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-

THE BABCOCK & WILCOX COMPANY and J. RAY McDERMOTT & CO., INC.,

Defendants.

80 CIV. 1683 (R.O.)

- -x

Continued deposition of The Babcock & Wilcox Company by DANNY W. LaBELLE, taken by the Plaintiffs, pursuant to adjournment, at the offices of Kaye, Scholer, Fierman, Hays & Handler, Esqs., 425 Park Avenue, New York, New York, on Wednesday, the 3rd day of June 1981 (810603), commencing at 9:19 o'clock in the forenoon, before Charles Shapiro, a Certified Shorthand Reporter and Notary Public in and for The State of New York.

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-and-
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Also Present:

DAVID TAYLOR

D A N N Y W. L A B E L L E resumed as a witness and, having been previously duly sworn, was examined and testified further as follows:

EXAMINATION (Continued)

BY MR. GLASSMAN:

Q Mr. LaBelle, I would like you to focus again on GPU Exhibit-286 marked for identification. The last full paragraph beginning with the words "As Safety Analysis proceeds," contains a reference to an interface structure.

Can you tell us what you had in mind in using those terms?

A The units listed here interface with each other.

Q How was the build-up of an interface structure between the various units as reflected in this memorandum different from the structure as it existed before that time?

A Just in terms of the amount of work activity.

Q The second sentence of that paragraph says that:

"... there is the potential for confusion over work responsibilities, cost recovery and work control."

Why was there a potential for confusion over work responsibilities?

A I think the reference is more to awareness by those organizations in their interfacing of the work that was being conducted.

Q Had there been any prior confusion over work responsibilities?

A No, sir.

Q That paragraph ends with the sentence:

"I therefore request that you please review our recommendations...."

To what recommendations were you referring in that sentence?

A Not having complete recall of the recommendations that are suggested here, I can only accept what is stated here in the memo,which are the activities that are prescribed in A, B and C and the attached recommendations of Mr. Vosburgh and Mr. Bonoca.

Q Did you receive directional input from Dr. Roy or Dr. Womack in response to your request?

A I have no recollection that that took place.

Q I would like to refer to the next page of GPU Exhibit-286 marked for identification, which is the first page of the May 1, 1979 attachment from Mr.

page-1 (19c501)

Vosburgh and Mr. Bonoca to yourself. The second full paragraph (paragraph-2) reads as follows:

"Our opinion is that the following recommendations are of extreme importance and should receive Engineering Department attention to provide the impetus for their implementation."

Did you agree with that recommendation in that statement?

A At the time that this information was forwarded to Dr. Womack and Dr. Roy I had at least in principal indicated the importance of the information, not necessarily the extreme importance of the information.

Q To whom had you indicated the importance of that information?

A Just in the fact that this information was escalated to my superiors.

Q The next paragraph of the May 1st, 1979 (790501) attachment to your May 7th, 1979 (790507) memo refer to a:

"...comprehensive safety evaluation of the 177-FA plants based on event tree evaluations, and not strictly on licensing requirements."

How did such a program differ from what

had been done before?

A The Safety Analysis Report (SAR) contained licensing guidelines provided by the Nuclear Regulatory Commission (NRC) for assumptions and presentation of materials supporting transient and accident sequences.

Q Were event tree evaluations used by B&W prior to the TMI-2 accident (790328)?

A While I was unit manager of Safety Analysis we did not utilize event tree evaluations.

Q Were event tree evaluations techniques known to you during the period you were manager of the Safety Analysis Unit and prior to the TMI-2 accident?

A Yes, sir.

Q Why were they not used at that time?

A This was not a normal practice within the unit at that time.

Q Why was it not a normal practice within the unit at that time?

A The transient and accident analysis were based upon licensing guidelines that had previously been established.

Q Is there any other reason why event tree evaluations were not used prior to the TMI-2 accident?

A No, sir.

Q Have event tree evaluations been used by B&W subsequent to the TMI-2 accident? (79n328)

A Yes, sir.

Q Are event tree evaluations now required by NRC licensing guidelines?

A I do not know.

Q Do you know of any such licensing guidelines requiring event tree evaluations?

A I have no recollection of those, no, sir.

Q Why are event tree evaluations now used by B & W?

A I have no specific recollection as to why they are being used presently.

Q What is their function?

A To better understand the overall component and system response.

Q Is it correct to say that event tree evaluation now provides a better understanding of system response than existed within B & W prior to the TMI-2 accident?

A I could not say with assurety that that is true, no, sir.

Q Do you have an opinion on the subject?

MR. WISE: I am going to object to that. I don't think his opinions are relevant or helpful on a question of that nature following the accident. (790328)

MR. GLASSMAN: Mr. LaBelle is director of Safety Analysis or at least was at certain times after the accident and he can answer the question.

MR. WISE: He said he doesn't know. What you are really doing is asking him to guess or speculate.

MR. GLASSMAN: He said he didn't know with certainty or assurety or something to that effect.

MR. WISE: I think you have asked the question as to whether it did or did not. He told you he doesn't know. To then go further and ask him for an opinion is essentially asking the same question again hoping to get a different answer. I don't think it is proper.

I object to the form of the question and if the witness wants to venture an answer I suppose he can. I will not direct him not to answer.

I think the question is improper and I don't think it is valuable given his previous answer.

BY MR. GLASSMAN:

Q Mr. LaBelle, will you please answer the question?

THE WITNESS: Will you repeat the question, please?

(The pending question was read by the reporter.)

A No, sir.

Q Mr. LaBelle, have event tree analyses subsequent to the TMI-2 accident (190328) related to sequences of events (SOE) that were not analyzed prior to the TMI-2 accident?

A I do not understand the sequence of events that you are referring to.

Q Have any sequences of events been analyzed under the event tree analysis done by B&W after the TMI-2 accident which event or sequence of events had not been analyzed prior to the TMI-2 accident?

A I do not know.

Q Have event tree analyses performed by B & W subsequent to the TMI-2 accident included analyses

of events leading to the opening of the PORV and the resultant loss of coolant accident (LOCA)?

A I do not know.

Q If you wanted to find out, who in B&W would you ask?

A The individuals that are involved in the anticipated transient operating guideline (ATOG) program for the B & W owners group.

Q Which individuals are they?

A I do not know.

Q Under the heading "Event Tree Simulation" on the May 1, 1979 (19050) memo contained in GPU Exhibit-273 marked for identification, the lead unit is indicated as being Safety Analysis/ECCS.

Does that mean that there were two lead units?

MR. WISE: Excuse me. You are now speaking about the recommendations that Mr. Vosburgh and Mr. Bonoca were making or are you speaking about something that in fact happened? It is unclear from your question.

MR. GLASSMAN: Mr. Wise, I don't think we need your input on what this means. I think I was very plainly asking a question regarding the

(190501)

May 1, 1979 memorandum.

I don't think that the witness needs any more coaching from you as to the nature of the memorandum.

MR. WISE: I object to that, Mr. Glassman, and it's been a continual thing with you that every time an objection is made you accuse opposing counsel of coaching.

Your question is improper in form and I direct him not to answer it and let's go ahead. If you want to proceed that way -- and I thought I was trying to help by clarifying the situation so that you could proceed.

If you want to play lawyer, we can do it that way, too.

MR. GLASSMAN: I don't know how my question could be clearer.

MR. WISE: It is improper. It assumes facts not in evidence, and I can support that I think if you want to have the record repeated. Your choice of verbs indicated a fact. That fact has not been established.

BY MR. GLASSMAN:

Q Mr. LaBelle, was Phase-1 of the event tree

simulation as referred to in the May 1, 1979 (790501) memo which is a part of GPU Exhibit 273 marked for identification ever implemented?

A I could not say that it was implemented in its entirety, no, sir.

Q Was it implemented in whole or in part?

A I do not know for a fact that it was.

Q The May 1, 1979 memorandum recommends implementation of Phase 1; is that correct?

A You are referring to which?

Q I am referring to the May 1, 1979 memorandum which is contained in GPU Exhibit 273 marked for identification.

A But you are referring to the memo from Bonoca and Vosburgh to myself?

Q Yes.

A They have offered, according to this memo, a recommendation, yes, sir.

Q Did you forward that recommendation to your superiors?

A According to the May 7th, 1979 (790507) memo from myself to Dr. Roy and Womack, Exhibit 273, it says here that I did.

Q Do you have any reason to believe that

you did not take that action?

A No, sir.

Q Does the recommendation under Phase-1 include a listing of two lead (2-lead) units for event tree simulation?

A It just states here two lead units in this memo of May 1st, 1979 (790501).

Q Why was there a recommendation made that Safety Analysis and ECCS work together as a lead unit?

MR. WISE: I object to the form of that question. If the witness wants to venture an answer I will permit him to do so.

A I could not say.

Q Had there been any instances prior to the TMI-2 incident in which Safety Analysis and ECCS had formally worked together on a project?

A Safety Analysis and the Emergency Core Cooling System (ECCS) Unit are sister units performing analyses that are provided in the Safety Analysis Report (SAR) pertaining to transient and accident analysis.

Q What do you mean by "sister units"?

A The ECCS Unit provides information pertaining to the loss of coolant accident (LOCA).

Q In working as sister units were the two

units (2-units) required to interchange information?

A No. I will qualify that by saying that information provided by the ECCS unit would be coordinated into the accident analysis chapter of the Safety Analysis Report (SAR).

Q I would like you to refer to the next page of GPU Exhibit 273 marked for identification, which is Page 2 of the May 1, 1979 (790501) memorandum.

I would like you to read the first sentence (sentence-1) of the paragraph listed under Phase 2 relating to the analytical follow-up to Phase 1 and tell us whether such a program was ever in effect prior to the TMI-2 accident.

A Not in terms of event tree analysis.

Q What is meant by the term or terms: "...to assure bounding SAR analysis are in place"?

MR. WISE: I will permit him to answer to the extent he has an understanding. I object to the form of the question on any other basis.

A This is a reference to the existing Safety Analysis Report analysis.

Q In what respect might the bounding SAR analysis not be in place?

A I do not know.

Q What was your understanding of why this capability must lie in the Safety Analysis area?

A As I mentioned previously, I have no opinion to offer in that area.

Q What was your understanding?

MR. WISE: His understanding of what? He said he had no opinion.

MR. GLASSMAN: I didn't ask that question. Perhaps the reporter can read back the question.

(The question referred to was read by the reporter as requested.)

MR. WISE: What was his understanding of what?

THE WITNESS: Could you go back several questions?

MR. WISE: Let him rephrase the question.

MR. GLASSMAN: I think I will put it back on the record so the record is clear, Mr. LaBelle.

BY MR. GLASSMAN:

Q What was your understanding, sir, of why this capability must lie in the Safety Analysis area?

MR. WISE: I object. Can we have the

reporter read back the question two before? I think it is the exact same question.

MR. GLASSMAN: That was precisely what I wanted to do to make sure we have the proper question on the record before the witness.

(The record was read by the reporter as requested.)

MR. WISE: While we were off the record we have had the question reread. It is the identical question which Mr. LaBelle already answered by saying he doesn't have an opinion.

Counsel indicated he wanted to make sure that Mr. LaBelle in his answer is also including whether he has an understanding besides an opinion.

To that extent, I will permit Mr. LaBelle to clarify whether in his previous answer he meant to include a lack of understanding as well as a lack of opinion.

A Before I provide a response it would be helpful to me to understand what was meant by "capability" in your question.

Q Did you understand that a capability to "evaluate all branches of event trees to assure bounding

SAR analysis are in place and to identify those areas where operator error and/or ICS failure will propagate to a limiting situation," that such a capability must or should lie in the Safety Analysis area?

A The entire capability should not exist in the Safety Analysis Unit.

Q Why could it not exist in the Safety Analysis Unit?

A To the extent of understanding the entirety of system -- systems interaction and operator effects, also to the extent of the responsibilities that the unit had for certain transient and accidents -- transients and accidents.

Q Did Messrs. Vosburgh and Bonoca communicate to you in words or substance a recommendation that the entire capability should lie in the Safety Analysis area?

A No, sir.

Q What capability did you understand Messrs. Vosburgh and Bonoca to be referring to in this paragraph on Page 2 of the May 1, 1979 (790501) memorandum?

A You keep referring to capability. Capability for what purpose is where I have difficulty in trying to recall their interest at the time this particular

memo was issued.

Q At or about the time this memo was issued did you feel that the responsibilities of the Safety Analysis Unit should be expanded?

A If the activity suggested here was to be performed within the unit,yes, sir. Make that Safety Analysis Unit.

Q Do you know if the recommendation contained in Phase-3 on Page-2 of the May 1, 1979 memo (790501) was ever carried out in whole or in part?

A No, sir.

Q Under the heading "Computer Code Modifications and Development" further on on this page, the paragraph begins with the statement:

"The current versions of CADDS and TRAP-2 are adequate for licensing type analyses..."

Can you tell us what TRAP 2 is?

A TRAP 2 is a CRAFT code derivitive with a more detailed steam generator (SG) model.

Q Do you know what the acronym TRAP stands for?

A I just cannot recall,sir.

Q Did you agree that the current versions of CADDS and TRAP 2 were adequate for licensing type

analyses?

A These codes were adequate to the extent that they had been accepted by the Nuclear Regulatory Commission (NRC) for performance of accidents and transient conditions which the Safety Analysis Unit was responsible for in preparation of the accident analysis section of the Safety Analysis Report.

Q Is there any respect in which the current versions of the CADDS and TRAP-2 were inadequate for licensing-type analyses?

A They were adequate to the extent of application for which they were licensed by the Nuclear Regulatory Commission for transient and accident analysis.

Q The same sentence of GPU Exhibit-273 marked for identification continues with the statement that:

"...they are not adequate for more complex or 'realistic' situations."

Do you agree with that statement?

A I do not know what the author's interpretation of "complex" might have referred to. In terms of realistic analysis, I would concur with that particular statement.

Q What do you mean by the term "realistic" in this context?

A These codes were for licensing-type analyses and were not designed for operational-type analyses.

Q What is the difference between licensing-type analyses and operational-type analyses?

A Licensing-type analyses would refer to the conservative or bounding-type analysis provided in the Safety Analysis Report (SAR) for the accident and transient analysis.

Q How does that differ from operational-type analyses?

A Operational analyses is just that, the functioning of each piece of equipment in accordance with its normal operation.

Q Is that based on actual operating experience?

A I do not understand what you mean in terms of "is that based on."

Q What is meant by the term "normal operation" when you speak of the functioning of each piece of equipment in accordance with normal operation?

MR. WISE: Do you want him to define the words "normal operation" for you?

Q Have you seen any approval letter from the NRC on those codes?

A It is possible that I have, but not that I can recall having seen.

Q If you wanted to find such letters if they existed would you also go to the licensing group?

A Yes, sir.

Q Further on in the same paragraph there is a reference to "department level priority." What does that mean?

A That is in the sentence: "These mods will be requested..."?

Q Yes, that is correct.

THE WITNESS: Okay. Could you repeat that question for me, please?

(The pending question was read by the reporter.)

A Department level would refer to the engineering department and that these code changes for development of operational models would receive priority at that engineering department level.

Q Do you agree that these program mods will be required regardless of future user's group work?

A You are referring here to the words in the next

MR. GLASSMAN: Yes, as he understands it in this context.

A It is the way that the equipment operates.

Q Was the CADDS code ever approved by the NRC?

A As far as I know it is.

Q What is the basis of your knowledge?

A The code has been used in previous SAR licensing efforts and those Safety Analysis Reports have been licensed.

Q Is there any other basis for your statement?

A There could be a concurrent letter to B&W stating the acceptance of the code for licensing by the Nuclear Regulatory Commission.

Q Have you ever seen such a letter?

A Not that I can recall.

Q If you wanted to find such a letter where would you look?

A With our licensing group.

Q Were the CRAFT or TRAP-2 codes ever approved by the NRC?

A To the same extent of what I have said previously about the CADDS code.

sentence?

Q That is correct.

A I am not sure that I could go as far as to say that they will be required.

Q Was it your recommendation that program mods should be required regardless of future user's group work?

A No, sir.

Q Did you disagree with the statement in the last sentence of that paragraph that the mods will be required regardless of future user's group work?

MR. WISE: I think in fairness to the record we ought to have the whole sentence put in just so that someone reading this knows what it is we are talking about, since there have been several references to parts of this sentence.

The sentence in its entirety reads:

"From current NRC analysis requests, these program mods will be required regardless of future user's group work."

BY MR. GLASSMAN:

Q Will you please answer the question?

A I think in reading the sentence that if the

"will" were changed to a "may" that it would be more in keeping with my particular feelings at that time.

Q If the program mods were required or might be required regardless of future user's group work, does that mean that B&W would pay for the program mods?

A I could not say at all with respect to that.

Q I would like you to refer to the next page of GPU Exhibit-273 marked for identification under the heading "Equipment Modification Recommendations." It begins with the sentence:

> "One of the most useful pieces of information that will come from the event tree analysis will be those paths that lead to severe results with high probability of occurring."

Did you have any particular paths in mind at that time?

A No, sir.

Q Under the heading "Approach to Safety Analysis" on the same page of GPU Exhibit-273 marked for identification there is a paragraph beginning with the following sentence:

> "The most important, and saddest, lesson

learned from TMI-2 is the general complete lack of knowledge concerning reactor safety."

Did you agree in whole or in part with that statement?

A Where are you at now?

Q I am reading from the first paragraph under the heading "Approach to Safety Analysis."

A Okay.

THE WITNESS: Could you repeat the question, the part that was mentioned?

(The pending question was read by the reporter.)

A This is a statement by Mr. Bonoca and Mr. Vosburgh expressing their feelings.

Q Did you agree in whole or in part with that statement?

A I could not state that I agreed in whole or in part with that statement.

Q Did you disagree with that statement?

A I could not state that I disagree with the statement. It is not my statement.

Q Did you agree that there was a lesson learned from TMI-2 of any type regarding the lack of knowledge concerning reactor safety?

A I am not sure what is meant by "lack of knowledge concerning reactor safety."

Q Was there a lack of knowledge within B & W concerning reactor safety prior to the TMI-2 accident?

A Again, I would have to repeat, that lack of knowledge concerning reactor safety was a very general phrase and I do not know what is intended by that phrase.

Q Was there a lack of knowledge within B & W concerning any aspect of reactor safety?

MR. WISE: I don't know that that is a fair question to ask the witness. I will object to the form and permit him to answer to the extent he can.

A Again, it is too general a question for me to be able to respond to.

Q When you forwarded this memorandum on to your supervisors did you indicate to them orally or in writing any disagreement with that statement?

A Not that I can recall, since the process that was followed was one of escalating to my superiors the comments of Mr. Vosburgh and Mr. Bonoca as they were written.

Q I would like you to read to yourself the statement under the indented paragraph--(1) under the heading "Approach to Safety Analysis" and tell us whether you agreed in whole or in part with that statement.

A I could not say with assurety that I understand the entirety of the paragraph that has been written by Mr. Vosburgh and Mr. Bonoca. I would agree that the responsibilities of the Safety Analysis Unit was limited to safety evaluations that were used to support licensing activity.

Q Did you feel that the responsibilities of the Safety Analysis Unit should be broader than the support of licensing activity?

A I think, as any manager of a unit, one is quite interested in increasing one's responsibilities, yes, sir.

Q What were the reasons for your interest in broadening your responsibilities in Safety Analysis?

A Okay. As stated in this particular paragraph, these -- the information as stated are the opinions of Mr. Vosburgh and Mr. Bonoca such that any opinions that I would offer with respect to my personal feelings

about expansion of the Safety Analysis Unit responsibilities would have no direct bearing on this particular paragraph.

Q I would like you to answer the question without regard to the paragraph. If you like, we can have the question repeated to you again.

A Okay.

MR. GLASSMAN: Mr. Reporter?

THE WITNESS: Will you please repeat the question?

(The question referred to was read by the reporter as requested.)

A This would be primarily from an administrative standpoint working with a bigger working staff and work responsibilities.

Q Were there any other reasons for your interest in broadening responsibilities of the Safety Analysis Unit?

A No, sir.

Q Did you ever consider performance of safety analyses which were not strictly in support of the licensing requirements?

A It is certainly possible.

Q Do you recall any such consideration which

you gave to that issue?

A No, sir.

Q Did you discuss the words or substance of Item-1 under the "Approach to Safety Analysis" contained in GPU Exhibit-286 marked for identification with either Messrs. Vosburgh or Bonoca?

THE WITNESS: Could you repeat that question? I didn't hear the first part of it.

(The pending question was read by the reporter.)

A I can recall the discussion, yes, sir.

Q With whom did you have such a discussion?

A With both Mr. Bonoca and Mr. Vosburgh.

Q Was it a meeting between the three of you?

A Yes, sir.

Q What did you say to either of these gentlemen and what did they say to you?

A I have no recollection.

Q Can you give us the substance of what you said to them and what they said to you?

A No, sir, I cannot.

Q What do you recall of such a meeting or conversation?

A Just that there was a meeting.

Q You have no recollection of the words or substance of such a meeting?

A No.

Q Did you have such a meeting prior to forwarding their memo on to your supervisors?

A Yes, sir.

Q Did you suggest to them any changes in their memorandum to you, what is finally embodied in the May 1, 1979 (790501) memorandum to you?

A I may have.

Q Do you recall any such discussion?

A I can recall having made recommendations, yes, sir.

Q Can you tell us what they were?

A No, sir.

Q Did you have any notes with regard to such recommendations or discussions with Messrs. Vosburgh or Bonoca?

A Not that I can recall.

Q Do you know if any drafts were prepared of the May 1, 1979 memorandum?

A No, sir.

Q Did you discuss the words or substance of

Item-1 under the heading "Approach to Safety Analysis" with Dr. Roy or Dr. Womack?

A I cannot recall any such discussions.

Q Did you either mark up or retain a copy of the May 1, 1979 (790501) memorandum?

A Not that I can recall.

Q Under Item-2 there is a sentence which begins or reads as follows:

"Decisions regarding plant safety, or equipment qualify and functional specifications, must be made within Safety Analysis(and ECCS)."

In what respect would this be different from the practice prior to the TMI-2 accident?

MR. WISE: I am going to object to the form. The witness may answer it if he can.

A Okay.

THE WITNESS: Could you repeat the question, please?

(The pending question was read by the reporter.)

A The statement as presented by Mr. Vosburgh and Mr. Bonoca is a very general statement and I would repeat, as I said before, that the Safety Analysis Unit was responsible for accident and transient

analysis for the Safety Analysis Report (SAR).

Q Under Item 4 under the subheading "Approach to Safety Analysis" there appears the following sentence:

"The degree of decisions made affecting plant safety outside of Safety Analysis during the TMI-2 incident (790328) was appalling, although recognized as necessary under the current mode of operation."

Did you discuss the words or substance of that sentence or Paragraph 4 with Messrs. Vosburgh or Bonoca?

A I cannot recall having done so, no, sir.

Q Did you agree in whole or in part with that statement?

A This was their opinion. I did not have to agree or disagree with their opinion.

Q Did you agree in whole or in part with that statement?

MR. WISE: I think he has just answered.

MR. GLASSMAN: He did not answer the question, Mr. Wise.

MR. WISE: I heard an answer and I think the reporter got one on the record.

MR. GLASSMAN: That doesn't mean it was responsive, Mr. Wise. I think we can have a simple answer. We understand your point.

MR. WISE: I think it was responsive. I don't think necessarily I am confined to your view of what is responsive or not. I think he has answered the question.

BY MR. GLASSMAN:

Q Mr. LaBelle --

MR. WISE: We can have it repeated if you like.

MR. GLASSMAN: Why don't we do that.

MR. WISE: Yes, I think that is a good idea.

(The record was read by the reporter as requested.)

MR. WISE: Off the record.

(Discussion off the record.)

MR. WISE: Mr. Glassman is apparently confused by your answer as to whether you did or did not agree at the time with the portion of the document that he has read to you.

Can you clarify for Mr. Glassman the meaning of your answer to the previous question?

THE WITNESS: Okay.

A I did not feel at the time or at the present time that I have to agree or disagree with the opinions of Mr. Vosburgh or Mr. Bonoca who were working for me.

Q Mr. LaBelle, so we don't waste too much time, I am not asking you whether you had a responsibility to have to agree. I am only asking for your state of mind whether you in fact agreed in whole or in part with that statement. Yes or no?

MR. WISE: Do you understand what you are being asked?

THE WITNESS: Yes.

MR. WISE: No one is asking you to look at this thing at this point. All he is asking you is did you have an agreement or a disagreement in or about May 1979 (190500) with that particular statement as a matter of fact regardless of what responsibilities you may have had.

A I had no agreement or disagreement with that statement.

Q Referring to the last page of GPU Exhibit ~~286~~ 286, Mr. LaBelle, under the heading "Conclusions," the final sentence concludes:

"... a strong central Safety Analysis group must emerge, precluding the fragmented, self-styled safety 'experts' that currently exist throughout the engineering organization."

Did you ever discuss that statement with Messrs. Vosburgh or Bonoca?

A Yes.

Q Can you tell us the words or substance of your discussion with Messrs. Vosburgh or Bonoca in this respect?

A Only that this particular statement was a philosophical concern that Mr. Vosburgh and Mr. Boncca had.

Q Did you agree in whole or in part with that statement?

A I agreed to the extent that safety is a very general term and that the Safety Analysis Unit had defined responsibilities and that other decisions that were being made with respect to safety did not infringe upon the Safety Analysis Unit's responsibilities.

Q Did you have any other prior decisions in mind which infringed on the Safety Analysis Unit's area?

A Not that I concurred with, no, sir.

Q Did you have other decisions in mind that you did not concur with?

A I am not sure I understand the substance of your question.

Q I understood from your prior answer, Mr. LaBelle, that there were such prior decisions that infringed on the Safety Analysis area that either you did not concur in or that you did not believe infringed on the Safety Analysis area; is that correct?

A I did not feel that the responsibilities that the Safety Analysis Unit had were being infringed on, no, sir.

Q Did you communicate your feelings to Dr. Roy or Dr. Womack in this regard?

A I can recall no reason for having to do so.

Q Did you discuss the conclusions of the (190501) May 1, 1979 memorandum or the substance of those conclusions with Dr. Roy or Dr. Womack?

A I could not say that I didn't, but I cannot recall.

Q Did you attend a meeting of plant design (190500) (190600) unit managers in May or June of 1979?

A I don't know.

Q Was any portion of GPU Exhibit 286 or the substance of the memoranda contained therein discussed at any plant design unit managers meeting?

A Not that I can recall.

MR. GLASSMAN: Off the record.

(Discussion off the record.)

(Recess taken.)

MR. GLASSMAN: I would like to have marked as GPU Exhibit 287 for identification two sheets (2-sheets) of paper, hand written, with the heading "Potential Lessons to be Learned from TMI-2."

(The document above referred to, headed "Potential Lessons to be Learned from TMI-2," consisting of two pages, was marked as GPU Exhibit No. 287 for identification as of this date. (810603)

BY MR. GLASSMAN:

Q Mr. LaBelle, I show you what has been marked as GPU Exhibit 287 for identification (handing document to the witness). Can you tell us what this document is?

A This is a listing of potential lessons to be

learned from TMI-2 referring to the TMI-2 incident of March 28th, 1979 (190328) as prepared by myself.

Q Does your signature appear at the bottom of the second page (page-2) of this document?

A Yes, sir.

Q Why did you prepare this document?

A As best I can recall it was prepared at the request of Dr. Womack.

Q Was Mr. Womack's request oral or in writing?

A As best I can recall it was oral.

Q Did Dr. Womack make this request in a meeting of plant design unit managers?

A As best as I can recall that is correct.

Q Did he request such a statement of all plant design unit managers?

A As best I can recall that is correct.

Q Under your signature on Page-2 there appears a date of 5/25/79 (190525) Do you recall approximately when the meeting of plant design unit managers took place at which Dr. Womack's request was made?

A No, sir.

Q How did you go about preparing this document?

A One prepares a document.

Q Did you obtain input from any other persons?

A Not that I can recall.

Q Did you review any written materials prior to preparing this document?

A I could have.

Q Did you make or retain any copies of any materials you reviewed?

A I don't know.

Q Did you review GPU Exhibit-286 marked for identification in whole or in part in the course of preparing GPU Exhibit-287 marked for identification?

A I do not know.

Q Do you have a file or files relating to this document or its preparation?

A Not that I can recall.

Q Can you tell us the words or substance of Dr. Womack's request to you?

A Not specifically, no, sir.

Q Can you tell us generally?

A There was a request for each unit manager to submit a list of what we felt were some of the potential lessons to be learned from the TMI-2 incident.

Q Did Dr. Womack provide any guidance as to

the type of lessons to be learned or what else he had in mind?

A Not that I can recall.

Q Did Dr. Womack state to you the reason for the request?

A Not that I can recall.

Q Do you know the reasons for the request from any other source?

A No, sir.

Q The first paragraph of GPU Exhibit-287 reads as follows:

"Operators are not prepared to cope with abnormal operating conditions which do not align closely with anticipated and design basis conditions, including multiple failures and inappropriate prior operator actions. Event diagnosis is much more complex than operators have been led to believe."

In what respects was event diagnosis much more complex than operators had been led to believe?

A This was just a general statement.

Q What was the basis of your statement?

A Just in looking to the future that it would be recommended that event diagnosis be given further

consideration.

Q What had operators been led to believe regarding event diagnosis prior to the TMI-2 accident?

A I do not know.

Q What did you have in mind when you wrote this sentence?

MR. WISE: What did he have in mind about what when he wrote the sentence?

MR. GLASSMAN: What did Mr. LaBelle have in mind when he stated that operators had been led to believe that event diagnosis is more complex -- excuse me; just let me restate that.

That became slightly garbled. I think the question was probably clearer at the beginning, but I will restate it.

MR. WISE: It wasn't to me, and the fact that we are having a little difficulty figuring out what it is now leads me to believe it should be clarified.

BY MR. GLASSMAN:

Q Mr. LaBelle, what did you have in mind with respect to what operators had been led to believe concerning event diagnosis as set forth in the last

sentence of this paragraph?

A I had nothing specific in mind other than to recommend that this be one area that should be further understood and looked at.

Q Had you discussed the complexity of event diagnosis in words or substance with anyone else before you prepared this document?

A Not that I can recall.

Q Was this an accurate reflection of your state of mind?

A Since I wrote it at that time I would presume that it is.

Q In what respect were operators not prepared to cope with abnormal operating conditions which do not align closely with anticipated and design basis conditions?

A The fact that the TMI-2 incident had occurred.

Q Was B&W familiar with abnormal operating conditions which did not align closely with anticipated and design basis conditions?

MR. WISE: Was B & W familiar? I will object to the question.

If you can figure out what that question means you may answer it, Mr. LaBelle.

A It's a very general statement. I don't know that I could answer it.

Q Mr. LaBelle, at the time you prepared GPU Exhibit—287 marked for identification were you aware of any abnormal operating conditions at TMI-2 which did not align closely with anticipated and design basis conditions?

THE WITNESS: Could you repeat the question, please?

(The pending question was read by the reporter.)

A No, sir.

Q What was the basis of your statement that operators are not prepared to cope with abnormal operating conditions which do not align closely with anticipated and design basis conditions?

A As I mentioned earlier, the fact that the TMI-2 incident had occurred.

Q What aspect of the TMI-2 accident did not align closely with anticipated and design basis conditions?

A The overall combination of events that occurred had not previously been included in the Safety Analysis Unit's contribution to the Safety Analysis Report (SAR).

Q To what combination of events are you referring in your last answer?

A To the sequence of events (SOE) that occurred during the TMI-2 incident.

Q What sequence of events are you referring to?

A The sequence of events.

Q Can you tell us the sequence of events that you have in mind so that it is clear on the record?

A There were several sequence of events which were prepared, all of which seemed to have general agreement to my recollection. These sequence of events were submitted by GPU, B&W and the Nuclear Regulatory Commission (NRC) and perhaps others.

Q Did the sequence of events include multiple failures?

A I cannot recall that it did. I will qualify that by saying it is a matter of what is meant by "multiple failures."

Q Why was the overall combination of events that occurred not previously included in the Safety Analysis contribution to the Safety Analysis Report (SAR)?

A The sequence of events was not required for the licensing plants by the Nuclear Regulatory Commission.

Q Is there any other reason that the overall combination of events that occurred on March 28th, 1979 (790328) at TMI-2 had not previously been included in the Safety Analysis contribution to the Safety Analysis Report (SAR)?

A The required analysis for the Safety Analysis Report were those events which were deemed credible by the Nuclear Regulatory Commission (NRC) and the nuclear industry.

Q Did the analysis actually done for the SAR include all events deemed credible by Babcock & Wilcox (B+W)?

A Yes, sir.

Q Had a similar sequence of events as occurred on March 28th, 1979 ever occurred at another B & W designed plant?

A Not the entirety of the event that occurred at TMI-2.

Q Had an event occurred at another B & W designed plant prior to the TMI-2 accident involving a loss of feedwater (LOFW), a stuck-open PORV and premature termination of HPI?

A I am not aware of the completeness of the sequence to which you referred.

Q Are you aware of a transient at the Davis-Besse plant that included that sequence of events (SOE) in whole or in part?

A I am aware of an event at the Davis-Besse plant which included part of the sequence which you mentioned.

Q Which part of the sequence did it include?

A That there was an open PORV-type transient.

Q Was the possibility of a stuck-open PORV ever referred to or included in the Safety Analysis Reports (SAR) prepared by B&W?

MR. WISE: May I have that repeated, please?

(The pending question was read by the reporter.)

A The particular occurrence of a stuck-open PORV was not an event of which the Safety Analysis Unit was responsible.

Q Regardless of whether or not this was the Safety Analysis Unit's responsibility, was the occurrence of a stuck-open PORV referred to or included anywhere in the Safety Analysis Report prepared by B & W prior to the TMI-2 accident?

A I do not know.

Q Were you responsible as manager of the Safety Analysis Unit for coordinating the efforts of various plant design units and their input to the Safety Analysis Report (SAR)?

A Yes, sir.

Q Did you forward GPU Exhibit-274 to anyone within B & W?

A As best I can recall it was given to Dr. Womack.

Q Did you give it to anyone else?

A Not that I can recall.

Q Did you discuss the words or substance of the first full paragraph on GPU Exhibit-287 marked for identification with Dr. Womack at any time?

A Not that I can recall.

Q Did you discuss the words or substance of that paragraph with anyone else at B & W at any time?

A Not that I can recall.

Q Under the heading "Actions" after the first paragraph on GPU Exhibit-287 marked for identification, the first sentence reads:

"Identify vital information required for operator to make critical decisions to protect the reactor core."

What did you mean by the term "vital

information"?

A Vital is vital.

Q Did you have any particular vital information in mind that you knew or understood was required for an operator to make a critical decision to protect the reactor core?

A No, sir.

Q Were you referring to a technical understanding of the reactor coolant system (RCS)?

A The reference here is to any vital information that would assist in protection of the reactor core.

Q When you prepared this sentence did you have in mind vital information that had not been identified prior to the TMI-2 accident?

A No, sir.

Q Are you aware of any vital information which had not been communicated by B&W to its customers prior to the TMI-2 accident which information was required for an operator to make critical decisions to protect the reactor core?

A No, sir.

Q The next sentence of GPU Exhibit-285 refers to a provision for a "much more rigorous training program." In what respects were you suggesting a more

rigorous training program?

A This was a general comment that the training program be examined for inclusion of any additional training that would be a benefit to plant operators.

Q The next sentence in GPU Exhibit-287 reads as follows:

"Provide the plant operators with standard techniques and improved equipment to recover plant from unusual operating situations."

Have I read your handwriting correctly?

A Yes.

Q What improved equipment did you have in mind?

A I had no particular improved equipment in mind.

Q Was there any equipment of which you were aware that was inadequate on March 28th, 1979 (190328) at TMI-2?

A No, sir.

Q Why was it desirable to have improved equipment to recover a plant from unusual operating situations?

MR. WISE: Why was it desirable to have improved equipment. I will object to the form of the question.

If the witness wants to answer it he can.

A I do not know that it is desirable, but that in looking to future plant operation if there are any equipment improvements that could be of value to the plant operation, one would want to recommend those.

Q Did you at any time discuss any of the items listed under "Actions" under Item-1 here in words or substance with Dr. Womack?

A I don't recall any discussions of the action. I would also point out that the Xerox has eliminated reference points 2 (point-2) and 3 (point-3), so that in order to clarify your statement I would be referring to the actions listed immediately under the paragraph marked "1."

MR. WISE: I might say that it is not clear from the Xerox that it was the Xerox's so much as it may be through whatever twist of fate the three-hole punch on this appears to have obliterated the specific paragraph numbering on the first page below Paragraph-1.

BY MR. GLASSMAN:

Q Mr. LaBelle, was this document maintained in a looseleaf binder of any sort?

A Since it has holes in it or appears to have holes in it that may be the case.

Q When you prepared this document were there any numbers inserted at the beginning of paragraphs on Page 1 other than the number 1?

A As best I can recall, yes, there were.

Q Where did other numbers appear in the document as you prepared it?

A As best I can recall, there would be a "2" before "Misinterpretation" and a "3" before "Plant design and operation."

Q Did any of the remaining circle or hole marks on this document obliterate anything else in the original so far as you recall?

A Not that I can tell, no, sir.

Q Had vital information required for an operator to make critical decisions to protect the reactor core been identified at any time prior to the TMI-2 accident?

MR. WISE: I am going to object to the question. I think you are introducing an uncertainty into the record that is not necessary at all.

I will permit him to answer it if he can understand it.

MR. GLASSMAN: I think the question is

clear.

MR. WISE: If you want to make clear your question it seems to me you ought to either tie it to what has been wr tten here or ask him the question in a general sense; that is my problem.

If you are tying it to what has been written in the document which you have shown to the witness, if you are asking him a question relating to that document, that is one thing.

If you are asking him some other question about "vital information," whatever that may mean to anybody for all time outside this document, that is another question.

What my problem is is that I am not sure which question it is you are asking the witness. Is your question directed specifically at the particular sentence in GPU 287 (Exhibit-287) that you were examining about earlier or are you now asking some other question?

MR. GLASSMAN: My question is in general. I think the question is just a general question without regard to the document as such and --

MR. WISE: Then I do have an objection

based upon the fact that it seems to me that we have had no definition or foundation here for what is vital information in a general sense.

If you want to tie it to what he specifically wrote in this exhibit, that is one thing; but if you are asking it in a general sense, it seems to me vital information may be very different to different people, and until we have some foundation --

MR. GLASSMAN: I would be delighted to ask that question. I believe Mr. LaBelle already testified that "vital" means "vital."

MR. WISE: He testified with respect to specific questions. You were asking about Exhibit ~~207~~ 287. You have changed the question and have gone into a new area, and I don't think the questions are the same at all.

BY MR. GLASSMAN:

Q Mr. LaBelle, what does the term "vital information" mean to you as it relates to information required for an operator to make a critical decision to protect the reactor core?

I would like you to please answer the

question without regard to this particular document.

A I think you have answered your question by stating that "vital information" is that information which is required for the operator to make critical decisions with respect to reactor core protection.

Q Had such information been identified by B & W prior to the TMI-2 accident?

MR. WISE: The question is had B & W identified any information an operator needed to know before he could run the reactor safely. I think this is getting silly.

MR. GLASSMAN: I think the question stands on its own, Mr. Wise. I don't think you need to rephrase it.

MR. WISE: It isn't a question of rephrasing it. It's a question of annoyance at what appears to be a waste of time, Mr. Glassman.

To sit here at this stage in this litigation and talk about whether B & W had ever given any information to GPU that an operator needed to run the thing is silly. We all know that there was information given.

MR. GLASSMAN: Thank you for your testimony, Mr. Wise.

MR. WISE: It isn't testimony, Mr. Glassman. You are wasting our time.

MR. GLASSMAN: If we get an answer to the question we can proceed and there won't be any more time wasted.

MR. WISE: I don't understand what the question is.

Do you seriously have a question as to whether B&W provided information to GPU? Is that what we are doing here this afternoon at sixteen minutes past 12:00 into the eighth or ninth deposition in this case?

MR. GLASSMAN: Mr. Wise, it is obvious this question is a predicate for a further question and I think we can have a simple yes or no answer.

We can put you on the stand. I believe Mr. LaBelle is the witness. If he is as clear of the answer as you are, we will proceed and not waste any time. It will take us one second to get a yes or a no.

MR. WISE: I think I do have an interest in protecting the record here and it seems to me that we are introducing a lot of needless

confusion into the record by questions that are vague, broad and general in a way that does not advance these proceedings one whit.

MR. GLASSMAN: It may not advance B&W's position in the case, but we are entitled to find out whether it advances ours.

MR. WISE: You are not entitled to twist the record around and play word games in a way that denies information which everybody knows is true.

MR. GLASSMAN: If that is the case, then let us have the answer from the witness.

MR. WISE: Why don't you repose the question and let's try and proceed, but I think that really this is stretching it quite a good deal.

I tried to be very lenient in terms of not presenting objections, but there are limits.

MR. GLASSMAN: If it is as clear as you say, Mr. Wise, we will have a yes or no answer and we will proceed.

Will the reporter please repeat the pending question?

(The pending question was read by the

reporter.)

MR. GLASSMAN: I will rephrase the question on the record.

BY MR. GLASSMAN:

Q Mr. LaBelle, was vital information which was required for an operator to make critical decisions to protect the reactor core identified by B & W prior to the TMI-2 accident?

A I would feel that the operator had been provided with such information for core protection, yes, sir.

Q Was there any vital information of which you were aware which was not provided to operators prior to the TMI-2 accident and which would have assisted the operator in making critical decisions to protect the reactor core?

A No, sir.

Q Were the operators made aware prior to the TMI-2 accident of the possibility of a loss of coolant accident (LOCA) involving increasing pressurization level and decreasing pressure?

MR. WISE: I object to that. He can't possibly answer that question.

MR. GLASSMAN: Let us find out.

A I do not know.

MR. WISE: Yes. You may ask him if he did it, but to ask him what the operators knew without establishing whether Mr. LaBelle met any of them I think is a little silly.

BY MR. GLASSMAN:

Q Mr. LaBelle, did B&W provide its customers with any information concerning the possibility of a loss of coolant accident (LOCA) involving an increasing pressurizer level and decreasing pressure in the pressurizer?

A I do not know.

Q If you wanted to find out, who would you ask?

A For operating plants I would refer to our nuclear service (NS) department.

Q When you refer to the nuclear service department are you referring to the department now designated as the customer service (CS) department?

A I believe so.

Q Who in that department would you ask?

A I don't know.

Q The next full paragraph on GPU Exhibit-287 ~~287~~ 9 marked for identification, which is preceded by the item or by the number "2" according to your

testimony as the document was originally prepared, reads as follows:

"Misinterpretation of past operating experiences resulted in continuation of plant operation with a component which possessed a high failure potential."

Whose misinterpretation of past operating experiences were you referring to in this memorandum?

A This was my personal conclusion that there had been past operating experiences which had not been integrated to the point that failure potential had been assessed properly.

MR. GLASSMAN: Will you read back the answer to me, please?

(The record was read by the reporter as requested.)

BY MR. GLASSMAN:

Q What past operating experiences are you referring to?

A As best I can recall this was based on the failure of the PORV, the PORV operation.

Q What failure of the PORV operation are you referring to?

A During the TMI-2 incident.

Q What operating experiences prior to the TMI-2 incident were you referring to in this paragraph?

A The one that I recall was the one at Davis-Besse.

Q When did that occur?

A I do not know.

Q But it was prior to the TMI-2 accident; is that correct?

A As best I can recall, yes, sir.

Q In what respect had the operating experience involving the PORV at Davis-Besse been misinterpreted?

A Not referring specifically to Davis-Besse but to the potential for failure of a component such as the -- the component operation such as the PORV should hold some significance if it occurs more than one time.

Q Had the PORV failed more than one time on B&W designed plants prior to the TMI-2 accident?

A I could not say with assurety that the PORV itself had failed. I would recall that there had been operating situations where the PORV had been open during operation.

Q Do you recall that there were situations prior to the TMI-2 accident in which the PORV had

opened and had failed to close as it was designed to do?

A Not that I could state with assurety, no, sir.

Q Was it your understanding when you prepared Exhibit GPU 287 (Exhibit-287) that such events had occurred?

A It was my understanding that the PORV operation needed to be further examined.

Q Were you aware of a stuck-open PORV occurrence at the Oconee plant in 1975 (150000)?

A I do not recall that the PORV was stuck open or the specific date of the incident that you have described. I have some recollection of a PORV operation concern at Oconee.

Q What was the basis of your conclusion that past operating experience with PORV prior to the TMI-2 accident had not been integrated to the point that failure of the PORV had been assessed properly by B & W?

THE WITNESS: Could you repeat that question, please?

(The pending question was read by the reporter.)

A My recommendation here had no particular basis nor would I like for it to imply that B & W had not

followed a proper course of review following any earlier events surrounding PORV operation, but that in the follow-on operation of B&W plants that it would certainly be worthwhile to continue to look for events which were recurrent and their importance.

Q The second full paragraph on GPU Exhibit-287 287 uses the past tense when it says "Misinterpretation of past operating experiences results" -- I add emphasis to "resulted" -- "in continuation of plant operations with a component which possessed" -- and underscore, I emphasize the word "possessed" -- A high failure potential."

Is that correct?

MR. WISE: That is what that says. You have read that properly. Do you have a question for the witness?

BY MR. GLASSMAN:

Q Is that correct, Mr. LaBelle?

MR. WISE: I object to that. This is harassing him. Let us get on with the examination.

MR. GLASSMAN: I don't think it is harassing at all, Mr. Wise. The document speaks in the past tense and the witness is attempting

to characterize this document as purely speaking in the future tense.

There seems to be an inconsistency. I would like to make it clear that this deals with the past tense.

MR. WISE: I don't think that is a fair characterization of what Mr. LaBelle had to say nor do I think that is the proper way to continue and advance this deposition.

If you have questions of the witness you may pose them. To read something to him and ask him to correct your reading seems to me a waste of time.

MR. GLASSMAN: As long as we all agree it refers to the past tense.

MR. WISE: What refers to the past tense? We can all agree what this document says. You have read it. We have all read it.

BY MR. GLASSMAN:

Q What operating experiences prior to the TMI-2 accident had been misinterpreted?

MR. WISE: Hasn't that question already been asked and answered? I thought we did this about five minutes (5 minutes) ago. We had testimony about

PORV failures and there was quite a good deal of discussion about that.

MR. GLASSMAN: We will accept that, Mr. Wise, and we will go on.

BY MR. GLASSMAN:

Q Mr. LaBelle, were there any past operating experiences other than PORV failures which had been misinterpreted prior to the TMI-2 accident and resulted in continuation of plant operation with a component which possessed a high failure potential?

A Not that I am aware of.

Q Had past operating experience with respect to PORV been integrated by B&W to the point that failure of the PORV had been assessed properly before the TMI-2 accident?

A It had been assessed and I don't think I could offer anything further to that.

Q Had it been assessed properly?

A Who can define what "properly" is?

Q What do you mean by the term "properly" as used in your previous testimony?

A With one hundred percent (100-percent) probability of successful resolution.

Q Who within B & W had assessed the

likelihood of failure of the PORV prior to the TMI-2 accident?

A I do not know.

Q Do you know what unit made such an assessment?

A I do not know.

Q Do you know if any person or unit within B&W made an assessment of the likelihood of failure of the PORV prior to the TMI-2 accident?

A I do not know.

Q If you wanted to find out, who would you ask?

A I just would not know.

Q The next sentence in GPU Exhibit-274 marked for identification reads as follows:

"Focus shifted too much to plant operation/availability rather than overall plant safety and equipment reliability."

What did you mean by the term "availability" as used in that sentence?

A The period of time for which the plant is in operation versus the period of time for which the plant could have been in operation.

Q Prior to the TMI-2 accident was the focus

shifted too much to plant operation/availability rather than overall plant safety and equipment reliability?

THE WITNESS: Could you please repeat that question. I didn't hear the first part of it.

(The pending question was read by the reporter.)

A Not that I am aware of. My recommendation here is focusing on further review of equipment maintenance versus equipment reliability.

Q Prior to the TMI-2 accident was B&W focus in any respect directed towards equipment maintenance rather than equipment reliability?

A There is an emphasis on maintenance of equipment through our nuclear (NS) or customer service (CS) department.

Q Why is there an emphasis on maintenance of equipment rather than equipment reliability?

A My recommendation here is one of utilizing the maintenance history more to further examine the reliability of components that were being maintained or replaced.

MR. GLASSMAN: I would like to have the question repeated and I would like you to answer the question, Mr. LaBelle, without regard to your

recommendation in this document.

(The question referred to was read by the reporter as requested.)

A This is consistent with the design for operation of the plants to the best of my knowledge.

MR. GLASSMAN: Can you read that back, please?

(The record was read by the reporter as requested.)

BY MR. GLASSMAN:

Q Was this consistent with the design for operation of the plants prior to the TMI-2 accident?

MR. WISE: Was what consistent? You know, I have a real problem with proceeding this way with these continual jaunts into vague, ambiguous sorts of things, questions that contain as their subjects words like "this" and "that" and "such" and so on. It just makes it very difficult to know where we are in the record.

MR. GLASSMAN: I guess with all due respect, Mr. Wise, maybe my memory of the prior question is better than yours.

MR. WISE: I would be willing to concede

that happily, but in terms of being able to follow, I wish you would give me a little consideration and I tend to be a little slow sometimes with these things I know, but if you could just spell out in each question to some extent what it is you are asking, it would certainly help me in trying to follow along here.

MR. GLASSMAN: I will try, Mr. Wise. I will gladly be of assistance to you.

MR. WISE: Thank you.

BY MR. GLASSMAN:

Q Mr. LaBelle, prior to the TMI-2 accident was there an emphasis at B & W on maintenance of equipment rather than on equipment reliability?

A In a general sense that was my opinion.

Q What was the basis of your opinion?

A Just that it was an opinion.

Q Was that based on your experience at B & W?

A Yes, sir.

Q Was the emphasis at B & W on maintenance of equipment rather than equipment reliability prior to the TMI-2 accident as you understood it consistent

with the design for operation of the equipment prior to the TMI-2 accident?

THE WITNESS: Could you repeat that one again, please?

(The pending question was read by the reporter.)

A The maintenance and reliability supporting the design of B & W supplied equipment was consistent with design -- the design basis in effect prior to the TMI-2 incident.

Q When you refer to the design basis for the equipment as in your last answer, are you referring to design basis for the equipment provided by B & W?

A Yes, sir. I would qualify that by saying as provided by B & W and as licensed with the Nuclear Regulatory Commission (NRC).

MR. WISE: Off the record.

(Discussion off the record.)

BY MR. GLASSMAN:

Q Mr. LaBelle, in the next indented paragraph on GPU Exhibit-287 under the heading "Action" there are initials DRB which appear ir that paragraph. Can you tell us what that refers to?

A DRB refers to Design Review Board.

Q On the next line at the very end of the line there are the letter "R" and the letter "D." Does that correctly refer to R & D? My copy is not quite legible.

A R & D, Research and Development.

MR. GLASSMAN: I think this is a good time to break for lunch.

(Whereupon, at 12:52 o'clock p.m., a luncheon recess was taken.)

* * *

AFTERNOON SESSION

2:18 P.M.

D A N N Y W. L a B E L L E resumed as a witness and, having been previously duly sworn, was examined and testified further as follows:

EXAMINATION (Continued)

BY MR. GLASSMAN:

Q Mr. LaBelle, in the second indented

paragraph under the heading "Action" there is a sentence which reads as follows, referring to the last sentence of that paragraph:

"We should not be restrained from hardware backfit."

What is meant by the term "hardware backfit"?

A I think the reference here is to hardware improvements being made on operating plants.

Q What does the word "we" refer to in that sentence?

A As best I can recall, Babcock & Wilcox (B&W)

Q Was Babcock & Wilcox in any way restrained from hardware backfit in the period prior to the TMI-2 accident?

A I think here you have to view this in a general environment in which there are many recommendations for hardware, operational or other improvements that could be suggested by Babcock & Wilcox or any other firm that is attempting to sell equipment or services and that not all of those recommendations are accepted or purchased by a customer.

Q With that background in mind, can you tell us whether in the period before the TMI-2 accident

Babcock & Wilcox (B&W) was restrained in any manner from hardware backfit?

A Not that I could say in the strictest sense, no, sir, other than the fact that there were improvements or suggestions or recommendations that were not sold to our customers.

Q Were there improvements, suggestions or recommendations that were not sold to B&W customers because of any restraints from hardware backfit?

A In the same context as I have mentioned previously, not that I am aware of.

Q What did you mean by the word "restrained" in this sentence?

A As best I can recall just in looking at the wording that is provided here, that of continuing to look at operating experience, component reliability, plant operations which may be of continued benefit and understanding for our customers.

Q Was there a full-time organization within B & W prior to the TMI-2 accident which was devoted to operating experience?

A Not that I can recall - a full-time service that a customer had purchased, no, sir.

Q Was there a full-time service devoted to

operating experience that was offered to customers prior to the TMI-2 accident?

A I have no knowledge of that type of area, no, sir.

Q The next paragraph of GPU Exhibit-274 marked for identification reads as follows:

"Plant design and operation has been too rigidly based upon conservative techniques and supported by a design bases which contain highly limited analytical work scope."

What is meant by the term "conservative techniques"?

A Well, conservative technique is a phrase that says that it is a conservative technique.

I don't understand your question.

Q In what respect are techniques conservative?

A Just by assumptions that those techniques are based on and the input used in those techniques.

Q Were conservative techniques used by B&W in preparing the SARs?

A In the context of the accident analysis submitted in the Safety Analysis Reports, yes, sir.

Q In what respect did the design basis for plant design and operation contain highly limited

analytical work scope, with particular emphasis on the word or words "highly limited"?

A I think to put the entire paragraph into perspective for you, that the paragraph deals with analyses that have been provided for the licensing of plants via the accident analysis in the Safety Analysis Reports (SAR) and that would be beneficial to the nuclear industry to have additional analytical work done to continue to improve upon the understanding of plant operation.

Q In what respect was the analytical work scope highly limited?

MR. WISE: I think he just answered that question.

BY MR. GLASSMAN:

Q Mr. LaBelle, what were the limitations upon the work scope of the SAR's?

A The limitations are the results of the work that is presented in the accident analysis of the Safety Analysis Report.

Q Aside from the limited results, what did you mean by "limited analytical work scope"?

A Limited work scope is a part of the results of the accident analysis which was referred to previously

for the Safety Analysis Report (SAR).

Q What did you mean by the term "work scope"?

A Work scope is the -- is just what it says, the scope of the work presented in the Safety Analysis Report, accident analysis.

Q Following the TMI-2 accident did you learn that additional analytical work beyond that performed for the SAR's would be beneficial to the nuclear industry?

MR. WISE: I will object to the form of the question. The witness can have a try at answering that if he desires.

THE WITNESS: Would you repeat the question, please?

(The pending question was read by the reporter.)

A I believe in a general sense that analysis following the TMI-2 incident which would be helpful in understanding the events which occurred or which may be of help to the industry in furthering the understanding of other events would be helpful to the nuclear industry. I will qualify that by saying "but not necessary."

Q Are there any other qualifications you

would like to make?

A No, sir.

Q I would like you to refer to Page 2 of GPU Exhibit 287 marked for identification. Will you tell us what you were referring to by the words "best estimate techniques" in the first sentence on Page 2?

A Best estimate in the context used here would be referring to as close to actual as possible.

Q How would that differ from bounding techniques?

A Bounding techniques in the context used here would be referring to trying to provide a conservative response in any one or all results of the technique.

Q After the number "4" on that same document there is a sentence which reads:

"The analytical and hardware designers have become too separated from actual plant operation response to transient conditions at sites."

What were you referring to when you were referring to analytical and hardware designers?

A To put this into the proper context, I would note that the analytical and hardware design staff of

an engineering department such as the Babcock & Wilcox (B&W) Company would be operating in an atmosphere of continuing business involvement with development and sale of our products and services -- of their products and services, and as such are not limited to servicing plants that are in operation.

Q Had the analytical and hardware designers at Babcock & Wilcox become too separated from actual plant operation response to transient conditions at sites prior to the TMI-2 accident?

A In the context of the previous explanation, yes, sir.

Q Under Item No. 5 (Item-5) on Page 2 of GPU Exhibit 274 ~~274~~ marked for identification, under the heading "Action," there is a sentence that reads as follows:

"Design philosophy should tend to minimize the need for operator intervention during any transient operating mode until such time as event can be diagnosed properly and appropriate actions taken."

Have I properly read your handwriting, Mr. LaBelle?

A Yes, sir.

Q Did you discuss in words or substance this

statement with anyone at B & W?

A Not that I can recall.

Q When you prepared this statement did you have any particular type of operator intervention in mind?

A No, sir.

Q Were you at this time aware that the operators at TMI-2 had intervened to terminate the high pressure injection (HPI) during the course of the day?

THE WITNESS: Will you repeat the question, please?

A If you are referring here to the TMI incident of March the 28th, 1979 (790328), I would say that I had an awareness of operator involvement during the event sequence and that may have been a part of the basis for my recommendation.

Q Were you aware of the design of any other nuclear plant which involved the minimization of a need for operator intervention during a transient operating mode until such time as the event could be diagnosed properly and appropriate action taken?

A Yes, sir.

Q Can you tell us what you were aware of in that regard?

A We have a -- B & W has a German contract with Brown Boveri Reaktorate (BBR), which part of the design basis prescribes the minimization of operator actions during transients until such time as they can be properly diagnosed.

Q Who provided the design basis for that plant?

A The German government.

Q Did B & W design the plant to satisfy those requirements?

MR. WISE: Did B & W design the plant. I object to that question. It is contrary to the facts which have been established in this case.

BY MR. GLASSMAN:

Q Do you know what the proscriptions on an operator action with respect to high pressure injection (HPI) are on the MK (M-K) plant?

A I do not understand what you mean by proscription.

Q Is the operator on the MK plant permitted to terminate high pressure injection during a transient operating mode before the event could be diagnosed properly and appropriate action taken?

A I do not know.

Q Do you know if the operator on the MK (M-K) plant is permitted to terminate high pressure injection (HPI) during the first thirty minutes (30-minutes) of a transient?

A Let me state for the record that I am aware of a time limit criteria that is used in the German licensing, but I do not know the exceptions that could be taken from that requirement.

Q Are you referring to a time limit criteria on operator termination of high pressure injection?

A I am referring to a general time limit criterion.

Q Are you referring to a general time limit criteria for operator action following a transient?

A Yes, sir.

Q When did you first become aware of such time limit criteria?

A I do not know.

Q But before the TMI-2 accident?

A Yes.

Q Approximately how long before the TMI-2 accident did you become aware of such time limit criteria?

A I do not know.

Q How did you become aware of such time

limit criteria?

A Through general consultation, technical consultation, with my counterpart at Brown Boveri Reaktorate (BBR).

Q Who was your counterpart at Brown Boveri Reaktorate?

A At that time it would have been Mr. Caspar.

Q Do you know Mr. Caspar's position at BBR?

A I do not know his current position, no, sir.

Q Do you know what his position was for the entire period prior to the TMI-2 accident?

A I do not know his specific organizational name. It would have been the counterpart of the Safety Analysis Unit.

Q Do you know if there was an additional person at BBR who was the counterpart of the ECCS Unit?

A Yes, sir.

Q Who was that?

A I do not recall.

Q During the period prior to the TMI-2 accident how frequently did you have technical consultations with Mr. Caspar?

A Only as requested.

Q And requested by whom?

A Mr. Caspar.

Q Did anyone else request you to consult with Mr. Caspar?

A I could not say that that did not happen.

Q Did Dr. Womack ever request you to consult with Mr. Caspar?

A I do not know.

Q For what purpose did you consult with Mr. Caspar before the TMI-2 accident?

A I think to put this into the proper context, the Babcock & Wilcox (B&W) Company was in a position of selling technical consulting services to the Brown Boveri Reaktorate (BBR) Company in Germany, and my involvement with them would have been to the extent that my services were sold to them or my organization.

Q Will you describe for us the services of you or your organization that were sold to Babcock Brown Boveri?

MR. WISE: Did you say "Babcock Brown Boveri"?

MR. GLASSMAN: I'm sorry. I will withdraw that.

BY MR. GLASSMAN:

Q We will call it BBR, Brown Boveri

Reaktorate.

A Not specifically, I could not.

Q Can you describe them for us generally?

A Since they were a counterpart of the Safety Analysis Unit in terms of the contact I would have had with the BBR organization we could have provided a variety of services in that particular Safety Analysis Unit's operation.

Q Did you maintain any file with regard to the services you provided?

A There may be such a file.

Q If there was such a file where would it be?

A This would be in my personal chron file.

Q Did Babcock & Wilcox's (B+W) Safety Analysis Unit perform safety analysis for BBR for the MK (M-K) plant?

A We would have assisted BBR in performance of safety analysis, but I could not attest to what those particular areas would be.

Q Did you assist BBR in safety analysis for the MK plant in the period prior to the TMI-2 accident of March 28th, 1979 (790328)?

A To the best of my recollection, yes.

Q Was such safety analysis at that time based on German licensing requirements?

A Yes, sir.

Q Did the ECCS Unit perform any analyses for BBR for the MK (M-K) plant in the period prior to the TMI-2 accident?

A I do not know.

Q Did you mention or discuss German licensing requirements with anyone at B&W at any time prior to the TMI-2 accident on March 28th, 1979 (790328)?

A Not that I recall, but it could have happened.

Q Did you make any notes or prepare any documents whatsoever relating to German licensing requirements prior to the TMI-2 accident?

A I don't know.

Q If you made such notes or prepared such documents, where would they be found?

A If they still exist, they should be in my BBR personal chron file.

Q Do you have any reason to believe that such documents once existed but no longer exist?

A It was a long time ago. I just do not know.

Q Approximately how long ago was this work done?

A I don't know.

Q Do you recall the approximate years?

A It was just too long ago.

Q Prior to the TMI-2 accident did you consult with anyone other than Mr. Caspar from BBR?

A Could you explain what you mean by "consult"?

Q We can be more general than that, Mr. LaBelle. I will rephrase the question.

Prior to the TMI-2 accident of March 28th, (190328) 1979, did you meet with or have any discussions with any persons from BBR other than Mr. Caspar?

A It is certainly possible.

Q Do you recall any other persons with whom you met or spoke?

A No, sir.

Q Did you discuss with Mr. Caspar or anyone else at BBR any aspects of the Davis-Besse transients which occurred in 1977?

A Not that I can recall.

Q Did you go to Germany at any time prior to the TMI-2 accident?

A Yes.

Q What was the purpose of your going to Germany?

A I do not recall.

Q Did you go there on business?

A Yes, sir.

Q Did you visit with people at BBR?

A Yes, sir.

Q Do you recall when you went?

A No, sir.

Q Did you bring any written materials with you at that time?

A I do not recall.

Q Did you keep any records of any visits you made to Germany?

A I could have.

Q Do you recall any such records?

A No.

Q If you did maintain such records where would they be?

A They would be in my personal BBR chron file.

Q What period of time is covered by your personal BBR chron file?

A I do not know.

Q Does it cover the period subsequent to the TMI-2 accident?

A It should.

Q What is the basis of your statement that it should cover the period after the TMI-2 accident?

A I have no recollection of what materials I may have kept relating to the B&R contract following the Three Mile Island incident (TMI-2).

Q Prior to the TMI-2 accident were you familiar with any other differences in design between the MK (M-K) plant and other B&W designed plants?

MR. WISE: Any other than what?

MR. GLASSMAN: Any plants other than the MK plant.

MR. WISE: Can I have the question read back? Maybe I missed something.

MR. GLASSMAN: Maybe you didn't.

(The pending question was read by the reporter.)

MR. WISE: Number one (Number-1), there is no predicate for the question that I heard.

MR. GLASSMAN: I will rephrase the question.

BY MR. GLASSMAN:

Q Mr. LaBelle, prior to the TMI-2 accident were you familiar with any differences in design between the MK plant and the B & W 205 plants?

A I think first off you have to put into perspective the fact that the Muelheim-Kaerlich plant was designed by the Brown Boveri Reaktorate (BBR) organization

based upon the 205-fuel assembly design plant that B&W offers domestically and there could be design differences that exist. I am not aware of all of those design differences.

Q Are you familiar with an automatic PORV block valve closing feature of the MK-1 (1-K) plant?

A I am aware that it is a consideration.

Q What do you mean by the term "consideration"?

A It is a design consideration. To the best of my knowledge, that has not been finalized.

Q Could you describe for us the design consideration for automatic closure of the PORV block valve as you understand it?

A No, I could not.

Q When did you first become aware of this design consideration?

A I do not recall a specific time.

Q Did you become aware of it before the TMI-2 accident of March 28th, 1979? (790328)

A No, sir.

Q Do you know if such a design feature involving automatic closure of the PORV block valve has ever been offered to an American plant?

A No, sir.

Q Did you at any time see any documents prepared by other plant design unit managers relating to lessons learned or potential lessons to be learned?

A Not that I can recall.

Q Do you know whether any other plant design unit managers ever prepared such documents?

A No, sir.

MR. GLASSMAN: Off the record.

(Discussion off the record.)

(Recess taken.)

MR. GLASSMAN: I would like to have marked as GPU Exhibit-288 for identification a four-page (4-page) document (790430) dated April 30th, 1979 from Mr. LaBelle to Mr. Roy; Subject: Response to Questions on LOFW for 177 (177-FA-PLANTS) and 205-FA-Plants.

(Document dated April 30th, 1979 to Mr. Roy from Mr. Labelle, consisting of four pages, was marked as GPU Exhibit No. -288 for identification as of this date (8/0603).)

BY MR. GLASSMAN:

Q Mr. LaBelle, I show you what has been marked as GPU Exhibit 288 for identification (handing document to the witness). Did you send that document

to Mr. Roy in the ordinary course of business?

A It says that I did, so I must have.

Q Does your signature appear at the end of the last page?

A Yes, sir.

Q There is a reference on GPU Exhibit-288 marked for identification to"D. H. Roy to E. A. Womack, (177-FA-plants) Analysis of LOMFW flow for 177A and 205-FA-plants, (790405) April 5, 1979A."

I show you what has previously been marked as GPU Exhibit-40 for identification and ask you if that is the document to which you were referring in GPU Exhibit 288 (handing document to the witness).

A I could not say with any assurety that it is.

Q Do you know of any other document that would fit the description on the reference line to GPU Exhibit-288?

A Not that I recall.

Q Did you prepare Exhibit GPU Exhibit-275 at the request of Dr. Womack?

A I do not know.

Q Do you know what caused you to prepare GSU Exhibit 288?

A Not a cause that I can recall.

Q Did Dr. Roy request you to prepare a response?

A Not that I can recall.

Q Have you ever seen a copy of GPU Exhibit-40 ~~40~~ at any time in the past?

A I just do not recall.

Q Do you recall receiving any document raising questions such as or similar to those contained in GPU Exhibit 40?

A I do not recall, although Exhibit-288 states that this particular exhibit contains responses to several questions which have been raised in the referenced memo.

Q I would like you to review GPU Exhibit-288 ~~288~~ marked for identification and just tell us whether you discussed any of the questions or responses contained in this exhibit with anyone else at B&W.

A I have no recollections of having discussed these items with others within B & W.

Q The first paragraph of GPU Exhibit-275 refers to responses"based on analytical results obtained for the most part from CADDS simulation studies of the TMI-2 event."

Were those studies done within the Safety

Analysis Unit?

A Yes, sir.

Q Do you know who performed those studies?

A Yes, sir.

Q Who performed those studies?

A Mr. C. S. Banwarth, B-a-n-w-a-r-t-h. That could be a w-o, but I think it is w-a-r-t-h.

Q Did anyone else perform those studies?

A You are referring here to CADDS-type studies?

Q Yes.

A There could have been others.

Q Did you supervise the CADDS simulation studies which are referred to in this document?

A I would have, yes, sir.

Q What other studies were made in the course of preparing the responses in this document?

A What do you mean by "what other studies"?

Q The sentence you were just referring to reads:

"The responses are based on analytical results obtained, for the most part, from CADDS simulation studies of the TMI-2 event."

What did you mean by the words "for the most part"?

A As best I can recall, not all of the questions could be responded to with information provided by the Safety Analysis Unit through the CADDS simulation studies.

Q What questions could not be responded to through the CADDS simulation studies?

A Okay. To the best of my knowledge, at least Questions ~~3~~ (Question-4) 3, (Question-6) 4 and 6, and (Question-7) 7, could not have been completely responded to by safety analysis.

Q What are the basis of the responses to Questions 3, 4, 6 and 7?

A I am not sure what I understand by "basis."

Q How did you formulate a response to Questions 3, 4, 6 and 7?

A I have no recollection.

Q Was there any input to these responses from the ECCS Unit?

A From the response and the question, it would appear that there was some input provided by the ECCS Unit.

Q Did any other unit within B&W provide input to these responses?

A There could have been, but I could not say based upon the responses that are provided.

Q Did you maintain a file with regard to the preparation of responses to these questions?

A I do not recall.

Q If there is such a file, where would it be?

A It would be in my personal TMI-2 chron files.

Q What is meant by the words "initiated normally" which appear in Question-1 on Page-1 of GPU Exhibit-288 marked for identification?

A Just what it says, initiated normally.

Q How long after the loss of main feedwater (LOFW) would auxiliary feedwater (AFW) have been initiated normally?

A I do not know.

Q Was it your conclusion that if auxiliary feedwater had been initiated normally the pressurizer at TMI-2 would still have filled due to HPI actuation on low RC system pressure?

A You are asking if I agree with the response?

Q Is my characterization of the response correct?

THE WITNESS: Could you repeat the question, please?

(The question referred to was read by the

reporter.)

A That is the response that is provided here.

Q Was that response based on CADDS simulation studies by the Safety Analysis Unit?

A Not in its entirety, no, sir.

Q What else was that response based on?

A An extrapolation of the work that was performed with the CADDS code.

Q Question No. 2 (Question-2) refers to a delay of auxiliary feedwater (AFW) at TMI-2. Do you know what length of delay was being envisioned in this question?

A Based on the response, I would gather that the time period of eight minutes (8 minutes) which is consistent with the sequence of events (SOE) for the TMI-2 incident was used upon which to provide the response.

Q Is it correct to state that based on studies performed by the Safety Analysis Unit you concluded that if the PORV had operated properly at TMI-2 on March 28th, 1979 (790328), there would have been no core uncovery even though the auxiliary feedwater was delayed eight minutes?

A That is what the response says, yes.

Q I would like you to refer for a moment to Page-2 of GPU Exhibit-288 marked for identification

and in particular Question—3 and the response to Question 3.

Is it correct to state that the analysis done by B&W indicated that if HPI had not been terminated on March 28th, 1979, at TMI-2, HPI would have been adequate to prevent core uncovery regardless of a stuck-open PORV and regardless of a delay in auxiliary feedwater?

A This is what the response says. The response itself was not a result that would have been provided by the Safety Analysis Unit or myself.

Q Who provided this response?

A As best I can recall it would have come from the ECCS Unit.

Q Do you recall who in the ECCS Unit provided that response?

A No, sir.

Q Was it Bert Dunn?

A I do not know.

Q The response to Question No. 4-A, states at the beginning:

"No. Raising the bottom of the pressurizer would have made no material difference up through the turning off of the reactor coolant pumps."

Do you know at what point in time after the loss of main feedwater (LOFW), the reactor coolant pumps (RCP) were turned off?

A You are asking do I know the sequence of events (SOE)?

Q Yes.

A At the time at which the pumps were turned off?

Q Yes.

A I cannot recall the exact times, no, sir.

Q Do you recall approximately when that was?

A The pumps in one loop were turned off around seventy minutes (70-minutes) into the transient and the other loop around one hundred minutes (100-minutes) into the transient.

Q Further on in this paragraph there is a reference to a"loop seal effect of our pressurizer design." Can you tell us what is meant by that?

A The loop seal referred to is the fluid within the surge line between the coolant loop hot leg and the pressurizer inlet.

Q How did the loop seal affect come into play when steam is present in the primary hot leg and the electromatic relief valve (PORV) is closed?

A Are you referring to the period of the TMI-2 incident?

Q Yes.

A I could not respond to that because I do not have the expertise to respond to your question.

Q Who within B&W has the expertise to respond to that question?

A That question was examimed by the ECCS Unit.

Q Do you know who in the ECCS Unit examined that question?

A I know that Mr. Dunn has done some work with respect to the question.

Q Can you describe for us the words or the substance of Instruction No. 472 referred to on this page of GPU Exhibit 288 marked for identification?

A I have no recollection what the instruction was.

Q Was additional information ever provided in response to such an instruction?

A I do not recall.

Q Do you know what additional information is referred to in this sentence?

A No, sir.

Q If you wanted to find a copy of Instruction No. 472 where would you look?

A I do not know.

Q How would you go about it?

A I do not know who maintained the instructions

that were issued.

Q If you wanted to find out who maintained the instructions that were issued, who would you ask?

A I would have asked my immediate supervisor.

Q Was that Dr. Womack?

A Yes, sir. At that time, at the time of this memo.

Q If additional information had in fact been provided in response to that instruction, would you have retained a copy of it?

A I do not know.

Q Do you know where such additional information would be found?

A I could only offer a guess as to where it would be.

Q Where would you --

A If it was produced.

Q Where would you look if you wanted to find such information?

A If it was produced by the Safety Analysis Unit it would be in the TMI-2 personal chron file that I maintain.

Q If it was not produced by the Safety Analysis Unit where would you look?

A I do not know.

Q I would like you to refer to Page-2 of GPU Exhibit-288 and in particular Question-5 and the response thereto.

What was the margin between peak system pressure after a reactor trip and the set point for the opening of the electromatic relief valve (PORV) prior to the TMI-2 accident?

A I cannot recall the specific set points for the high pressure (HP) trip versus the electromatic relief valve set point other than to state that the set points were reversed in sequence which is shown here in this response such that the electromatic relief valve set point was put at a higher actuation pressure than the high pressure trip set point of the reactor protection system.

Q Why was this change made?

A The one consideration that I am aware of was that of attempting to provide protection of the reactor system without actuation of the electromatic relief valve for anticipated operating occurrences.

Q Was such a change ever considered prior to the TMI-2 accident?

A Not that I am aware of, sir.

Q Do you know why it was never considered before the TMI-2 accident?

A No, sir.

Q Referring to Question--6 on this same page, what is meant by the terminology "electromatic relief valve (PORV) set point drift"?

MR. WISE: I will permit the witness to answer that question, but I think that you are making an assumption about the word "drift" as to whether it is a noun or a verb and I don't have the slightest idea which it is and I would simply advise Mr. LaBelle that he can explain that term any way he thinks proper.

MR. GLASSMAN: Well, perhaps at trial we will call in a grammatician, but in the meantime I guess we will have to obtain an answer from Mr. LaBelle.

MR. WISE: I think the word is "grammarian," but I could be wrong.

MR. GLASSMAN: We will call somebody on that, too.

A I will attempt to explain what my understanding would be of the wording of electromatic relief valve set point drift, be it a noun or verb.

The set point itself would remain fixed. However it would be possible to have some deviation in the actual opening of the valve either earlier than the set point value or later than the set point value.

This would be a random function as dictated by the nature of the valve and its control system.

Q What is the significance of such set point drift?

A In the context as presented here it would be referring to the margin between the high pressure (HP) reactor trip and the acuation of the electromatic relief valve (PORV).

Q Could there be adverse consequences if a reactor trip failed to be achieved after the electromatic relief valve stuck open?

A I think you are attempting to describe a sequence of occurrences which could occur in -- for some scenario.

Q Is there any adverse consequence to the system of such a scenario?

MR. WISE: Which scenario?

THE WITNESS: There are many different scenarios that could go along with the opening

electromatic relief valve (PORV) and the reactor trip.

Q If the set point for the PORV drifted such that a reactor trip would fail to be achieved if the valve stuck open, what is the worst possible consequence which you could envision?

MR. WISE: I object on the grounds it is a hypothetical question. We have had many arguments over the course of these depositions about whether or not those questions are proper. At this point I will place my objection on the record.

If the witness -- well, I will permit the witness to answer the question if he can.

A It is very difficult to discuss consequences without knowing the specific scenario of events.

Q Had you ever considered the possible consequences of a PORV set point drift such that a reactor trip would fail to be achieved if the PORV stuck open before the TMI-2 accident of March 28th, (790328) 1979?

A I think you have to put this question into perspective with what we have been discussing, that prior to and up until the TMI-2 incident it was a practice to have the reactor trip set point above the

set point for the electromatic relief valve (PORV) which is the scenario that you have just referred to.

The purpose of putting the electromatic relief valve set point above the reactor -- high pressure reactor trip set point was to reduce the likelihood that one would have to face that scenario on a more frequent basis.

Q Prior to the TMI-2 accident was there ever any analysis conducted within B&W relating to set point drift which would result in a reactor trip failing to be achieved when the PORV stuck open?

A Not that I am aware of.

Q In your response to Question 7, why were the actions taken to date considered to be short-term actions?

A Because they were short-term actions.

Q Are the changes in trip and PORV set points which were made after the TMI-2 accident in effect for all B&W designed plants at the present time?

A Could you explain what you mean by all B & W designed plants?

Q I think the question is self-explantory, but I will go on to another question.

Are the changes in reactor trip and PORV set points which were made after the TMI-2 accident still in effect at TMI-2? Do you know that?

MR. WISE: I will permit him to answer although I think the question is rather vague and ambiguous given that there may have been one set of changes after the accident and it is not clear which set you are talking about.

A Also, I don't understand what you mean by "still in effect at TMI-2" since the plant is shut down.

Q I will accept your point, Mr. LaBelle.

Have you considered changes in the set points for the reactor trip and PORV opening back to the original configuration before the TMI-2 accident?

A I am not sure I understand your question.

Q Has B&W subsequent to the TMI-2 accident recommended that the set point for the PORV be higher than the set point for reactor trip?

MR. WISE: Are you sure that is the way you want your question?

MR. GLASSMAN: What did I do?

MR. WISE: Even Mr. Taylor is shaking his head.

MR. GLASSMAN: Yes.

THE WITNESS: Could you read the question?

MR. WISE: Yes, please repeat the question.

(The pending question was read by the reporter.)

A To the best of my knowledge, there has been a short-term recommendation provided to operating plants with B & W (N555) nuclear steam supply systems to alter their set points for the electromatic relief valve (PORV) and for the reactor protection system high pressure (HP) trip in accordance with the electromatic relief valve having a higher set point than the high pressure reactor trip set point.

Q Is there any consideration currently being given within B & W to reverting to the prior arrangement for these set points at which the PORV set point would be lower than the reactor trip set point?

A It would certainly be of operational interest to us to be able to revert back to the previous set points.

Q Why would that be of operational interest to you?

A Because of the capability to accept turbine trips and load rejections with a low frequency of

reactor trips during those power run-back situations.

Q Has there been any study or analysis made within B & W as to how this might be accomplished without calling on the PORV to operate frequently?

A I do not know.

Q What electromatic manual actions were you referring to in your response to Question 7?

A The reference here is to operator instructions for the high pressure injection (HPI) and electromatic manual actions. I have no recollection of the specific instructions regarding electromatic manual actions.

Q The next sentence in this paragraph reads as follows:

"However, longer term projects for operating plant safety evaluation are necessary and are in preparation by the Safety Analysis Unit."

What long-term projects are you referring to?

A I cannot recall specifically what long-term projects, although the response in the next sentence identifies at least two areas of additional review that were being performed for the B & W owners group and the Nuclear Regulatory Commission (NRC).

Q Who was performing this additional review?

A The additional review you are referring to are the two items listed in the last sentence?

Q That is correct.

A Of Page 4?

Q Yes.

A These were examined in part by the Safety Analysis Unit.

Q Did anyone else participate in that work?

A There were others that were involved in these areas.

Q What others were involved?

A I could not specifically identify the other areas involved in that these studies would have cut across the line of responsibilities of many of our engineering staff.

Q Were there any other longer-term projects for operating plant safety evaluation that you now recall?

A There very well may have been, but I can just not recall.

MR. GLASSMAN: I would like to have marked as GPU Exhibit 289 for identification a five-page (5-page) document dated 4/7/79 (790407) from D. W.

LaBelle to John Biller.

(Document dated 4/7/79 (190407) to John Biller from D. W. LaBelle, subject: Request for CRAFT Analysis," was marked as GPU Exhibit No. 289 (Exhibit-289) for identification as of this date (810603).)

BY MR. GLASSMAN:

Q Mr. LaBelle, did you send all or part of GPU Exhibit-289 marked for identification to Mr. Biller (handing document to the witness).

A I must have in that my signature appears on the cover memo.

Q Do you recognize whose handwriting is contained on the attachments to the April 7th, 1979 cover memo?

A No, sir, I do not.

Q Do you recognize the handwriting at the bottom of the cover page?

A No, sir.

Q Who is John Biller?

A At the time that this memo would have been issued he would have been an engineer working for Mr. Dunn in the ECCS Unit.

Q Should the word loft, l-o-f-t, transient in the first line of this memorandum properly read

l-o-f-w?

A Yes.

Q Why did you make this request of Mr. Biller?

A According to the memo it was to assess the effect of tripping the reactor on turbine trip and subsequent effect as far as actuation of the electromatic relief valve (PORV) on the pressurizer.

Q Was not lifting the EMRV for a loss of feedwater (LOFW) with turbine trip desirable?

A I would not look at the lifting of the electromatic relief valve in the terms of desirability. I think this was another study at whether anticipatory trips could reduce the frequency of actuation of the electromatic relief valve.

Q I would like you to refer to the last page of GPU Exhibit-289 marked for identification. At the bottom of that page there is a note which reads:

"Memo was sent to D. W. LaBelle by N. K. Savani on April 9, 1979 (1404.9) at 4:00 p.m. with the results of requested computer run."

Who is N. K. Savani?

A Mr. Savani at the time the memo was written -- let me -- please strike that.

I don't know the timing of the note here compared with the memo and whether the note may have been added after the memo was issued to Mr. Biller, but that Mr. Savani during this time would have been an engineer working in the ECCS Unit.

Q Did you receive a memo sent by Mr. Savani on April 9th, 1979 (790409) showing the results of the requested computer run?

A I do not recall.

Q If you did, where would it be?

A It could be in my personal chron file for TMI-2.

MR. GLASSMAN: I would like to have marked as GPU Exhibit 290 for identification an April 12th, 1979 (790412) memorandum from C. S. Banwarth to Distribution.

(Memorandum dated April 12th, 1979 to Distribution from C. S. Banwarth was marked as GPU Exhibit ~~No.~~ 290 for identification as of this date. (810603))

BY MR. GLASSMAN:

Q Mr. LaBelle, I show you what has been marked as GPU Exhibit-290 for identification (handing document to the witness).

Did you receive a copy of that document

in the ordinary course of business?

A I could not say with assurety that I have.

Q Is there an indication on the document that you received a carbon copy?

A What?

Q Is there an indication on the document that you received a carbon copy?

A Yes, in the upper right-hand corner of the memo (790412) of April 12th, 1979, it shows my name as being on distribution or carbon copied.

Q Under the heading "Capabilities" at the bottom of the first page (page-1), there is a reference to the CADDS model being available for evaluating variations of the TMI-2 incident and in particular whether a reactor trip on turbine trip would have resulted in a significantly different event.

Was such analysis ever performed wich the CADDS model for the TMI-2 event?

A I do not know.

Q If you wanted to find out whether such analysis had ever been done, who would you ask?

A If the analysis had been done it would have been done in the Safety Analysis Unit since Mr. Banwarth was associated with the Safety Analysis Unit

and the CADDS code is a code that is maintained in the Safety Analysis Unit.

Q If such an analysis had been done, would there have been a particular calculational file relating to it?

A If an analysis had been performed there would be a calculational file.

Q At the top of Page-2 there is a reference to the manner in which pressurizer heater operation would affect progress of the event.

Was such an analysis ever done with the CADDS model for the TMI-2 event?

A I do not know.

Q If such an analysis had been performed, where would the results of that analysis be found?

A If the analysis were performed with the CADDS code, the analysis would be found in the Safety Analysis Unit.

MR. GLASSMAN: I would like to have marked as GPU Exhibit-291 for identification an April 26th (000426) memorandum from D. W. LaBelle to E. A. Womack.

(Memorandum dated April 28th (6) to E. A. Womack from D. W. LaBelle, subject: NRC Meeting

on Operating 177—Plants, was marked as (Exhibit-291) GPU Exhibit No. 291 for identification as of this date. (810603)

MR. WISE: I might say that the Xerox does obscure the last figure in the year on the memorandum. However, the first three figures are 1-9-7, and in the course of the memorandum there is clearly a reference to the accident which occurred in 1979. (790000)

Consequently, the only year in the 1970's (700000) decade that this memorandum could possibly be referring to is presumably April 26th, 1979. (790426)

MR. GLASSMAN: I would also point out that the second page of the memorandum contains the notation at the top "April 26th, 1979."

MR. WISE: That is quite right.

MR. GLASSMAN: I think we can stipulate between counsel that the date of this document is April 26th, 1979. Is that agreeable?

MR. WISE: That is agreeable with me.

(Document handed to the witness.)

BY MR. GLASSMAN:

Q Mr. LaBelle, I show you what has been marked as GPU Exhibit—291 for identification. Did you

send that document to Dr. Womack in the ordinary course of business?

A I do not recall the memo, but it has my name attached to it.

Q Does your signature appear on the last page of this memorandum?

A The last page is out of place in my copy.

MR. WISE: Let us move on. This was signed by Mr. LaBelle. Let us go ahead with the questioning.

THE WITNESS: I would say that I have signed this, counsel.

MR. GLASSMAN: With agreement of counsel, we will reorder the pages.

MR. WISE: It is getting late in the afternoon.

BY MR. GLASSMAN:

Q Mr. LaBelle, I would like you to review (Item-2) Item No. 2, on Page-2 of this document. Will you tell us, please, sir, whether there was any follow-up with regard to this item by B&W?

A I have no recollection of the subsequent history of follow-up on Item 2.

Q I would like you to refer to Item-3 on

Page-2 of GPU Exhibit-291 marked for identification which refers to a development of a means to benchmark codes for natural circulation prediction.

Do you know if this was ever done?

A I think that this item as well as the other items have to be put into the context that they are summations of concerns which the Nuclear Regulatory Commission (NRC) had and were not necessarily concerns which Babcock & Wilcox (B+W) Company had.

Q Mr. LaBelle, did B & W ever benchmark codes for natural circulation?

A I could not say that there were not some benchmark calculations done for certain codes.

Q Do you recall any such benchmark calculations?

A Yes, sir.

Q What were those?

A I just cannot recall the context in which they were conducted or the particular codes involved.

Q Has B & W ever investigated by its computer codes whether natural circulation could be achieved under two phase (2-phase) conditions?

THE WITNESS: Could you repeat the question, please?

(The pending question was read by the reporter.)

A There have been studies conducted by B&W of two phase (2-phase) circulation.

Q When were such studies conducted?

A I do not recall specific times that studies of this nature were conducted.

Q Were studies of this nature conducted before the TMI-2 accident of March 28th, 1979 (790328)?

A There could have been studies conducted within the loss of coolant accident (LOCA) analysis.

Q Are you talking about the ECCS Unit?

A Yes, sir.

Q Are you aware of any studies of this nature prior to the TMI-2 accident?

A The loss of coolant accident will result in two phase conditions as a part of the transient that is examined, but I could not comment as to the nature of the studies conducted.

Q In other words, you do not know whether those studies included consideration of whether natural circulation could be achieved under two phase conditions; is that correct?

A Since the analyses -- my awareness of the

analyses is that adequate core cooling could be provided. There was a form of ciulation that was provided for two phase (2-phase) conditions.

The reason I say this is that it is necessary to understand the precise meaning that one might provide to natural circulation in that it is possible to have adequate core cooling and circulation without natural -- what is normally termed natural circulation.

Q I would like you to refer to Page 3 of GPU Exhibit 291 for identification. At the very bottom of the page there is a statement after the word "basis" that:

"NRC has shown concern that B&W does not have benchmarks supporting many of its code options and capability."

Is it true that as of April 26th, 1979 (790426) B & W did not have benchmarks supporting many of its code options and capabilities?

A I think that one has to put into perspective the benchmarks that had been performed with the availability of operating plant information upon which to base those benchmarks.

It is very rare that one finds a complete set of

information pertaining to an operational transient upon which one could benchmark all of the options and capabilities of computer models.

Also, the computer models that were in use by the Safety Analysis Unit with which I am most familiar were designed to provide conservative results and in many cases conservative input was used to formulate the conservative techniques that were used within the models.

Q Is it true, then, that even in some situations where B&W had information on the characteristics of actual transients that they were not benchmarked?

A We did not benchmark every transient that occurred in that there are many transients that occur during a given year. We did have some benchmarks of our -- of the codes that were used within the Safety Analysis Unit.

Q The next sentence of this paragraph reads:

"Thus, we are highly vulnerable to issues such as those raised in this meeting about analytical credibility when phenomena occuring at our plants have not been previously predicted

by our codes."

What phenomena did you have in mind which had not been previously predicted by your codes?

A I think you have to read the last sentence of this memo which points out that the codes were -- that were being used in the Safety Analysis Unit were designed for conservative bounding analysis and thus it was possible that they would not reproduce exactly or provide best estimate results which could be compared directly with plant operating transients.

Q Did any phenomena which occurred at Davis-Besse in 1977 (770000) involve a sequence of events (SOE) not previously predicted by B & W's codes?

A I am not sure I understand the specific events you are referring to.

Q I am referring to the events of April 24th, 1977 (770424) involving a loss of coolant accident (LOCA).

MR. WISE: And what is the question?

BY MR. GLASSMAN:

Q Had the phenomena which occurred on September 24th, 1977 (770924) at Davis-Besse been previously predicted by B & W's codes?

A I am not sure of the specific event that you are referring to by date, so I would be unable to

provide a response to what calculations may have been performed concerning that event.

Q Are you aware of a transient involving a stuck-open PORV at Davis-Besse in 1977?

A I am aware of a PORV transient. I have some uncertainty as to the date.

Q Was that transient predicted by B & W's codes?

MR. WISE: Well --

A What do you mean by was it predicted by B & W's codes and when was it predicted by B & W's codes?

Q Was it at any time predicted by B & W codes in the sense those words are used in GPU Exhibit-291 marked for identification? I am referring to the last page of the exhibit.

A The event itself that you refer to of a PORV not operating properly would not have been an event that Safety Analysis would have examined in the course of its providing information to the accident analysis of a Safety Analysis Report.

It very well could be included in a spectrum of loss of coolant accident analyses performed by the ECCS Unit.

Q Are you aware of whether it was included

in any analysis done by the ECCS Units?

A No, sir, I am not.

MR. GLASSMAN: Why don't we resume tomorrow morning.

MR. WISE: Fine.

(Time noted: 5:24 o'clock p.m.)

Subscribed and sworn to
before me this-------day
of--------------1981.

CERTIFICATE

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

I, CHARLES SHAPIRO, a Notary Public of the State of New York, do hereby certify that the continued deposition of DANNY W. LaBELLE was taken before me on June 3rd, 1981 consisting of pages 129 through 230;

I further certify that the witness had been previously sworn 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 said parties 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 my hand this 19TH day of JUNE, 1981

Charles Shapiro

CHARLES SHAPIRO, C.

I N D E X

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E X H I B I T S

GPU Exhibits For Identification

287	Document headed "Potential Lessons to be Learned from TMI-2," consisting of two pages (2-pages)	165
288 (790430)	Document dated April 30th, 1979 to Mr. Roy from Mr. LaBelle, consisting of four pages (4-pages)	217
289 (790407)	Document dated 4/7/79 to John Biller from D. W. LaBelle	237
290 (790412)	Memorandum dated April 12, 1979 to Distribution from C. S. Banwarth	239
291 (790426)	Memorandum dated April 28 to E. A. Womach from D. W. Labelle	241
