications for the operator to some degree, and control systems, but I am not sure that they would look at something like that, either. I don't think you would find any of that information in a safety analysis report for review anyway.

Q What are some of the characteristics of a safety related component as opposed to a component which you would review because of its pertinence to pressurization control systems?

A Safety related components are designed to meet certain standards. They are normally required to be seismically qualified and receive a high degree of quality control, quality assurance.

They are electronical components designed to certain IEEE requirements, certain IEEE standards and requirements which the electrical people on the staff would review.

They are required to meet single failure criteria as defined in the regulations. They are required to meet as defined by certain ASME requirements if it is a mechanical component.

Q Does that include redundancy?

A Yes.

Q Testability?

A. Testability.

Q. What is testability?

A. I think testability is probably defined in one or several of the IEEE documents for electrical systems. I don't have an exact definition for that.

Q. Would that involve the ability to test the component while the plant is operating without scramming the reactor?

A. I don't know.

Q. Do you recall whether you were responsible for posing questions to Davis-Besse regarding their application for an operating license?

A. Yes. I recall I was not responsible.

Q. Did your responsibilities include reviewing operator license applications or construction permits for plants other than those of the B&W design?

A. Yes.

Q. Did you review such applications for Westinghouse plants?

A. Yes. I reviewed a construction permit -- well, not in detail. It was a plant that had already been evaluated quite a while ago by the staff and certain items were to be addressed on it in 1977. The plant was Shearon-Harris. I looked at individual items.

I did not do a complete review.

Q Did you review the ECCS actuation on that plant?

A No, I did not.

Q Are you aware of a transient which occurred at a Westinghouse plant in Europe?

A Yes.

Q Which occurred in 1974, or 1975?

A I don't know the date.

Q Are you aware that ECCS was actuated in that plant by a combination of pressure level and pressurizer level?

A My last discussions with my management were that this event was essentially classified. I am not sure to what degree I am supposed to discuss it.

Q Would you like to discuss that with your attorney before you respond to the question?

A I think so, yes.

(Pause in the proceedings.)

THE WITNESS: I think it is typical of all Westinghouse plants as far as I know -- there may be one or two older plants that are exceptions, but that ECCS actuation is or was a coincident logic of pressurizer level and pressure. I believe that is also typical of the reactor you are referring to.

BY MR. HELFMAN:

Q All right. Are you aware that at the TMI-2 incident which occurred in March of this year pressure

decreased at the same time that pressurizer level indication increased?

A. Yes. That is correct.

Q. Would it be correct that in a plant in which such a divergence occurred, ECCS would not be actuated despite possible voids in the primary system?

A. Yes. You would go through that stage, that is correct.

Q. Do you know how many plants presently are actuated by a coincidence or pressure indication and level indication?

A. I believe there are ~~too~~ many. They were originally designed that way, but in the recent months we have changed that. SA

Q. By means of what?

A. Bulletins to the plants from the Commission telling them to make changes.

Q. And was this done in response to the TMI-2 incident?

A. Yes, sir.

Q. Do you recall if the NRC became aware of the European incident to which we have referred after the TMI-2 transient of this year or before?

A. After.

Q. You are referring to yourself or to the NRC?

A Myself. I talked with the -- I was on the telephone when we were informed, as a matter of fact, and I immediately -- within about two hours -- wrote a memorandum to management giving them a list of details on the event and it was subsequently classified, and -- at that point.

Q When you refer to management, are you referring to Mr. Mazetis and Mr. Novak?

A I think the memo went all the way -- we were discussing it with Mr. Case that afternoon. (I was not reporting to Mr. Mazetis and Mr. Novak at this time.)

Q Was this transient, the European transient, reported to you by a member of the NRC staff?

A Yes. I think I first heard of it then.

Q Do you recall that member's name?

A Yes. Mr. Thadani.

Q Did Mr. Thadani inform you of how he became informed of that transient?

A Yes. I think he told me that Westinghouse told him. I am not sure when. Subsequent to TMI-2, but I am not sure when.

Q In the questions you addressed to Midland, did you specifically address concerns regarding loss of pressurizer level indication, high or low?

A I don't recall specifically. I know that post-accident monitoring I got into on the Midland review. Pressurizer level was part of that review.

It is still ongoing.

Q. Post-accident review, are you referring to the TMI-2 accident?

A. Post-accident referring to accident analysis in general.

Q. Have inquiries been posed to Midland regarding pressurizer level indication?

A. Yes, sir.

Q. Have you addressed inquiries concerning operator override of the HPI?

A. Not that I can recall.

MR. HELFMAN: Let's go off the record.

(DIscussion off the record.)

MR. HELFMAN: Back on the record.

MR. CHOPKO: I have no questions. I will say that for the record.

MR. HELFMAN: Since there are no further questions, we will recess the deposition. Thank you for your time.

MR. CHOPKO: I have no questions at this time.

MR. HELFMAN: If we have any further questions we will reconvene the deposition and continue at that time.

(Whereupon, at 11:30 a.m., the deposition was recessed, to reconvene at a later time, if necessary.)

I have read the foregoing pages, 1 through 57, inclusive, and they are a true and accurate record of my testimony therein recorded.

Scott F Newberry 8/13/79
SCOTT NEWBERRY

Subscribed and sworn to before me this _____ day of _____, 1979

_____
Notary Public

My Commission Expires: _____

REPORTER'S CERTIFICATE

DOCKET NUMBER:

CASE TITLE: DEPOSITION OF SCOTT NEWBERRY

HEARING DATE: July 31, 1979

LOCATION: Rockville, Maryland

I hereby certify that the proceedings and evidence herein are contained fully and accurately in the notes taken by me at the hearing in the above case before the PRESIDENT'S COMMISSION ON THE ACCIDENT AT THREE MILE ISLAND.
and that this is a true and correct transcript of the same.

Date: August 1, 1979

Official Reporter
Acme Reporting Company, Inc.
1411 K Street, N.W.
Washington, D.C. 20005

CERTIFICATE

I certify that I have read this transcript and corrected any errors in the transcription that I have been able to identify, except for unimportant punctuation errors.

Date: August 13, 1979

Scott F. Newberry

Scott F. Newberry