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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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GENERAL PUBLIC UTILITIES CORPORATION, :
JERSEY CENTRAL POWER & LIGHT COMPANY, :
METROPOLITAN EDISON COMPANY and :
PENNSYLVANIA ELECTRIC COMPANY, :

Plaintiffs, :

-against-

: 80 CIV. 1683
(R.O.)

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

Defendants. :

-----x

Deposition of General Public Utilities

Nuclear Corporation, by LOUIS C. LANESE, taken
by Defendants, pursuant to Notice, at the
offices of Davis Polk & Wardwell, Esqs., One
Chase Manhattan Plaza, New York, New York, on
Wednesday, March 24, 1982 at 10:15 o'clock in
the forenoon, before Joseph R. Danyo, Stenotype
Reporter and a Notary Public within and for
the State of New York.



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BY: RODMAN W. BENEDICT, ESQ.,
of Counsel

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13

Also Present:

14

NINA RUFFINI

15

JULIE JOHNSON

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IT IS HEREBY STIPULATED AND AGREED by and
among the attorneys for the respective parties
hereto that the sealing, filing and certification
of the within deposition be, and the same hereby
are, waived; that the transcript may be signed
before any Notary Public with the same force
and effect as if signed before the Court.

IT IS FURTHER STIPULATED AND AGREED that all objections, except as to the form of the question, are reserved to the time of trial.

* * *

LOUIS C. LANESE, having been first duly sworn by the Notary Public (Joseph R. Danyol), was examined and testified as follows:

EXAMINATION BY MR. BENEDICT:

Q Could you state your name and address for the record?

A Louis C. Lanese. My address is 8-149 Ashland Court, Stanhope, New Jersey.

Q What is your business address?

A 100 Interpace Parkway, Parsippany, New Jersey.

Q By whom are you currently employed?

A General Public Utilities Nuclear Corporation.

Q Is that a subsidiary of General Public Utilities Corporation?

A Yes, it is.

MR. BENEDICT: I would like to have marked

2

as B&W Exhibit 603, a copy of a resume of

3

Louis C. Lanese, which is taken from his restart

4

testimony in the fall of 1980.

5

(Copy of resume of Louis C. Lanese was

6

marked B&W Exhibit 603 for identification, as

7

of this date.)

8

Q Can you identify this as a resume which you

9

prepared or had prepared for you for submittal to the

10

Atomic Safety and Licensing Board during the TMI-1

11

restart hearings?

12

A Yes, it is.

13

Q Would you review it and tell me if there is

14

anything that is inaccurate on it or that needs to be

15

updated?

16

A Under "Education," you can strike

17

"Completing thesis."

18

Q Have you completed your thesis?

19

A No, I haven't.

20

Q You have abandoned, at least for the time

21

being, your thesis?

22

A That's correct.

23

Q You have a master's in engineering, and I

24

take it the thesis was in preparation for a doctoral

25

degree?

1

2

A No, that is not correct

3

Q What was the thesis?

4

A In preparation for an engineering degree.

5

An engineer's degree.

6

Q Is that an academic degree or a professional

7

degree?

8

A Academic degree.

9

Q That was at the Polytechnic Institute of

10

New York?

11

A Yes.

12

Q Are you still taking classes at Polytechnic?

13

A No.

14

Q When did you stop taking classes?

15

A My last semester was the fall of 1978.

16

Q Is your current job assignment indicated

17

on this resume?

18

A I do work for the Safety Analysis and

19

Plant Control Section of GPU Nuclear Corporation. The

20

group has since changed names.

21

Q What was the name of the group?

22

A It was Safety Analysis and Plant Control.

23

Q For GPU Service?

24

A For GPU Service. It was changed to

25

Safety Analysis and Plant Control of GPU Service, and

1

2

it is now a section in GPU Nuclear Corporation.

3

Q The resume indicates that you were with

4

GPU Service Corporation from 1979 to present. What is

5

the time that you switched from the Service Corporation

6

to the Nuclear Corporation?

7

A That is not correct.

8

Q What is it that isn't correct?

9

A I have been with GPU Service Corporation

10

since January 1974.

11

Q I think that is indicated at the bottom of

12

the first page. I was referring rather to the issue,

13

not how far back you were with the Service Corporation,

14

but when did you change from the Service Corporation to

15

the Nuclear Corporation.

16

A I can't recall.

17

Q Was it principally a change in the name of

18

the organization for which you worked?

19

A Yes, it was.

20

Q Did you change job responsibilities at the

21

time you moved from the Service Corporation to the

22

Nuclear Corporation?

23

A No, I didn't.

24

Q Does the Service Corporation still exist at

25

GPU?

2 A Yes, it does.

3 Q Is your current title Senior Control
4 and Safety Analysis Engineer?

5 A No, it isn't.

6 Q What is your current title?

7 A My current title is Safety Analysis-Plant
8 Control Engineer Senior 2.

9 Q Is that a demotion, a promotion or
10 essentially the same position?

11 A I have since been promoted since this
12 resume was written.

13 Q Who is your present supervisor?

14 A Nicholas Trikouros.

15 Q Is Gary Broughton a supervisor of yours?

16 A He is Mr. Trikouros' boss, and he is my
17 supervisor also.

18 Q For how long have you worked at a GPU
19 company?

20 A Since January 1974.

21 Q When were you first one of Mr. Broughton's
22 juniors? When was he first one of your supervisors?

23 A I don't recall.

24 Q Could you describe your responsibilities
25 with your current job assignment?

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A My present responsibilities are as lead systems engineer for TMI-1. That encompasses reviewing systems engineering responsibilities for TMI-1 designs, for implementing safety analyses in which major code modifications are not required, and reviewing certain plant emergency procedures for technical content and accuracy.

Q What do you mean -- what is your task with respect to safety analyses? I am not sure I understand that.

A There is a division of responsibility within our group between TMI and Oyster Creek systems, and also between code applications and code modifications and developments.

Q And your role with respect to safety analyses is to perform analyses which do not require code modification?

A That's correct.

Q Is a safety analysis a study done for purposes of submission to the NRC?

A No, it is not.

Q What is the purpose of the safety analysis?

A In general, it is not. We do safety analyses for several reasons at this point. In support

1
2 of system designs, for design verification, in order
3 to better understand analyses that are being performed
4 for us, principally by B&W, and to evaluate procedures
5 and determine the efficacy of the procedure.

6 Q By --

7 MR. GLASSMAN: The witness used the word
8 now, but I note the questions have not been
9 clearly delineated between current time or some
10 other time? Are the questions directed to the
11 present?

12 MR. BENEDICT: Yes, the question is: What
13 are his job responsibilities today.

14 Q You said that one of the issues surrounding
15 safety analyses had to do with determining the
16 efficacy of procedures? Is that what you said, or the
17 propriety of procedures? You mentioned procedures.
18 When you said procedures, you were talking about
19 procedures for the operation of the plant; is that
20 correct?

21 A I didn't use the word "propriety" or the
22 other word.

23 Q You did use "efficacy" but perhaps not
24 with respect to procedures?

25 A We are most interested in the emergency_

1
2 procedures for which a system engineer is responsible
3 for reviewing them, reviewing the content and at times
4 determining if we can improve the content of the
5 procedure.

6 Q What emergency procedures is System
7 Engineering responsible for?

8 A I can't give a comprehensive list.

9 Q It is not all of the emergency procedures
10 for Unit 1?

11 A No, it is not.

12 Q Do you know whether it includes the
13 procedures for loss of reactor coolant?

14 A If by that, you mean loss-of-coolant
15 accident, yes.

16 Q Does it include the emergency procedure
17 relating to loss of pressurizer control?

18 A I don't recall.

19 Q Pressurizer failure, pressurizer relief
20 valve failures?

21 A I don't recall.

22 Q The Systems Engineering Group is the group
23 to which you are assigned, I take it?

24 A That's correct.

25 Q How long has Systems Engineering had

1

2

responsibility for emergency procedures for Unit 1?

3

A Since October 1981.

4

Q Is that the time that GPU Nuclear was

5

established?

6

A I believe so.

7

A Was there any equivalent organization in

8

GPU Service to the Systems Engineering Group prior to

9

the creation of GPU Nuclear?

10

MR. GLASSMAN: I am not sure what you mean

11

by "equivalent," but he can answer if he

12

understands it.

13

A I don't know -- are you asking that question

14

with respect to responsibility for emergency procedures?

15

Q Why don't we have that.

16

A No, there was no equivalent organization.

17

Q In terms of your involvement and your

18

employment at GPU, what other involvement have you had

19

with respect to review or drafting of operating

20

abnormal or emergency procedures?

21

A In what time frame?

22

Q From the time you arrived at GPU in 1974

23

for either of the units on Three Mile Island.

24

A Sometime during 1980, I began to see

25

procedures from TMI-1 in preparation for restart of the

unit.

3 Q When you say, began seeing procedures,
4 do you mean you were reviewing them in order to
5 familiarize yourself with them or were you reviewing
6 them for some other purpose?

7 A Again, this was for some selected
8 emergency procedures, but I was reviewing them and
9 providing comments to the plant staff.

10 Q Comments to the plant staff with respect
11 to the clarity? With respect to the accuracy? What
12 form -- what were the areas upon which you commented?

13 A With respect to operator actions and which
14 actions might be revised or added or deleted from the
15 procedure.

16 Q Did you work with anybody on this project?

17 A It wasn't a project.

18 Q This task. Is that an acceptable noun?

19 A It was an informal review, and the person
20 who asked me to perform that review was Gary Broughton.

21 Q Aside from the instance you just mentioned,
22 can you recall any other involvement at any time during
23 your employment at GPU with operating abnormal emergency
24 procedures for either of the TMI units?

25 A There was never any other time on Unit 1

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that I had provided comments to the plant staff or review procedures. On Unit 2 there were two procedures that I looked at in 1978 for Mr. Seelinger.

Q Could you tell me what procedures those were?

A There was a LOCA procedure and a steam line break procedure.

Q Do you recall which LOCA procedure it was? It was for Unit 2?

A It was for Unit 2. No, I don't remember either the title or the identification number.

Q Do you know whether it was a LOCA procedure which encompassed LOCA's which would qualify as small break LOCA's?

A It was a procedure that looked at LOCA's that were small enough to be handled by the normal makeup system and LOCA's that required actuation of high-pressure and/or low-pressure injection.

Q Is that the full spectrum of LOCA's, as far as you know?

A Yes, it is.

Q What did Mr. Seelinger ask you to do -- did he give you these two specific procedures?

A They were mailed to me.

1

2

Q What did he ask you to do with them?

3

4

A He asked me to review them to determine if we had properly incorporated any FSAR analyses that had been performed.

5

6

7

Q When you say -- to whom are you referring when you say "we" in that answer?

8

A We, meaning GPU and Met Ed.

9

10

11

12

Q So you were not referring to you personally or to your group personally; you were referring to whoever it was who drafted the procedure and got it to the condition it was in when it arrived on your desk?

13

14

15

A That's right. At that time we had no responsibility and no involvement in drafting procedures.

16

Q Your section had none?

17

A GPU Service Corporation.

18

Q GPU Service Corporation in its entirety?

19

A That's right.

20

21

Q Had you worked with Mr. Seelinger before this time?

22

23

A I had conversations with him previous to this time, yes.

24

25

Q Did any of those conversations relate to operating or other procedures?

1

2

A No.

3

4

Q What did you do with respect to these two procedures?

5

6

7

8

A I reviewed them, marked up some comments on them. I remember that Gary Broughton reviewed them and commented on them, and I don't remember the resolution of the comments with Mr. Seelinger.

9

10

Q Did you discuss with Mr. Broughton your comments?

11

A Yes.

12

13

Q Did he review the copies of the procedures that had your comments on them as you recall?

14

A Yes.

15

16

Q You do not recall what became of your comments after you passed them along to Mr. Seelinger?

17

18

A I don't remember if there were comments that I felt required passing along to Mr. Seelinger.

19

20

Q So at this point you can't recall whether you made any comments on the procedures which you then passed to Mr. Seelinger or to someone else at Met Ed?

21

22

23

24

A No. I do not remember making any substantial comments, however, or at that time believing that there were any substantial comments.

25

Q Just so the record is clear, are you saying

2 at this stage you can't recall one way or the other
3 whether you had substantial comments, or do you in fact
4 recall that you did not have substantial comments?

5 A I remember that the comments weren't
6 substantial in the sense that they required documentation
7 and resolution.

8 Q Do you know what time during 1978 this
9 occurred?

10 A April-May time frame of '78.

11 Q Did Mr. Seelinger give you any indication
12 of his motivations for sending these two specific
13 procedures along to you?

14 A Only that he was interested in assuring
15 that the analyses that we had performed in the FSAR
16 were being reflected in the procedures.

17 Q I take it these were procedures currently
18 in force, the ones you were provided with?

19 A Yes.

20 Q They were the current draft or revision,
21 whatever, of those two procedures?

22 A Yes, they were.

23 Q Did you follow up on this issue to determine
24 whether any changes had been made to these procedures?

25 MR. GLASSMAN: What issue?

1

2

MR. BENEDICT: The issue only of reviewing these procedures.

3

4

Q Do you know whether any changes were made to these procedures subsequent to your review?

5

6

MR. GLASSMAN: Are you talking about changes made as a result of Mr. Lanese's comments, if any?

7

8

9

MR. BENEDICT: More broadly.

10

Q Do you know whether any changes were made, following your review of these procedures, to them at any time up to the day of the accident in Three Mile Island which was March 28, 1979?

11

12

13

14

A No.

15

Q Do you recall whether or not you

16

corresponded with Mr. Seelinger? Wrote him a letter with respect to your comments or your lack of comments?

17

18

A I never documented any comments on the procedures.

19

Q Do you still have the copies of the

20

procedures that Mr. Seelinger sent you that you

21

commented on?

22

A Yes, I do.

23

Q Are they in your files at Parsippany?

24

A Yes, they are.

25

MR. BENEDICT: I do not recall seeing

1
2 them. I would appreciate them, if they have
3 comments on them, being produced.

4 MR. GLASSMAN: May I speak with the witness
5 for a moment?

6 MR. BENEDICT: Sure.

7 (Discussion off the record.)

8 MR. GLASSMAN: We believe -- I believe
9 after consulting with the witness that the
10 documents to which he is referring have been
11 produced to you.

12 MR. BENEDICT: I just talked to Nina
13 Ruffini. She says we did get them. We did get
14 two boxes of documents or half boxes of documents
15 from you, one last week and one two days ago,
16 and I will admit I haven't had an opportunity to
17 look at every page, so we can come back to this.

18 MR. GLASSMAN: I gather if your assistant
19 here has a recollection of it, then you will be
20 able to review that, and if you think it is
21 sufficiently interesting to pose any questions
22 to Mr. Lanese, we will be glad to have Mr. Lanese
23 answer any questions.

24 MR. BENEDICT: That seems fair to me.

25 Q Other than this instance, the instance with

1
2 Mr. Seelinger in 1978 and the time in 1980 with the
3 Unit 1 procedures, can you recall any other involvement
4 you had with reviewing or drafting or commenting upon
5 Three Mile Island procedures?

6 A In the course of preparing a response to
7 an NRC question, I read the heat-up and cool-down
8 procedures for TMI-1.

9 Q Do you recall the time that you did this?

10 A 1977. Possibly late 1976.

11 Q Has there ever come a time in the course
12 of your employment that you made a general review of
13 procedures, Three Mile Island procedures, in order to
14 familiarize yourself with them?

15 A TMI-2 procedures?

16 Q Either Unit 1 or Unit 2.

17 A The answer for Unit 2 is never. The answer
18 for Unit 1 is that we're in the process of -- we're
19 continuing to review emergency procedures at TMI-1,
20 those that are our responsibility and will be expected
21 to indicate our concurrence with the existing procedures
22 to GPU management prior to restart of the unit.

23 Q When you say "our responsibility," who is
24 "our"?

25 MR. GLASSMAN: I am not sure those were

1
2 the words that were used by the witness. I think
3 the witness talked about our concurrence, some-
4 thing to that effect.

5 MR. BENEDICT: I agree he did say that,
6 too, but at an earlier point, he said "those
7 procedures which are our responsibility."

8 A Systems Engineering of GPU Nuclear.

9 Q Who allocated to this Systems Engineering
10 Group the procedures which you are responsible for now?

11 A I don't know.

12 Q You testified earlier that this is not --
13 you know that the procedures for which you are
14 responsible do not represent all of the emergency
15 procedures for Unit 1. Do you know who else at GPU
16 or GPU Company is responsible for the others, if anyone?

17 A Someone else, other people are. I don't
18 know who they are.

19 Q Having finished for the time being
20 discussing procedures, what has been your involvement
21 while working for GPU with technical specifications?

22 MR. GLASSMAN: What time frame?

23 MR. BENEDICT: Anytime from '74 to today.

24 A While I was the safety and licensing engineer
25 for TMI-2, I had some involvement in Tech Spec

1
2 development, although the majority of the responsibility
3 rested with Metropolitan Edison.

4 On occasion, since I have been in Safety
5 Analysis and Plant Control since 1978, I have reviewed
6 technical specifications as a member of Safety Analysis
7 and Plant Control, or commented on them. As a member
8 of the Generation Review Committee, I also reviewed
9 tech specs on Unit 1 and Unit 2 from time to time.

10 MR. GLASSMAN: I would like to take a
11 one-minute recess.

12 (Discussion off the record between the
13 witness and his counsel.)

14 MR. BENEDICT: I was talking to Ms. Ruffini
15 about the documents that I first thought we
16 didn't have, and there is a problem with them.
17 The problem is that great portions of the document
18 have been highlighted, and when they were Xeroxed,
19 they came out black, so we can't tell what was
20 highlighted. I recall during Broughton's
21 deposition you did bring in original files in
22 order that we could read into the record the
23 portions that were highlighted. If you can do
24 that tomorrow, we can cover that then.

25 MR. GLASSMAN: We're talking now about

particular procedures?

MR. BENEDICT: It was the two procedures that were referred to, the LOCA procedure and the steam line break procedures. We will give you the document number.

MR. GLASSMAN: That would be helpful. If you give us the document number, we will make our best effort to have it here as soon as possible. Certainly before the end of the questioning of Mr. Lanese.

MR. BENEDICT: Could you read back the last question and answer?

(Record read.)

BY MR. BENEDICT:

A Could you describe for me the job responsibilities of the safety and licensing engineer for TMI-2 during the time that you held that position?

MR. GLASSMAN: By "responsibility," you are talking about them in the functional sense, not in the legal sense?

MR. BENEDICT: Yes.

Q What did you do on a day-to-day basis?
What was your job?

A My job function was to deal with the

1
2 Nuclear Regulatory Commission, become familiar with the
3 questions that they had regarding the TMI-2 plant,
4 resolve those questions in order to receive a favorable
5 safety evaluation report from the staff and ultimately
6 receive an operating license for the plant.

7 In doing that, I was required to
8 coordinate responses that were provided from B&W, Burns
9 & Roe, the architect-engineer, from time to time other
10 consulting firms, review the information, comment on
11 it, resolve internal questions about the responses,
12 and present and provide those responses to the NRC
13 staff.

14 Q Did you work with a specific section of the
15 Met Ed organization in order to accomplish this function?

16 A My normal working relationship was with the
17 Met Ed licensing group.

18 Q Who was the head of that group at the time
19 you were in this position? Do you recall?

20 A No, I do not.

21 Q Do you recall who it was that you worked
22 with most regularly?

23 A Yes, Courtney Smyth.

24 Q How did technical specifications come up
25 or come to your attention in the course of performing

1

2

the tasks that you just described?

3

4

A Most of the technical specifications were provided by B&W, and then it was my function to coordinate in-house comments and provide them to Met Ed.

5

6

7

Q Between your unit and the licensing unit at Metropolitan Edison, who had the ultimate responsibility for dealing with the NRC?

8

9

10

MR. GLASSMAN: You are saying if there was one individual?

11

12

13

MR. BENEDICT: Not individual, as between those two groups, on the issues of the safety evaluation report.

14

15

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17

18

A There was a split responsibility. Anything that would affect design and construction of the plant was the responsibility of GPU Service Corporation. Issues that affected operations were the responsibility of the operating utility, namely, Met Ed.

19

20

Q Under -- on which side of that dichotomy did technical specifications fall or were they split?

21

22

23

A Met Ed had the functional responsibilities f : providing the tech specs to NRC or proposing the tech specs to the NRC.

24

25

Q If it can be done, between the two organizations, the two licensing organizations, one

1
2 being at Met Ed and the other being at GPU Service, who
3 had ultimate responsibility for the licensing process
4 overall for Unit 2?

5 A That resided within GPU.

6 Q Was it within the Licensing Department of
7 GPU Service or was there another group ultimately
8 responsible?

9 A Ultimately the project manager made
10 decisions about the licensing of the unit with NRC.

11 Q For what GPU subsidiary did the project
12 manager work?

13 A GPU Service.

14 Q Do you remember what his name was up until
15 the time that the operating license was issued on
16 Unit 2?

17 A Yes.

18 Q What was his name?

19 A Richard Heward.

20 Q He is the person you were talking about as
21 having the responsibility as you recall?

22 A Yes.

23 Q Looking at your resume which is B&W 603,
24 at the bottom where we're talking about the -- I
25 take it firstly, that the '74 to '77 period job

1
2 description and the '77 to '78 period job description
3 indicate to me that you were promoted but did you stay
4 within the same area of responsibilities; is that
5 correct? You went from a safety and licensing engineer
6 to a lead nuclear licensing engineer? Is that the
7 same job with a promotion or was that a different job?

8 A It was an expansion of functional
9 responsibilities.

10 Q But it was within the same unit or group?

11 A Yes, it was.

12 Q It says under '74 to '77 that your
13 responsibilities included technical resolution of TMI-2
14 licensing open items. Among these open items I take
15 it were the issues that we have been discussing with
16 respect to technical specifications, is that right?

17 MR. GLASSMAN: In general terms?

18 MR. BENEDICT: In general, the issue of
19 how technical specifications would come to Mr.
20 Lanese's attention.

21 I will strike the question and start again.

22 Q What do you mean when you have written here,
23 "Responsibilities included technical resolution of TMI
24 licensing"?

25 A It did not include technical specifications.

1

2

Q What did this task include?

3

A It included coordination, review, comment,

4

negotiation with NRC staff on issues relating to plant

5

safety when they affected design. Essentially the

6

design of the plant since that was the GPU function.

7

Q Principally by design, you mean the hard-

8

ware components and their construction?

9

A Yes.

10

Q Would the computer and its software that

11

was used for Unit 2, would that have fallen under the

12

responsibility of GPU as design or would it have fallen

13

under the responsibility of Met Ed as operations?

14

A I don't know.

15

Q Were you involved with choice and the issue

16

of access and the program to the computer used in the

17

control room at TMI at any time?

18

A No. Could you specify what you mean by

19

"you"?

20

Q You personally?

21

A No, I wasn't.

22

Q Do you know of anybody within your licensing

23

unit or group that was involved with those issues?

24

A No, no one was.

25

Q Moving to the '77 to '78 time period, which

1
2 is the last full paragraph on your resume, it says
3 primary responsibility for TMI-2 licensing activities.
4 How is that, if that job is different from the one we
5 discussed for your earlier period, how is it different?

6 A There were no different responsibilities
7 with respect to Unit 2. Again, functional responsi-
8 bilities. My job function was different in that I
9 became involved in Forked River licensing in providing
10 guidance to the Forked River licensing engineer and
11 occasionally commenting on Oyster Creek issues as well,
12 and being involved in generic issues that affected TMI-1,
13 TMI-2, and Forked River.

14 Q Forked River has never been constructed;
15 is that correct?

16 A It was abandoned with less than one percent
17 construction complete, yes.

18 Q In the proposal, who was to manufacture the
19 reactor coolant system or the steam supply system?

20 A The nuclear steam supply system was provided
21 by Combustion Engineering.

22 Q When you say generic safety issues for the
23 units, the two units on TMI and the Forked River plant,
24 I take it you mean issues relating to pressurized water
25 reactors?

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A Issues that were applicable either to all three pressurized water reactors or issues that were applicable to all four of the reactors including Oyster Creek.

Q Who was your superior during this time period?

A For much of that period, the safety and licensing manager's job was unfilled, and my immediate superior was Mr. Jack Thorpe, who was the director of environmental affairs.

Q You obviously -- there is a great in your title during 1978. What occurred to cause that change?

A The previous safety and licensing manager was Tom Crimmins, and before he transferred over to Jersey Central Power & Light, he changed the functional organization of the group to make it, what he felt was more responsive to our needs. "Our" meaning GPU Safety and Licensing and the service corporations.

Q Was the Safety and Licensing Group divided?

A We tried to delineate more clearly between nuclear licensing activities and fossil fuel licensing activities.

Q How did your job change as a result of this

1
2 reorganization?

3 A I gave up responsibilities for procuring
4 non-nuclear-related permits. There were no changes in
5 responsibilities with respect to TMI-2. I began to
6 become somewhat more involved in TMI-1 on generic
7 issues, and the same was true for Forked River. I
8 became more involved in Forked River.

9 Q Do you recall when the construction permit
10 was issued for Unit 2 at Three Mile Island?

11 A Yes.

12 Q When was that?

13 A February 8, 1978.

14 Q The construction permit?

15 A I'm sorry. I believe it was July 1973.

16 Q I take it the February 8, 1978 date is the
17 date which the operating license for Unit 2 was issued?

18 A That's correct.

19 Q Did your responsibility, or did GPU
20 Service's responsibility to TMI Unit 2 change following
21 the issuance of the operating license?

22 A I didn't understand the question because I
23 realized that the construction permit was not issued in
24 1973.

25 Q When was -- when do you recall the

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construction permit being issued?

A I don't remember.

Q Not worrying at this point about the construction permit and moving on to the issue of the date of the operating license, did your responsibility in licensing or as you understood it, did GPU Service's responsibility with respect to TMI-2 change as a result of TMI-2 receiving its operating license?

A Yes, it did.

Q How did it change?

A After issuance of the operating license, functional work responsibility shifted to Met Ed licensing, and GPU safety and licensing functioned on an as-requested basis.

Q So if I understand --

A And also to continue to have responsibility for design and construction activities that were committed to in order to receive the operating license.

Q In other words, there were some issues that were still open at the time you received or the operating license was granted and the operating license was conditional upon their completion?

A No, that is not quite correct.

Q Let's just say there were issues that were

1
2 open prior to the issuance of the license which was
3 being handled by GPU and they continue to be handled
4 after the issuance? Is that more accurate?

5 A The issues were resolved within NRC staff.
6 What remained was the implementation of the resolution.

7 Q What was the effect of this change on your
8 work load? Did you shift your attention in a
9 significant manner to another subject?

10 A There was a gradual change in my work
11 activities. After the operating license was issued, I
12 was able to focus more on my chairmanship of the
13 Assymetric LOCA Load Subcommittee which had an impact
14 on Unit 1 and Unit 2 and also to concentrate on the
15 hardware modifications for Unit 2.

16 Q You mentioned the Assymetric LOCA Load
17 Technical Subcommittee, that committee membership is
18 listed under "Professional affiliations" on your
19 resume on the second page of Exhibit 603.

20 Are there any other professional affiliations
21 that you didn't list here that now would be appropriate?

22 A Yes, there are.

23 Q Could you list them for us?

24 A Since May of last year, I have been the
25 chairman of the B&W Owners Group Analysis Subcommittee.

1

2

Q Is there anything else?

3

A No.

4

Q You list no professional publications here.

5

Do you have any professional publications?

6

A No, I do not.

7

Q Can you tell me what hardware modifications

8

for Unit 2 you were working on during the period from

9

the issuance of the operating license through until the

10

accident 14 months later?

11

A I can't recall all of them.

12

Q List the ones you recall.

13

A There were modifications that were

14

committed to on the main feed water system,

15

modifications with respect to plant temperature

16

monitoring in the auxiliary building and control

17

buildings. That is ambient temperature monitoring.

18

Q Main feed and plant temperature in

19

auxiliary and control building. Any other?

20

A There were others. I can't recall them at

21

this time.

22

Q You have listed under your resume in the

23

second full paragraph on the bottom, "Developing

24

analyses in support of the TMI-2 feed water system

25

modification." Are you there referring to the

2 modifications to main feed water system you just
3 mentioned?

4 A Yes, that's correct.

5 Q Could you tell me what those modifications
6 or proposed modifications were or were to be?

7 A The addition of safety grade main feed
8 water block valves in the feed water piping of TMI-2.

9 Q What was the -- what would be the purpose
10 of these valves if installed?

11 MR. GLASSMAN: Are you asking --

12 MR. BENEDICT: His understanding at the
13 time.

14 A To mitigate the consequences of large steam
15 line breaks.

16 Q Were they in fact installed at Unit 2?

17 A No, they were not.

18 Q Did they exist at Unit 1 or equivalent
19 valves exist at Unit 1 at that time?

20 A No, they did not.

21 Q Are they -- are valves equivalent in
22 function going to be installed in Unit 1?

23 A No, they are not.

24 Q In the course of your review of the main
25 feed water system, did you have any opportunity to

1
2 review the demineralizing system for feed water at
3 Unit 2?

4 A No.

5 Q You had no responsibility with respect to
6 reviewing that?

7 A No.

8 Q Moving up to the top paragraph under
9 "Experience" which is '79 to the present, with the
10 modifications we talked about earlier, you indicate
11 that your responsibilities included "TMI-1 emergency
12 feed water design."

13 Could you tell me what that work entailed?

14 A We have committed to make the emergency
15 feed water system at TMI-1 fully safety grade. In the
16 process of revising the system, we also made
17 modifications to it to improve the operational
18 characteristics of the unit when emergency feed water
19 is operational.

20 Q Was any work in this area done prior to
21 the accident on March 23, 1979?

22 MR. GLASSMAN: Work by whom?

23 MR. BENEDICT: Any work he is aware of on
24 the design of the TMI-1 emergency feedwater or
25 modifications to the design.

1

2

A No.

3

4

5

6

Q Was there any work, to your knowledge, with respect to the design of the emergency feedwater or modifications to the design of the feedwater at Unit 1 prior to the accident at Three Mile Island?

7

A Not that I am aware of.

8

9

Q When do you first recall being involved in a review of the TMI-1 emergency feedwater system?

10

A In the summer of 1979.

11

12

13

14

Q Further down in that same first paragraph under "Experience," you say "Member of the TMI-1 and TMI-2 Safety Review Committees (GRC)." What is the GRC?

15

A GRC stands for Generation Review Committee.

16

17

Q That is a committee within General Public Utilities?

18

19

A Presently it is a committee within General Public Utilities, yes.

20

21

Q When did you first become a member of the GRC?

22

A Sometime in 1979.

23

24

Q Do you remember whether it was before or after the Three Mile Island accident?

25

A It was after the accident.

1
2 Q Did you replace someone? Did you fill
3 someone else's spot at that time?

4 A No.

5 Q Who asked you to be on the GRC?

6 A No one asked me to be on the GRC.

7 Q Who directed that you be on the GRC?

8 A I believe Mr. Wilson determined the
9 membership of the committee.

10 Q John Wilson, an attorney?

11 A No. Dick Wilson, vice president of
12 Technical Functions at GPU.

13 Q Who, other than you, were the members of
14 the GRC at the time you took your place?

15 A We were all appointed at the same time.
16 I don't remember the full membership at that time.
17 Mr. William F. Schmauss is the chairman of the GRC and
18 was then. Mr. Don Reppert, Ron Furia, also was in Tech
19 Functions in the Nuclear Fuel Analysis Group. There
20 were one or two members who were not employees of GPU.
21 I don't remember who they were.

22 Q Do you remember if one of them was a B&W
23 representative?

24 A I am not sure.

25 Q Was the Generation Review Committee a

1

2

committee formed for the first time after the Three
Mile Island accident?

3

4

A No, it wasn't.

5

Q Do you recall when, if you know, the

6

committee was first formed?

7

A No, I do not.

8

Q What do you understand the charter or

9

responsibilities of the Generation Review Committee to
be?

10

11

MR. GLASSMAN: At the time it was formed?

12

MR. BENEDICT: Let's ask a preliminary

13

question.

14

Q Are you still a member of the Generation

15

Review Committee?

16

A Yes, I am.

17

Q As you understood it, have the

18

responsibilities of the Generation Review Committee

19

changed from the time you first became a member until

20

today?

21

A I am not sure.

22

Q What is your current general understanding

23

as to the responsibility of the Generation Review

24

Committee?

25

A We're responsible for, by technical

1
2 specification, we're tasked with reviewing the
3 functioning of the Plant Operation Review Committee,
4 the PORC, of reviewing tech spec changes, of reviewing
5 licensee event reports generated by the unit, either
6 Unit 1 or Unit 2, and reviewing determinations by the
7 PORC of the reportability of events. We also review
8 NRC I & E bulletins and notices, both prior to their
9 being responded to and subsequent to their being
10 responded to; and the function of the committee is
11 report through the chairman to the vice president of
12 technical functions and make recommendations as to the
13 adequacy of the functioning of the PORC, and of the
14 plant staff in responding to these issues.

15 Q PORC stands for Plant Operating Review
16 Committee; is that correct?

17 A Yes.

18 Q Is there a separate committee for Unit 1
19 and a separate committee for Unit 2?

20 A Yes, there is.

21 Q I take it, then, you or the GRC reviews
22 work done by each of those committees?

23 A Presently we do, yes.

24 Q You said by technical specification, and
25 you set forth some of what you understand to be the

1
2 responsibilities of the GRC. Is it your understanding
3 that the GRC is mandated by the technical specifications
4 for Unit 1?

5 A Yes, it is.

6 Q Do you know the number of the technical
7 specification ?

8 A No, I do not.

9 Q You said that one of the responsibilities
10 of the GRC was to review licensee event reports from
11 either Unit 1 or Unit 2; is that right?

12 A That's correct.

13 Q Do you review licensee event reports for
14 other B&W reactors not owned by a GPU company?

15 A I have to clarify the first response. The
16 "you" is indefinite. The GRC chairman is responsible
17 ultimately for reviewing licensee event reports, so it
18 is possible that I may or may not see licensee event
19 reports.

20 In response to the second question, we do
21 not review licensee event reports from other units.
22 I do not always see them, and I am not sure as to whether
23 the chairman would or not.

24 Q You don't know whether the committee
25 reviews licensee event reports from any plant other

1

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than Three Mile Island Units 1 and 2?

3

4

A That's right. I don't recall if that is part of the functional responsibility of the GRC.

5

6

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9

Q Do you know whether there is any organization or group or person within GPU who is responsible for reviewing all licensee event reports? We will start with some person who is responsible for it today.

10

11

12

A My understanding is, the present responsibility would be within the Plant Analysis Section of Systems Engineering.

13

14

15

Q That's part of GPU Nuclear?

A Yes. Their function -- part of their function is to review licensee event reports.

16

17

18

Q Do you know who heads that group?

A Yes, Pat Walsh.

19

20

Q I occasionally get confused as a result of these long names of the groups. Have you ever worked for that group?

21

22

23

A No, I haven't.

Q What is the name of the group to which you are now assigned?

24

25

A Safety Analysis and Plant Control.

Q What is the next segment of GPU Nuclear up

1

2

from that?

3

4

A The next level of management would be Mr. Broughton, who is the systems analysis director.

5

6

Q Is there a group called the Systems Analysis Group or Unit or Section?

7

8

A It is not a group. It is -- Mr. Walsh reports to Mr. Broughton.

9

10

11

Q Does that mean that Mr. Walsh's group is a group that is on the same level as your group in the structure of GPU Nuclear?

12

13

A He is at the same level of management as Mr. Trikouros, yes.

14

15

Q And Mr. Trikouros is your boss?

16

17

18

Q Mr. Walsh's group, as you understand it, has the responsibility today for reviewing all licensee event reports, is that correct?

19

20

21

22

23

A I believe that is correct, yes. .

24

25

Q And you understand when I say "all," I am not limiting it to LER's generated within the GPU system, but I include the other nuclear plants within the United States?

A That is true.

Q Do you know whether that group receives the

1

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actual LER or whether they receive summaries and pick
and choose from there?

3

4

A No, I do not.

5

6

Q Do you know, was this function being done
within GPU, this same function as you described for Mr.
Walsh's group, being done within GPU prior to the
accident at Three Mile Island on March 28, 1979?

7

8

9

A There was no formal organization or structure
within GPU prior to the accident which reviewed
licensee event reports.

10

11

12

Q When you say within GPU, do you mean to
include all GPU subsidiaries or do you mean just to
include --

13

14

15

A Including all of the subsidiaries.

16

17

Q Is there today a formal licensed program
for doing that, for reviewing LER's?

18

A Embodied by Mr. Walsh's group, yes.

19

20

Q So there was a change since the time of the
accident with respect to the formality, at least, of the
review of LER's within GPU?

21

22

A Yes, at least the formality.

23

24

MR. GLASSMAN: Can we take a break for a
second?

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(Recess taken.)

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Q To the extent there was a systematic review of LER's at GPU prior to the accident on March 28, whether or not it was formalized, who was responsible to your knowledge for that review?

A The review of LER's would be determined by the project management so LER's would be routed to Engineering or Licensing or Fuel Analysis or Operations depending upon the perception of the event involved.

Q And the perception of the event involved would be the perception of someone in Project Management?

A Yes, I believe it was Project Management that made distribution.

Q Do you recall who, if you know, within Project Management had that responsibility prior to the accident?

A No.

Q Do you recall or do you know how that responsibility was implemented within the project management office? Do you recall what steps were taken to assure that relevant LER's were reviewed or were routed to people for review?

MR. GLASSMAN: You are talking about the general practice?

MR. BENEDICT: As he understands it prior

1

2

to the accident.

3

4

A I am not sure that LER's only went directly to Project Management.

5

6

Q Do you know who else they went directly to, or what other units or groups?

7

8

A I am not sure.

9

10

Q Do you know whether Project Management undertook a systematic review of LER's prior to the Three Mile Island accident?

11

12

13

14

15

16

A I do remember that there was an NRC question regarding review of operating experience in power plants and that we responded describing -- not a program -- but the manner in which we reviewed LER's and the reasons for our review being an adequate review of operating experience.

17

18

Q When was the NRC questioning GPU about this subject?

19

20

A Late 1975 or early 1976.

21

22

Q Did you have some responsibility with respect to responding to this inquiry?

23

24

A No, I didn't.

25

Q Did someone within the licensing group have responsibility with respect to it?

A Yes, Mr. Crimmins prepared the response.

2 Q Did you review the response at that time?

3 A I read the response.

4 Q Did it comport with your understanding of
5 what was in fact the practice at GPU at that time as
6 you recall?

7 A At that time, I was unable to evaluate
8 the response.

9 Q Did there come some time subsequent to the
10 but prior to the Three Mile Island accident that you
11 reviewed the procedure or practice within GPU for
12 reviewing plant operating experience?

13 A No.

14 Q Has there been any time since the accident
15 when you did that?

16 A No.

17 Q Other than licensee event reports, what
18 other sources do you know of, sources of information
19 about plant operating experience that are systematically
20 reviewed within GPU today?

21 MR. GLASSMAN: I will allow him to answer
22 the question, but I note we used a lot of
23 different words here: formality, informality,
24 systematic review, nonsystematic review. I am
25 not sure what the question is directly trying to

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ascertain. Perhaps you would want to follow up.

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A I am not sure of what Plant Analysis reviews besides LER's. I do know that they review note pad entries. They receive information from INPO. I have no other understanding of the documents that they review.

8

9

Q By "they," are you referring to Mr. Walsh's group?

10

A Yes.

11

Q What is a note pad entry?

12

13

14

15

A Note pad is a computerized data system in which participating utilities provide information to other utilities and to other participants such as EPRI, the NSS vendors.

16

Q This is a service one subscribes to?

17

A I don't know how it is administered.

18

Q What is INPO?

19

A I don't know what the acronym stands for.

20

21

22

Q You said they review INPO material or something along those lines. What form does this material take, if you know?

23

24

25

A I have seen questions from the organization and surveys in which we have had to respond based on an INPO review of licensee event reports or plant

1
2 experience.

3 Q Do you receive any periodicals or other
4 source of information, you personally, other sources
5 of information with respect to plant operating
6 experience?

7 A Only on occasion.

8 Q You do not regularly receive any sources
9 of information?

10 A No, I do not.

11 Q Do you know whether Met Ed has within its
12 organization a group today that reviews on a systematic
13 basis LER's or other descriptions of plant operating
14 experience?

15 A With respect to TMI operation, I don't
16 believe there is a Met Ed any more.

17 Q With respect to TMI operation, you don't
18 believe there is a Met Ed any more?

19 A That's right.

20 Q I take it you mean that operations for
21 TMI have been assigned to GPU Nuclear?

22 A That's correct.

23 Q Taking the time prior to the creation of
24 GPU Nuclear, do you know whether Met Ed had a group
25 or a method for systematically reviewing plant

operating experience?

A Certainly PORC would be responsible -- responsible is not the right word; PORC would have been tasked to review licensee event reports. I do not know the mechanism by which Met Ed Generation Engineering or Operations staff other than PORC reviewed licensee event reports.

Q When you say licensee event reports, are you limiting your response to LER's generated with respect to Units 1 and 2 on Three Mile Island?

A No.

Q All LER's, was your understanding?

A At least all LER's related to pressurized water reactors.

Q Do you know by what means or by what method the PORC or PORC's for the units at TMI accomplished the task of reviewing these LER's?

A No, I do not.

Q In the course of your work on the Generation Review Committee, have you had an opportunity to consider the methods used by the PORC's to review licensee event reports or other plant operating experience?

A I have had an opportunity to observe the methods.

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2

Q What did you observe about the methods?

3

A That every LER that came in was reviewed

4

by PORC.

5

Q Is PORC composed of more than one person?

6

A Yes, it is.

7

Q Would each of them be reviewed by all of

8

the members?

9

MR. GLASSMAN: You are talking about --

10

Q What you observed.

11

MR. GLASSMAN: You are not talking about

12

particular instances?

13

MR. BENEDICT: No.

14

Q In your understanding, or what you observed

15

as to their practice?

16

MR. GLASSMAN: Also I note it is unclear as

17

to what time frame these observations occurred in.

18

MR. BENEDICT: My only limitation was during

19

the time he had served on the Generation Review

20

Committee.

21

A I don't know how many people reviewed any

22

particular LER. In order for PORC to conclude anything

23

or to satisfy their function of having reviewed it,

24

the LER would have been put on a PORC agenda. There

25

would have been an opportunity for comment. Normally,

2 at least one person on PORC will review a piece of
3 material in detail and be prepared to present
4 observations, results or comments to the remaining
5 PORC members.

6 Q I am not sure I understand how an LER in
7 your understanding gets onto a PORC agenda.

8 A It is provided to the PORC chairman.

9 Q By?

10 A I don't know who provides it.

11 Q Go on with your answer. I will follow up.
12 It is provided to the chairman.

13 A He distributes the material and PORC
14 members review the material. At some future PORC
15 meeting, the LER will be on the agenda; discussion of
16 the LER is always on the agenda, and PORC would have
17 to conclude that there were no comments or that there
18 were comments and then proceed to the next agenda item.

19 Q Is it your understanding that all LER's
20 received at least with respect to pressurized water
21 reactors are included on the agenda, or is there a
22 culling process before their inclusion?

23 A My understanding is that -- I guess I don't
24 know.

25 Q I recognize that your involvement with the

2 Generation Review Committee starts after the Three
3 Mile Island accident. But are you aware of whether the
4 practice you just described was followed by the PORC
5 committees prior to the Three Mile Island accident?

6 A I can't say.

7 Q You don't know one way or the other?

8 A I don't know.

9 Q I take it PORC Committee minutes are
10 maintained?

11 A To the best of my knowledge, they are, yes.

12 Q Are Generation Review Committee minutes
13 made?

14 A My only experience has been since I have
15 been on GRC, and yes, they are maintained.

16 Q Have you at any time during your employment
17 at GPU, have you been on any other committees within
18 GPU?

19 A I was a GORB alternate for Mr. Clinton
20 Montgomery for some period of time.

21 Q GORB stands for?

22 A General Office Review Board.

23 Q During what period were you an alternate
24 for the GORB?

25 A 1978, possibly portions of 1979.

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Q Did being an alternate entail your attending meetings on a regular basis?

A No.

Q Did you review minutes on a regular basis?

A No.

Q Did you ever have an opportunity to attend a meeting as an alternate?

A I believe I attended one meeting.

Q What is the function of the GORB during, or what was the function of the GORB during the period you served as an alternate as you understand it?

A The GORB is another independent review group to make evaluations about conduct of the plant and its safe operation.

Q Was the membership of the GORB composed entirely of GPU or GPU Service employees?

A No, it wasn't.

Q Who constituted the membership or from what subsidiaries of GPU did they come?

A GORB included members from GPU, Met Ed, B&W, and at least one other outside consultant.

Q Does the GORB still exist?

A Yes, it does.

Q Is there only one as opposed to the PORC's

1

2

where there is one for each unit?

3

A I don't know.

4

Q What --

5

A I may have to clarify my comment about --

6

I'm sorry. PORC's. No, I don't know about the

7

constitution of the GORB and whether it is the same

8

membership for TMI-1 and TMI-2.

9

Q Was it your understanding that the GORB

10

performed a review function over the work of the PORC?

11

A It included a review of the PORC, yes.

12

Q What does ATOG stand for?

13

A Abnormal transient operating guidelines.

14

Q What are the abnormal transient operating

15

guidelines?

16

A They are a consolidation of various

17

emergency procedures into one post-trip procedure

18

that allows the operator to systematically treat plant

19

symptoms that are indicative of various off-normal

20

conditions.

21

Q Have you been involved with the creation

22

or preparation of the ATOG?

23

A I have been involved in the ATOG program

24

in various degrees of activities since early 1980.

25

Q Can you describe what your activities have

1

2

been with respect to this program?

3

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5

A My first activity was to review the event trees that were the basis for developing the guidelines.

6

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Q Had you ever seen an event tree used for developing procedures prior to your experience with ATOG?

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A No.

Q ATOG, the guidelines created under the ATOG program are not intended to replace emergency procedures, are they?

MR. GLASSMAN: Intended by whom?

MR. BENEDICT: Intended by the people who are paying for the program.

A They are in some instances intended to replace the existing procedures. "Incorporate" may be a better word.

Q The guideline would incorporate the procedure?

A In some cases incorporate. In some cases, change. In some cases, eliminate existing procedures.

Q What else did you do aside from reviewing the event trees that you recall?

A Since the fall of last year, I have been

involved with a committee within GPU to implement ATOG at TMI-1.

Q What has been your responsibilities for that committee?

A My responsibilities are to provide any technical assistance required by the plant site people in understanding the basis for the ATOG guidelines. In cases where I don't know answers, I am responsible for determining what the answers are. I have also functioned with the plant people in generating comments on the draft ATOG guidelines.

Q Is it your understanding that the ATOG approach to plant operation is new since the accident at Three Mile Island?

MR. GLASSMAN: I am not sure what the nature of this question is, whether you are asking for opinion. I don't know what is new, what is old. If you are going to ask him how it differs from what was done before, we are getting into a question that seems objectionable.

MR. BENEDICT: I will stand on the question. I may want to pursue it with more detail, but I think it is an answerable question.

(Record read.)

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A I don't know.

Q Had you ever in the course of reviewing any procedures prior to the accident at Three Mile Island -- we discussed several instances earlier -- did you ever review a procedure which had an event tree attached to it?

A No.

Q Are you aware of the use of event trees in the drafting of either the Unit 1 or Unit 2 procedures that existed prior to the accident at Three Mile Island?

A I don't know if they were used.

Q Prior to the accident at Three Mile Island, did you read WASH-1400?

A I have seen selected sections of WASH-1400.

Q Did you see any of those sections prior to the accident at Three Mile Island on March 28, 1979?

A Yes.

Q Did those portions which you saw prior to the accident include fault or event trees?

A I am not sure.

Q Do you recall anytime prior to the accident at Three Mile Island when you utilized in the course of your work for any purpose either fault or event trees?

A Yes.

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Q Could you describe that?

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A Prior to licensing of Unit 2, one of the remaining issues was fire hazards analysis, and we did use event trees in developing what are called safe shutdown logic diagrams. Those diagrams were actually developed and provided by EDS Nuclear for GPU.

8

Q To what use were these diagrams put?

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A They were used to identify equipment that could or would be needed to shut down the plant in the event of a fire, and identify areas in which a fire in a particular area might prevent the achievement of a safe shutdown condition.

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16

Q Do I understand you to say that GPU or people within GPU did not prepare these trees? They were prepared by an outside service?

17

A That is correct.

18

19

20

Q Were these event trees utilized in the preparation of procedures with respect to fire hazards or fire prevention?

21

22

A I don't recall. You may have asked two questions.

23

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25

Q My question was: Do you know whether the event trees that you described were used in the preparation of procedures with respect to responding to

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a fire?

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A No.

4

Q You don't know?

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A I don't know.

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(Document on GP Service Corporation
letterhead, subject: Major outstanding TMI-2
NRC Licensing Issues, the document dated
November 19, 1975, was marked B&W Exhibit 604
for identification, as of this date.)

11

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14

MR. BENEDICT: First we only need a copy
of, or to see the original of, one of the
procedures. And the document number for that
was Pages WO 29131 through '55.

15

16

MR. GLASSMAN: We will do our best to be
cooperative.

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Q I would like to show you B&W Exhibit 604
for identification. It is on GP Service Corporation
letterhead or memo head, and its subject is: Major
outstanding TMI-2 NRC licensing issues. The document
is dated November 19, 1975, and it is signed by L. C.
Lanese. I would like to ask you if you recognize
this document.

24

A Yes, I do.

25

Q Could you describe it for me?

2 A This was a summary of the licensing issues
3 requiring resolution with NRC staff, and we periodically
4 updated the list.

5 Q Was it on a regular basis, monthly, weekly,
6 quarterly?

7 A I don't remember the frequency.

8 Q Did you keep a file of these update memos?

9 A They were filed in the safety and licensing
10 central file and in my writer's file.

11 Q Were you responsible for preparing the
12 attachment to this covering memo, each page of which
13 is headed TMI-2 licensing issues?

14 A I prepared most of the attachments but not
15 all of them.

16 Q Was that a regular responsibility during
17 some period of your time in the licensing group?

18 MR. GLASSMAN: Was what a regular respon-
19 sibility?

20 MR. BENEDICT: The responsibility of
21 preparing attachments, whether all of them or
22 not, attachments describing or summarizing
23 TMI-2 licensing issues.

24 A It was an activity that I performed for
25 some period of time.

2 Q Can you tell me for how long a period of
3 time you assembled such summaries and routed them as
4 appears to have been done with B&W 604?

5 A I don't remember when I stopped preparing
6 these memos. I started sometime in the fall of 1975.

7 Q Did you stop before you became or after you
8 became lead nuclear engineer, lead nuclear licensing
9 engineer, which occurred sometime in 1977, according
10 to your resume?

11 A I am fairly certain that I did stop before
12 1977, yes.

13 Q You mentioned that you kept a writer's
14 file. Is that a file where all the material that you
15 prepare or that you sign you file away chronologically?

16 A I don't -- I didn't keep it personally.
17 It was kept in the safety and licensing files.

18 Q When you left Safety and Licensing, did
19 you take with you your writer's file?

20 A No, I believe it stayed behind.

21 Q Do you know whether your writer's file was
22 reviewed or examined in response to the document
23 request that was served in this litigation by the
24 defendants?

25 A No, I do not.

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Q Can you identify this document as being one that came from your writer's file, the actual specific document?

A Based on the cover page it appears it came from the writer's file.

Q That it does.

A That it has come from the writer's file, yes.

Q Do you keep a writer's file currently?

A No.

Q You don't keep a correspondence file?

A No.

Q I would like to --

A Perhaps you better explain what you mean by correspondence file.

Q Do you keep a file in which you retain copies of everything that you write or a certain portion of what you write on a chronological rather than a subject matter basis?

A No, I do not.

Q Do you currently keep files or are all your files under the control of the central safety analysis and plant control group?

A We are in the process of implementing our central filing system. Most of my files are in the

1

2

central file. Some of them are not.

3

Q What files do you keep personally?

4

A General files on material that I am

5

currently involved with.

6

Q Directing your attention in B&W 604 to

7

a page marked for this litigation as WO 26469, it is

8

a page headed TMI-2 licensing issues. Then it reads

9

Roman numeral VI, a program, underscored, to insure

10

operating experience from other plants is factored

11

into test program.

12

Do you recognize this page of Exhibit 604?

13

A Yes, I do.

14

Q Did you prepare this page?

15

A No, I didn't.

16

Q Did you review this page before you routed

17

it to the people shown on the memo covering it?

18

A I read it before I routed it, yes.

19

Q Do you know who prepared it?

20

A Yes, I do.

21

Q Who was that?

22

A Tom Crimmins who was my supervisor at the

23

time.

24

Q Did Mr. Crimmins discuss with you this open

25

licensing issue prior to the preparation of this?

2 A I don't remember.

3 Q Did he discuss it with you at any time prior
4 to its resolution?

5 A Not that I can recall.

6 Q At the time that you reviewed this and
7 routed it in 1975, what did you understand the NRC --
8 what had the NRC asked of GPU which was considered an
9 open licensing issue or an outstanding licensing issue?

10 A I don't believe I had an understanding of
11 the issue.

12 Q You don't recall having any other under-
13 standing other than what is contained in this?

14 A No. It predated my time as licensing
15 engineer.

16 Q The issue did?

17 A Yes.

18 Q Did you at any time have any responsibility
19 during your tour in the Licensing Department over this
20 issue relating to insuring that operating experience
21 from other plants is factored into the test program?

22 A No.

23 Q At the time you reviewed this for inclusion
24 in your memo, did you understand the final line to mean,
25 "Amendment 34 provided this response 10/31/75," is it

2 correct that your understanding at that time was that
3 the resolution of this issue was contained in an
4 amendment to the FSAR numbered 34 which was sent to
5 the NRC on October 31st, 1975?

6 A Yes, it was my understanding.

7 Q Do you recall whether the NRC accepted this
8 resolution?

9 A I believe they did.

10 Q Did you recall whether following at any
11 time after October 31st, 1975 this issue arose again
12 as an open item?

13 A Not to my recollection.

14 Q Do you know of any other documentation with
15 respect to this issue other than this summary and the
16 amendment to the FSAR No. 34 referred to herein?

17 A No, I do not.

18 Q Where would you look today if you wanted to
19 find files related to issues, licensing issues that
20 were open several years ago?

21 A That would depend on the subject.

22 Q This subject, the subject of factoring
23 in operating experience to the test program at TMI-2.

24 A The safety and licensing files and Tom
25 Crimmins' file which may have been incorporated in the

1
2 safety and licensing files on this topic.

3 Q Is it your understanding that Mr. Crimmins
4 handled this issue alone as opposed to receiving
5 assistance from another?

6 A He discussed the issue with other people.

7 Q Do you recall whether anyone worked with
8 him on the resolution of the issue?

9 A No, I do not.

10 Q The only thing you recall about the
11 timing of the NRC's, the expression of the NRC's
12 concern about factoring in operating experience is
13 that it predated your arrival in the Licensing
14 Department; is that correct?

15 A It was an NRC question, not necessarily a
16 concern, but it did predate my assignment to TMI-2
17 licensing.

18 Q When did that occur? Do you know?

19 A October 1975.

20 Q Was this your debut in dealing with
21 outstanding NRC Unit 2 licensing concerns or issues?

22 A I don't think so. I don't know. This is
23 approximately six weeks after I started working on
24 Unit 2.

25 Q Could you turn through the pages attached

1
2 to your memorandum and tell me which, if any, of the
3 licensing issues raised here you were responsible, or
4 at least partly responsible, for at that time?

5 MR. GLASSMAN: Responsible, you are
6 talking about --

7 MR. BENEDICT: He had a job assignemnt with
8 respect to it.

9 A I worked on issue No. I, Roman numeral I.
10 I worked on issue No. II. I worked on issue No. III. I
11 worked on issue No. IV. I am not clear about issue
12 No. V. I don't recall it. Mr. Crimmins worked on
13 issue No. VI. I worked on issue No. VII. I worked
14 on issue No. VIII.

15 Q Is issue No. VII the same or a part of the
16 same issue which you mentioned in your resume concerning
17 developing analyses in support of the TMI-2 feedwater
18 system modification?

19 A It was the same issue that led to the
20 requirement for modifying the TMI-2 feedwater system.

21 Q Briefly, how would you describe that issue,
22 if you can?

23 A The NRC staff eventually required us to have
24 fully safety grade seismically qualified mitigation
25 for a large steam line break accident, the result of

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which was that we committed to installing feedwater isolation valves.

Q And that is part of the same issue that is expressed here in issue No. VII, steam line break accident?

A Yes.

Q Up until the day of the Three Mile Island accident on March 28, 1979, did you have any involvement with contributing to or reviewing the contents of training given to prospective control room operators?

A No.

Q Did you ever prior to the accident review the contents of training of operators?

A No.

Q Have you since the accident provided input into training of operators?

A Yes, I have.

Q What specific instances do you recall of that.

A In January 1979 -- excuse me; 1980. I was involved with accelerated operator requalification

2 program and giving some lectures on FSAR transients
3 and accidents. In the summer of 1981, I gave a lecture
4 on the containment isolation modifications to the
5 operators and also a lecture on selected plant response
6 to plant transients that had been performed in the
7 restart analysis. Those analyses were specifically
8 geared to improving the operator's understanding of
9 plant response to situations in which emergency
10 feedwater initiated, given our revised emergency
11 feedwater design. Those are the only times I was
12 involved in operator training.

13 Q If I recall what you said, you said in
14 each case, these were lectures that you gave; is that
15 right?

16 A Yes.

17 Q Did you have any involvement or input into
18 materials other than lectures? Did you assist in
19 drafting lesson plans? Did you help prepare someone
20 to give a lecture? Did you prepare slides or overhead
21 projections for training that you didn't use in your
22 lectures? That is the sort of thing I am looking for.

23 A No, not that I can recall.

24 Q In the lecture you said you gave in January
25 of 1980, you said one of the subjects of the lecture was

1 "FSAR transients and accidents."

2 What are FSAR transients and accidents?

3 A Those are the design basis events that are
4 analyzed in the FSAR which are used to demonstrate the
5 adequacy of the plant design.

6 Q I am afraid I have yet another question on
7 this subject. What is a design basis accident, if they
8 can be described generally?

9 MR. GLASSMAN: You are looking for the
10 witness's current understanding?

11 MR. BENEDICT: We'll start with today.

12 A They are events which establish the design
13 requirements for the plant. A design basis accident
14 would be one for which the plant is required to meet
15 specified acceptance criteria.

16 Q When you say "required," do you mean
17 required by law?

18 A By regulation.

19 Q By the NRC?

20 A That's right.

21 Q And you say it has to meet certain criteria.
22 Where are those criteria found?

23 A The criteria would be specified in the
24 safety analysis report.
25

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Q In the FSAR?

3

A In the FSAR. In some cases in regulations.

4

There may even be circumstances where they are not

5

specified in the FSAR, but the staff's judgment is

6

that some criteria should be a design criteria for an

7

event, and it will be enforced upon the licensee.

8

(Off-the-record discussion ensued between

9

the witness and his counsel.)

10

Q Do these criteria that you described as

11

being found in regulations and in the FSAR and at times

12

specified by the NRC staff, do they take the form of

13

descriptions of specific accidents, or are they more

14

general criteria?

15

A A specific accident or transient would be

16

defined and then general acceptance criteria would be

17

applied for that specific accident and transient.

18

Q What is a general acceptance criterion, or

19

what are they?

20

A I would have to give an example or two.

21

Q I don't mind working from examples so long

22

as I am trying to get at a general view. But please

23

start.

24

A For a loss-of-coolant accident regulation

25

Part 100 would require that you stay within certain

2 dose limits. That would also be true for other
3 severe accidents. By "severe," I mean limiting design
4 basis. Accidents rather than transients. For certain
5 transients, a design limit would be, or might be, the
6 departure from nucleate boiling ratio stay greater than
7 1.3, whereas that is a criterion that would not be met
8 for a loss-of-coolant accident.

9 Q Are you familiar with the core cooling
10 criteria of 10 CFR, 50 point 46, and Appendix K?

11 A In general.

12 Q Are they criteria such as the ones you
13 have been discussing?

14 A Yes, they are.

15 Q So-called general acceptance criteria?
16 Is that the expression you used?

17 A They are acceptance criteria, yes.

18 Q So an FSAR transient and accident, is it a
19 fair summary to say by FSAR transients and accidents,
20 you meant design basis accidents as we have been
21 discussing?

22 A That is the way I would define a design basis
23 accident and the FSAR accidents and transients, yes.

24 Q You said one of your lectures in the summer,
25 I think, of 1981 was related to selected plant response

2 to plant transients, and you indicated that the
3 transients principally were ones involving the
4 actuation of emergency feedwater. Were these lectures
5 related specifically to TMI-1?

6 A Yes, they were.

7 Q Did you understand the purpose of the
8 lecture to be to relate to the operators the changes
9 in the system since the accident in March 1979?

10 MR. GLASSMAN: Objection to the form.

11 (Record read.)

12 A That was one purpose of the lecture.

13 Q What did you understand the other purposes
14 to be?

15 A To illustrate to the operator the plant
16 response to emergency feedwater, especially for
17 situations that he had not experienced in a plant,
18 since emergency feedwater has very rarely been
19 initiated at TMI-1.

20 Q Did you understand that that lecture was
21 being given to all of the operators who were licensed
22 for Unit 1?

23 A No.

24 Q Who did you understand were to have been
25 excluded?

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A I don't know that anyone was excluded. I did not give the lecture to every shift of operators.

Q Did you have some understanding as to how the information you conveyed in the lecture was to be provided to those absent?

A By videotape and by training personnel.

Q With whom did you work in preparation for these lectures, not just limited to the ones in the summer, but all the lectures you mentioned?

A During the lecture of 1980, January, I gave a portion of the lecture. Nick Trikouros gave a portion. Dr. John Luoma and Allan Easley, both of the Nuclear Fuels Group, gave other portions of the lectures. In the summer of 1981 lectures, I discussed and received comments from Gary Broughton as to the content of the lecture.

Q Those are the only instances of participation in training that you can recall?

A Yes. I think I said July '81. It must have been the summer of 1980, not the summer of 1981.

Q Other than those two events or instances, you can't recall either before or after the accident participating in the training of operators?

A No.

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Q Did you ever receive any training at Metropolitan Edison of a type that you understood to be like training received by the operators?

MR. GLASSMAN: Objection to the form.

A I have to correct the previous answer. It was the summer of 1981.

(Record read.)

A No, I never did.

Q Did you ever receive any training of that sort from any GPU entity?

A No.

Q Did you ever receive any training pertaining to the operation of a nuclear facility outside of GPU, whether before your employment or during?

A No.

Q Did you ever review for your own purposes as opposed to reviewing for the purposes of providing input any training material prepared by or for use by Metropolitan Edison?

A No.

Q Have you ever been to a nuclear, a commercial nuclear power plant simulator?

A Yes.

Q Which simulator?

1

2

A The B&W simulator.

3

Q Did you have an opportunity to observe its

4

function?

5

A Was that question before or since the

6

accident?

7

Q At any time.

8

A Before the accident, I had seen the B&W

9

simulator once for approximately ten minutes. Since

10

the accident, I have observed simulator function twice,

11

once in June of 1981 and once in February of this year.

12

Q Were either of those instances simulations

13

of the Three Mile Island accident of March '79?

14

A No, they weren't.

15

Q What did you observe on the simulator during

16

those two events?

17

A I was there with non-shift personnel to

18

observe the use of the ATOG procedures on the simulator.

19

Q How long were the sessions?

20

A Approximately four hours.

21

Q Each?

22

A Each.

23

Q Have you ever been in the control room of

24

a nuclear power plant?

25

A Yes.

2 Q Which power plant?

3 A Prior to commercial operation, I was inside
4 the control room of Unit 2 during construction. I
5 believe I had been inside the control room of Unit 1
6 for several minutes when I first came to GPU. I had
7 been in the Unit 1 control room several times in the
8 last year for periods of five or ten minutes. I was in
9 the TMI control room several weeks after the accident
10 for ten or 15 minutes.

11 Q By TMI, you mean TMI-2?

12 A TMI-2 control room. Prior to working at
13 GPU I spent approximately another ten minutes in the
14 control room of St. Lucie while it was being
15 constructed.

16 Q You said you were in the TMI-2 control room
17 prior to commercial operation. Do you know whether
18 testing had begun on the RCS at Unit 2 at the time you
19 were in the control room?

20 A Testing had not begun.

21 Q They were not in hot functional testing?

22 A They were not.

23 Q Was the control room complete or essentially
24 complete or was it too under construction?

25 A It was under construction.

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Q Aside from your visits to control rooms, have you ever studied the control room panel of either Unit 1 or Unit 2 at Three Mile Island? Study diagrams or photos or mock-ups?

A I had never studied photos, mock-ups or diagrams of the control room prior to the accident. I have reviewed the Unit 1 control room, control panel rearrangements on several occasions.

Q Focusing specifically on changes there being made to the panel, subsequent to the accident.

A Changes with respect to emergency feedwater and containment isolation.

Q Prior to the Three Mile Island accident in March 1979, what contact had you had with licensed operators at Unit 1 or 2?

A I never met one. I suppose that is not quite true in that I had met Gary Miller, Jim Seelinger and Jim Floyd, and they are licensed operators.

Q But in terms of anyone who served as a control room operator, shift foreman or shift supervisor, you don't recall meeting any?

A No.

Q Since the accident and for the moment leaving out meetings that you had with operators as a

1
2 result of your various and sundry assignments to
3 investigate the occurrences at Three Mile Island on
4 March 28, 1979, what contacts have you had with
5 licensed operators for Units 1 and 2?

6 A The two occasions in which I gave lectures.
7 You are referring to shift personnel? People who
8 actually operate?

9 Q Yes.

10 A During the two simulator trips, Larry
11 Knoll, who is a shift supervisor in Unit 1, was there.
12 I have been at one or possibly two meetings at which
13 Bill Zewe was present. That's all I can recall.

14 Q Focusing now on times when you were
15 executing your responsibilities or your job to look
16 into the Three Mile Island accident, what can you
17 recall about the extent of your contacts with operators
18 at that time or during those times?

19 MR. GLASSMAN: Objection. I don't know it
20 has been established that Mr. Lanese had any
21 responsibility or job to look into the Three Mile
22 Island accident. He certainly did perform some
23 functions following the accident. I don't know
24 what relationship they had to it. It has not
25 been established here. Lack of foundation.

1
2 MR. BENEDICT: I probably could ask the
3 question subject to connection, but I will
4 withdraw that question and start with the
5 foundation.

6 Q Following the Three Mile Island accident
7 on March 28, 1979, did your job responsibility include
8 interviewing operators with respect to certain
9 occurrences during and immediately after that accident?

10 MR. GLASSMAN: Objection on the grounds of
11 lack of clarity. I am not sure whether the
12 question is directed to whether Mr. Lanese had
13 that as a general responsibility or whether he
14 ever talked to operators, et cetera. Perhaps
15 the question could be clarified so you can get
16 whatever testimony Mr. Lanese has to offer.

17 MR. BENEDICT: I think the question is
18 clear. I didn't use the word "general
19 responsibility." I said as part of his job
20 responsibility. I am not here at this moment
21 interested in whether or not he happened to meet
22 Bill Zewe in a bar one day and talked to him
23 about it. I want to know whether he understood
24 part of his job responsibility during the days,
25 weeks and months following the Three Mile Island

1
2 accident included discussions with operators
3 where those discussions would relate to the
4 subject of the accident.

5 A There was one occasion on which I talked
6 to the operators in connection with my evaluation of
7 high-pressure injection and let-down flows during the
8 first several hours of the TMI-2 accident.

9 Q Do you recall whether that conversation
10 took place on June 19, 1979?

11 A No, it didn't.

12 Q Do you recall when it did take place?

13 A I thought it was June 13.

14 Q I am not going to quibble with you. All
15 I want is what you recall. With whom did you meet at
16 this time to discuss HPI operation?

17 A The topic of the meeting was more general.
18 I attended the meeting for the specific purpose of
19 establishing some operator actions with regard to
20 the HPI scenario.

21 Q Do you recall who was present?

22 A Gary Miller, Bill Zewe, Ed Frederick, Craig
23 Faust, Mr. Scheimann, Mr. Broughton, Mr. Keaten.

24 Q And yourself?

25 A And I was there. I believe Tom ~~w~~an Witbeck

1
2 of EI and Dick Dubiel of Met Ed were also there for a
3 small portion of the meeting.

4 Q How long was this meeting?

5 A The entire meeting was probably four to
6 five hours.

7 Q Do you know whether the meeting was
8 recorded or transcribed in any way?

9 A It wasn't.

10 Q It was not?

11 A It was not.

12 Q Did you take notes at the meeting?

13 A Yes, I did.

14 Q Do you still have those notes?

15 A Yes, I do.

16 Q Are those notes included in a spiral
17 notebook?

18 A Yes, they are.

19 Q Do you know who else took -- did you notice
20 that anyone else took notes at the meeting?

21 A No, I don't recall.

22 Q Other than the one, this one interview that
23 you attended sometime in June, do you recall any other
24 contacts you had in the course of your work at GPU
25 with operators where that contact related to the

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accident at Three Mile Island?

3

A No.

4

Q Do you recall testifying before the Atomic

5

Safety and Licensing Board on the subject of the TMI-1

6

restart?

7

A Yes, I do.

8

Q Do you recall the dates on which you

9

testified?

10

A November and early December 1980. Possibly

11

later in December and early the next year. No, I

12

believe it must have been all in the fall of 1980.

13

Q Do you remember what subject matters you

14

were interrogated with respect to?

15

A I was a witness with regard to emergency

16

feedwater system response and the adequacy of emergency

17

feedwater for certain design base transients and also

18

on containment isolation.

19

Q Other than your testimony before the ASLB,

20

have you given sworn testimony in any form?

21

A No.

22

Q Have you at any time been interviewed by

23

representatives of the NRC with respect to the

24

accident at Three Mile Island?

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A No.

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Q Have you been interviewed by representatives of any other body that studied the accident?

A No.

(Recess taken.)

Q Have you ever heard of a regulation called 10 CFR, Part 21?

A Yes, I have.

Q Could you describe for me what 10 CFR Part 21 requires as you understand it today?

A Part 21 requires the reporting of defects in equipment, components, and services associated with safety-related functions in nuclear power plants.

Q When did you first become aware that there was promulgated a rule called 10 CFR or a regulation called 10 CFR, Part 21?

A At the time that draft or proposed regulations were published in the Code of Federal Regulations.

Q Do you recall about when that was?

A The fall of 1977.

Q How did you become aware of those proposed regulations?

A At that time, as lead nuclear licensing engineer, one of my functions was to collect comments

1

2

on regulations that affected the operation of the
nuclear power plants that we were operating.

3

4

Q From whom were you to collect these

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comments?

6

A From Met Ed licensing, from engineering,

7

if that were applicable or reasonable, and from other

8

management personnel within GPU as applicable.

9

Q So at this time in the fall of 1977, when

10

the NRC would put forth the rule and request comments,

11

or proposed rule or regulation, and request comments,

12

it was your responsibility to gather those comments

13

and make some submission to the NRC; is that accurate?

14

A If the rule affected the operation design

15

of our plants, that would be true.

16

Q Do you recall whether there were comments

17

that you accumulated with respect to the proposed Rule

18

10 CFR, Part 21?

19

A No, I do not.

20

Q You don't recall?

21

A I don't recall.

22

Q Do you recall whether General Public

23

Utilities or any subsidiary made any comments to the

24

NRC with respect to Part 21?

25

A No, I don't recall.

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Q Did you have any responsibility with respect to drafting internal procedures in order to comply with the requirements of the new Part 21?

A I don't recall if it was a responsibility, but I was involved in drafting the internal procedures on Part 21.

Q When did that involvement begin?

A In the fall of 1977.

Q Is it accurate to say that GPU drafted procedures for compliance with Part 21 prior to the effective date of Part 21?

A That is my recollection, yes.

Q How did you become involved in drafting these procedures?

MR. GLASSMAN: Is the question who asked or whether anyone asked Mr. Lanese?

MR. BENEDICT: If someone asked him or how he came about to do some work with respect to that.

A I don't recall how I received the job assignment.

Q What do you recall about the job assignment?

A That I took a draft procedure, worked on it, circulated it for comments, incorporated those

1
2 comments, and eventually had the procedure signed by
3 appropriate management.

4 Q From whom did you receive the original
5 draft or the draft that you worked on?

6 A I don't recall where the original draft
7 initiated.

8 Q Do you recall who drafted it?

9 A No, I do not.

10 Q Was it based on a prior procedure in
11 effect at GPU?

12 A There was no prior procedure in effect at
13 GPU that I can recall.

14 Q Have you ever heard of a regulation called
15 10 CFR 50.55-E?

16 A Yes, I have.

17 Q Could you describe your understanding
18 briefly of what is required by 50.55-E?

19 A I am not sure I can, no.

20 Q Do you know whether 50.55-E continues to
21 be an active regulation with respect to the Three Mile
22 Island units?

23 MR. GLASSMAN: Objection.

24 Q Does 50.55-E still apply to GPU with respect
25 to the Three Mile Island units?

1

2

A I don't know.

3

4

5

6

Q Would it refresh your recollection if I told you that 50.55-E required reporting with respect to defects discovered during the construction phase of a nuclear plant?

7

A Yes, it would.

8

9

Q Does that help you recall any more detail than what I just gave you about 50.55-E?

10

11

12

13

14

A Yes, 50.55-E required the reporting of defects that if left undiscovered could adversely impact the safety analysis of the plant, I assume, equipment performance or operation, and could lead to events outside the design base.

15

16

17

Q Was there a procedure in effect at GPU at the time you arrived and began your employment there with respect to compliance with 50.55-E?

18

19

A I believe there was an engineering procedure that was in effect, yes.

20

21

22

Q Did you understand that procedure to apply or to make requirements or impose requirements upon you personally?

23

A I don't recall.

24

25

Q Did you understand that 10 CFR Part 21 when it became effective would impose upon you

1
2 personally some responsibility or obligation?

3 A Obligation, yes.

4 Q What did you understand your obligation to
5 be pursuant to Part 21 and GPU's procedures with
6 respect thereto? Let's say at the time period of
7 the implementation or the effective date of Part 21.

8 A To report to management potential defects
9 as defined in Part 21 related to safety-related
10 equipment.

11 Q Was it the procedures which specified those
12 obligations which you worked on during the fall of 1977?

13 A I don't recall the content of the procedure.

14 Q Today you can't recall that the procedures
15 you worked on in the fall of 1977 were in fact the
16 implementing procedures or the procedures by which
17 General Public Utilities was going to assure compliance
18 with Part 21?

19 A The procedures I worked on were the
20 implementing procedures for -- was the implementing
21 procedure for Part 21.

22 Q To whom, if you recall, did you circulate
23 the draft that you worked on of these implementing
24 procedures?

25 A I can't recall.

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Q Did you receive back, from whomever it was you did circulate them to, comments? Do you recall receiving comments?

A I believe so.

Q You said that one of your obligations with respect to these procedures was to see to it that it was signed. Did you say by whom it was to be signed?

A No, I didn't.

Q Who was to have the ultimate authority?

A I don't remember.

Q When you said "signed," you mean be accepted as appropriate as a GPU procedure?

A I meant incorporate comments through the signature chain until everyone who had signed the procedure was satisfied with its content.

Q By what method was this procedure converted from a draft into a procedure applicable within GPU?

MR. GLASSMAN: I am not sure I understand the question.

MR. BENEDICT: I am trying to understand the process whereby this procedure went from being a draft to being effective.

A I don't recall.

Q There came a time sometime, I take it,

1
2 during the fall or winter of 1977 that this draft
3 became an active procedure or an applicable procedure
4 within GPU; is that right?

5 A I don't recall when it became applicable.

6 Q Is it your recollection that the effective
7 date of 10-CFR Part 21 was in January 1978?

8 A I don't remember.

9 Q When you were drafting or when you were
10 working on this draft procedure, did you understand
11 that this procedure was to be utilized by all the GPU
12 companies?

13 A I don't remember.

14 Q Does GPU Service Corporation or did GPU
15 Service Corporation at this time have its own set of
16 procedures?

17 MR. GLASSMAN: Procedures for anything?

18 MR. BENEDICT: For anything, other than
19 clerical, other than style books for secretaries.
20 Procedures that you thought were applicable to
21 you personally and within your job.

22 A I don't know.

23 Q Did you understand at that time or at any
24 time prior to the accident at Three Mile Island that
25 General Public Utilities had procedures, at least some

1

2 which were applicable to you in the course of your job?

3

A At that time, I don't remember.

4

Q You don't recall or you did say you

5

recalled there were procedures for compliance with the
6 requirements of Part 21?

7

A That's right.

8

Q And you recall also that there were

9

procedures for compliance with 50.55-E; is that right?

10

A That's right.

11

Q Do you recall any other procedures?

12

A I do not, no.

13

Q I am not limiting myself, and this question

14

is perhaps broader and maybe simpler than it originally
15 sounded. I am not limiting myself to procedures which

16

may have been required for GPU to have pursuant to

17

some law or regulation. I am referring much more

18

broadly to procedures related to your work. You

19

referred to something earlier called an engineering

20

procedure. What are engineering procedures?

21

A The only one I recall was the one related

22

to 10-CFR 50.55-E. I can't recall if there were

23

procedures related to the conduct of my work.

24

Q Are there today procedures related to the

25

conduct of your work?

1

2

A Yes, there are.

3

4

Q Could you describe generally those procedures?

5

A No.

6

7

Q Can you remember the general titles or areas in which these procedures cover?

8

9

A Those procedures cover the conduct of most areas of operation of the company.

10

11

Q Are these procedures assembled in any one place for review?

12

A There is a GPU Nuclear procedures book.

13

14

Q GPU Nuclear is the subsidiary for which you currently work?

15

A Yes.

16

17

Q Do you know whether there is a book for any other subsidiary of General Public Utilities?

18

A No, I do not.

19

20

Q Do you recall that there was a book on procedures for GPU Service at any time during your employment by that company?

21

22

A I don't believe there was.

23

24

Q Does GPU Service continue to exist as far as you know?

25

A Yes.

1

2

Q It does exist?

3

A Yes.

4

5

Q Do you know today whether there is a procedure book for GPU Service?

6

A No, I do not.

7

8

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12

Q At the time -- from the time you first were asked to do some work on the draft procedure for compliance with Part 21, did you utilize any source material with respect to your review of the draft other than the draft itself?

A Not that I recall.

13

14

Q Do you recall whether you looked at the procedure for 50.55-E?

15

16

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19

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A No, I do not. I do recall that some point along the line there were briefings by NRC, questions and answers on Part 21 and interpretation of its applicability. I am fairly sure that I had reviewed that material.

Q Would that be the material that is contained in NUREG 0302?

A I don't remember the designation.

Q Was it a publication by the NRC that you reviewed?

A Yes.

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Q Did you attend any seminars on the prospective 10 CFR Part 21 given by the NRC?

A No, I did not.

Q Did you understand that the material that you reviewed, the question and answer material that you reviewed from the NRC, had come partly from these seminars?

A Yes, that's correct.

Q Do you still have the material that you used to review?

A No, I do not.

Q Do you recall where you obtained it?

A It was issued by NRC to licensees.

Q Making "you" the personal "you," do you recall where you, Mr. Lanese, got the document?

A No.

Q Do you recall what you did with it when you were done with it?

A No.

Q Did you make any changes in the draft procedure you received as a result of your review of any material including this material from the NRC?

A I don't recall.

Q Do you recall having any substantive

1

2

changes at all on the draft?

3

A No, I do not. I don't recall.

4

Q Did you retain any of the material that

5

you used including the draft itself and any comments

6

you may have received?

7

A I don't remember.

8

Q Where would you look today if you wanted

9

to find that material?

10

A In the licensing files.

11

Q Can you be -- if you were trying to help

12

somebody to find it, where would you look? Under what

13

topic? Is it a chronological subject? Are they kept

14

chronologically? Are they kept by subject matter?

15

Kept by individual?

16

A It would have been -- I would look for a

17

file that is entitled 10-CFR 21 or comments on

18

regulations. It would not have been a chronological

19

file.

20

Q It would be a file dating from sometime in

21

the fall of '77?

22

A There wouldn't have been a date associated

23

with the file.

24

Q Not necessarily written on the file, but

25

that was when all this was happening; is that right?

1

2

A That's right.

3

4

Q Do you recall about the latest date that you had any involvement with this draft procedure?

5

6

7

A If implementation was indeed in January 1978, I don't believe I had any involvement much beyond that.

8

9

10

Q By what means, if any, did GPU bring the requirements of 10 CFR Part 21 to the attention of its employees?

11

12

13

MR. GLASSMAN: You are not looking for Mr. Lanese's personal role but his knowledge if any --

14

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16

17

MR. BENEDICT: Sure. If he did something, that is certainly relevant, and also if he remembers how -- that he was included in a lecture or slide show or handout or whatever.

18

19

20

21

A The regulation required posting of requirements of Part 21. I know they were posted. I believe Mr. Verrochi transmitted the procedure to at least managers at GPU.

22

23

24

25

Q Who is Mr. Verrochi?

A At that time, Mr. William Verrochi was the vice president of the Service Corporation, I believe.

Q And it is --

2 A Unless it was Mr. Arnold by that time.

3 Q Robert Arnold?

4 A Yes.

5 Q It is your recollection that at least the
6 managers at what level?

7 A I am not sure.

8 Q It was your recollection there was some
9 distribution of the regulation itself or of the
10 procedures or both or neither?

11 A Of the procedrue. I don't recall if the
12 regulation was included in distribution.

13 Q Did you receive an unsolicited copy of the
14 procedure relating to 10 CFR Part 21?

15 A No, I don't remember.

16 Q Do you remember any other disseminations of
17 information concerning 10 CFR Part 21 other than the
18 postings you have mentioned and the distribution of
19 the procedure to some or all management level people?

20 A I know there were postings at the plants
21 as well.

22 Q Do you know whether there were training
23 sessions conducted on obligations or the requirements
24 of 10 CFR Part 21?

25 A I can't be sure.

1

2

Q You don't recall ever attending?

3

A No, I don't believe I did.

4

Q Do you know of anyone at GPU who attended

5

the NRC seminars from which the NRC material came, or

6

at least parts of it?

7

A I don't know who if anyone attended the

8

seminars.

9

Q Did you understand there to be -- at the

10

time you were working on the draft procedure for

11

compliance with Part 21, whom did you understand to

12

be in charge of the preparation of that procedure?

13

A I don't understand what you mean by "in

14

charge of."

15

Q Was there someone who had the ultimate

16

responsibility of seeing to it that this procedure

17

was appropriately drafted and put into effect, or did

18

you know who that person was?

19

A I don't remember.

20

Q Who was your immediate superior at this

21

time?

22

A I don't recall if the safety and licensing

23

manager's position was filled at the time. In that

24

sense, I don't know.

25

Q Did you have an acting supervisor at least

2 in that period?

3 A No.

4 Q To whom did you report?

5 A To Mr. Thorpe.

6 Q Do you have any reason to believe that you
7 did not get this work with respect to this draft in the
8 normal chain of command, through the normal chain of
9 command?

10 MR. GLASSMAN: I object. I am not sure
11 what the normal chain of command is.

12 MR. BENEDICT: I will get to that.

13 Q What is the normal chain of command for you
14 to get work at this time in the fall of 1977? How
15 did you get your work?

16 A Assuming that the safety and licensing
17 manager's position was not filled.

18 Q That is your recollection.

19 A From Mr. Thorpe.

20 Q Any other source?

21 A I could receive work requests from the
22 project manager or work requests from any other
23 manager within GPU to supply support.

24 Q What percentage of your work as you can best
25 recall during the period of the fall of 1977 did you

1

2

get from sources other than Mr. Thorpe?

3

A Perhaps ten percent.

4

Q Do you have any reason to believe that

5

the work that you did with respect to 10 CFR Part 21

6

and its implementing procedures was work that you did

7

not receive from Mr. Thorpe?

8

A No.

9

Q When we began discussing 10 CFR Part 21,

10

you provided me with a brief summary of what 10 CFR

11

Part 21 required. Since your initial exposure to

12

Part 21 in the fall of 1977, has your understanding of

13

its requirements changed between then and now?

14

A I don't believe so.

15

Q You said that you recalled that there were

16

posting requirements which included posting at the

17

plants. Does that refresh your recollection that the

18

procedure that you were working on was a procedure which

19

would apply to plant personnel as well as to

20

administrative personnel?

21

A No, it doesn't.

22

Q You can't recall one way or the other?

23

A No.

24

(Recess taken.)

25

Q I would like to show you a copy of the

transcript of the ASLB hearing on the Metropolitan Edison Company Three Mile Island Unit 1 restart, Docket No. 50-289, the date is November 14, 1980. And I would like you to turn to Page 5699.

First, does the volume I handed you represent a copy of testimony that you gave on November 14, 1980, before an ASLB panel with respect to TMI-1 restart?

A Yes, it does.

MR. GLASSMAN: One moment.

(Off-the-record discussion ensued between the witness and his counsel.)

Q I would like to read, and I would like you to read along with me, the questions and answers beginning at Line 3 of Page 5699. The question reads:

"Would you agree that if there were an accident with loss of main feedwater and total loss of emergency feedwater that you would be unable to meet the requirements of 50.46 without using feed and bleed?"

MR. GLASSMAN: Objection. The correct transcript says bleed and feed.

Q "Answer: (Witness Lanese) I don't think 50.46 is applicable as a criterion because we're talking about a multiple failure situation. 50.46

1

2

does not address that situation.

3

4

"Question: Let's assume we have lost
main feedwater and assume we have no emergency feedwater.

5

Can the reactor core be adequately cooled following an

6

accident such as a small break LOCA without using

7

bleed and feed?

8

9

"Answer: (Witness Lanese) I think the
answer that we gave in response to 6-A still stands,

10

that you would require feed and bleed to cool the

11

reactor core again with the understanding that the

12

total loss of main and emergency feed water isn't a

13

design basis."

14

15

Were you asked those questions and did you
give those answers before the ASLB?

16

A Yes, I did.

17

18

Q Have you had an opportunity to review your
testimony before the ASLB at any time since you gave it?

19

A I believe I read it.

20

21

Q Were you asked to prepare an errata sheet
or note errors in your testimony?

22

A Yes, I was.

23

Q Did you do that?

24

A Yes, I did.

25

Q To whom did you give your errata sheet?

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A I don't remember how that was transmitted to counsel.

Q Earlier in the afternoon, we discussed the term, design basis. That term appears on Line 19 of this testimony. It says -- your answer says, in part: "With the understanding that that total loss of main and emergency feedwater isn't a design basis."

What did you mean by the expression, "design basis" when you used it in that sentence or that answer?

A An event for which the requirements of 10-CFR -- not requirements -- but acceptance criteria of 10-CFR 50.46 would have to be applied.

Q Is a design basis event as you used it here an event which would qualify as the worst case under the assumptions contained in Appendix K to 50.46?

MR. GLASSMAN: Are you asking for an opinion or interpretation?

MR. BENEDICT: If that is his understanding of the word "design basis" as he used it in his testimony.

MR. GLASSMAN: Objection to the form. Lack of foundation, that he referred to Appendix K

1
2 in the course of his testimony or that he was
3 thinking of it at the time or anything of that
4 sort. It is a compound question with a number of
5 assumptions in there.

6 We are not here to find out some general
7 opinion that this witness now has of a regulation,
8 but if you rephrase the question to seek infor-
9 mation as to what the witness had in mind at
10 the time and what he gave consideration to, I will
11 permit him to answer that.

12 MR. BENEDICT: I press my question.

13 (Record read.)

14 MR. GLASSMAN: Are you asking for his
15 current opinion or his recollection of what he
16 intended?

17 MR. BENEDICT: What his understanding is
18 of the word as he used it here.

19 MR. GLASSMAN: Are you asking for his
20 current understanding of the word as it appears
21 there, or are you asking for his recollection of
22 his understanding as he was applying it in the
23 testimony?

24 MR. BENEDICT: Let's try to go with what
25 I said, and if the witness can't divine how I

1
2 want it answered, he can ask.

3 MR. GLASSMAN: I don't think that is an
4 appropriate way to proceed. The question is
5 somewhat unclear, and I am entitled to know what
6 you are asking for so the witness has some
7 guidance.

8 MR. BENEDICT: I think it is fair to say
9 that the reason the question is posed the way it
10 is is because Mr. Lanese has not been forthcoming
11 in describing what he understands the word
12 "design basis" to mean.

13 MR. GLASSMAN: I find that absolutely
14 objectionable and outrageous.

15 The witness has given testimony quite a
16 while back today on this. There were no
17 objections voiced by counsel at the time as to
18 the nature of the witness's testimony. It was
19 totally forthcoming. You were free to proceed
20 with any further questions if you thought there
21 was some other information that you wanted.

22 MR. BENEDICT: That is exactly what I
23 am doing here. I think that my question is
24 understandable and acceptable. I will run the
25 risk of it being objectionable as to form.

1
2 As you know, you have only to note that
3 on the record, and it is preserved.

4 I would appreciate if we can get this
5 answer, and if I don't understand the answer or
6 if Mr. Lanese doesn't understand the question,
7 I am sure he and I can work that out.

8 I don't approve or appreciate efforts
9 to make a question sound even more confusing
10 than it is.

11 MR. GLASSMAN: We have our different views.

12 MR. BENEDICT: I am sure if we can get an
13 answer to this question, we can move on from
14 there. We can save a lot of time by not entering
15 into a bunch of colloquy.

16 MR. GLASSMAN: He can attempt to answer
17 it, but the objection stands.

18 (Record read.)

19 A As I have used the terminology here, I
20 was discussing and commenting on whether the
21 postulated event was required to meet the acceptance
22 criteria of 10-CFR 50.46.

23 Q Is that your response to my question?

24 A As best as I can give it at this time, yes.

25 MR. BENEDICT: I object and move to strike

1
2 as nonresponsive. But we will go on rather
3 than quibbling about it.

4 MR. GLASSMAN: Let me add here, lest
5 there be any confusion: Besides the point I
6 was making, I am not directing the witness not
7 to answer; and obviously I think you received
8 a responsive answer.

9 There are different interpretations of
10 what your question was, whether it was directed
11 to what the witness meant by "design basis" as
12 used in the testimony, or whether there was
13 perhaps a different question implied by counsel
14 as to some other interpretation of Appendix K
15 or something like that. The witness has given
16 his testimony as to what he meant when he gave
17 his testimony, which may not be the same as what
18 counsel thinks he meant. You are free to ask
19 further questions if you wish. We were not
20 directing the witness not to answer.

21 BY MR. BENEDICT:

22 Q As I understand it, Appendix K contains
23 certain maximum limits with respect to core cooling;
24 is that correct?

25 A It contains limits on allowable peak cladding

1

2

temperature.

3

Q And local oxidation?

4

A Yes.

5

Q Overall hydrogen generation?

6

A Correct.

7

Q Coolable geometry?

8

A It doesn't specify coolable geometry, but

9

it addresses it.

10

Q Were you answering this question utilizing

11

50.46 merely as a list of what the NRC considers

12

acceptable core-cooling criteria, or were you using

13

it in the analytical sense as it is utilized for

14

licensing?

15

MR. GLASSMAN: Objection as to form.

16

The witness may answer.

17

A I don't believe either one of those

18

characterizations explains the context of the answer

19

here.

20

Q I guess what I am getting at is that

21

isn't it true that the limitations imposed for core

22

cooling in 50.46 are limitations on hypothetical

23

events which are calculated based on assumptions

24

contained in Appendix K to 50.46?

25

MR. GLASSMAN: Objection insofar as you

1
2 are asking for an interpretation of a regulation
3 which we can all read and apply ourselves, if
4 we wish.

5 If the question is directed to whether
6 you have correctly stated Mr. Lanese's
7 understanding of that, then I will accept the
8 question.

9 MR. BENEDICT: I am asking what his
10 understanding is.

11 A My answer is "No."

12 Q Prior to the Three Mile Island accident,
13 what was your understanding of the utilization of
14 50.46 for purposes of licensing?

15 A That in conjunction with applicable general
16 design criteria and other sections of Part 50,
17 appropriate equipment availability would be defined,
18 the event had been defined, and equipment
19 availability would be analyzed, and the acceptance
20 criteria for fuel oxidation, peak clad temperature,
21 et cetera, as we mentioned before, would be defined
22 in 50.46 and Appendix K.

23 Q You mentioned that an analysis would be
24 done. Isn't it true that that analysis would be done
25 pursuant to the assumptions set forth in Appendix K to

1
2 Part 50?

3 MR. GLASSMAN: You want the witness's
4 understanding?

5 MR. BENEDICT: Prior to the Three Mile
6 Island accident.

7 MR. GLASSMAN: You want the witness's
8 understanding now of what the regulations were
9 then?

10 MR. BENEDICT: What his understanding was
11 prior to Three Mile Island.

12 A No.

13 Q That it is not your understanding that
14 Appendix K provided the assumptions under which
15 analyses to assure compliance with 50.46 were done?

16 A My answer to that question is yes.

17 MR. BENEDICT: Let's hear the question
18 back.

19 (Record read.)

20 Q You are saying it is not your understanding?

21 A My understanding is that Appendix K
22 supplies the criterion with respect to fuel performance
23 under which you do the fuel analysis in order to
24 demonstrate compliance with 10-CFR 50.46.

25 Q When you say fuel analysis, do you mean

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2

core cooling analysis?

3

4

5

6

A Core cooling, blow down assumptions, acceptable correlations to be used in the core cooling analysis, yes. 50.46 and Appendix K are not the only governing regulations.

7

8

Q By that you mean there are other general acceptance criteria other than 50.46 and Appendix K?

9

10

11

A There are other regulations and general design criteria which define the analysis that has to be performed.

12

13

Q Those are in addition to, rather than in lieu of, analyses pursuant to 50.46 and Appendix K?

14

15

16

17

A Yes.

Q Prior to the Three Mile Island accident, what was your understanding of the meaning of the expression, single-failure criterion?

18

19

20

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22

23

24

25

A By "single-failure criterion," I assume the postulation of a worst case active or passive failure of electrical equipment or worst case active failure of mechanical equipment to define the equipment performance during various design basis events. Single-failure did not include consequential failures of the event -- did not and does not include consequential failures and did not and does not include

1
2 nondetectable failures.

3 Q What is a consequential failure?

4 A Consequential failure would be an equipment
5 failure or accident consequence that follows from the
6 event that is being postulated.

7 (Off-the-record discussion ensued between
8 the witness and his counsel.)

9 Q Was it your understanding prior to the
10 Three Mile Island accident that the NRC did not require
11 that the design of a nuclear plant comply with the
12 requirements of 50.46 in the event of a multiple
13 failure situation?

14 Let's hold back that question. I will
15 withdraw that question for the time being.

16 Could you explain to me what a multiple
17 failure situation is? You use it in Line 9 of your
18 testimony at Page 5699. That is where I got it.

19 A Multiple failures would be independent
20 failures of safety-related equipment.

21 Q Is a common mode failure a type of
22 multiple failure, as you understood it, prior to the
23 Three Mile Island accident?

24 A It is a separate categorization of failure.

25 Q Are all common mode failures contained as

1
2 a sub set within the general set of multiple failures
3 as you understood it prior to the accident?

4 A No.

5 Q In what respect, as you understood it prior
6 to the Three Mile Island accident is a common mode
7 failure different from a multiple failure?

8 A A common mode failure is different from a
9 multiple failure in that it is included in the design
10 basis of the power plant.

11 Q Is a common mode failure of high-pressure
12 injection included within the design basis of Three
13 Mile Island Unit 2 or was it prior to the accident?

14 A Let me explain my answer again. If a
15 common mode failure is detected or is postulated to
16 cause failure of all high pressure injection, then,
17 yes, it is within the design basis of the plant.

18 Q Is a common mode failure a failure of a
19 single component which has the effect of eliminating
20 otherwise redundant components, all redundant
21 components?

22 A If you mean a single component that is
23 duplicated in more than one train, and I should say
24 redundant train, then the answer would be yes. It is
25 not a single component that affects multiple trains.

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Q It rather is a component, one of which is contained in each train, which is subject to simultaneous failure with its fellows?

A To a common cause of failure, yes; for example, a design deficiency, which could cause multiple components to fail at the same time.

Q Is it -- was it prior to the Three Mile Island accident, in the safety analyses done, ever assumed for purposes of analysis that a small break loss of coolant accident could occur at Unit 2 when there would be no high-pressure injection available?

MR. GLASSMAN: Objection. You used in your question a statement of any safety analysis done.

MR. BENEDICT: I will restate the question.

Q Earlier in your testimony you used the expression, FSAR transients and accidents. Did any of the FSAR transients or accidents included in the Three Mile Island Unit 2 FSAR which related to small break LOCA's consider the scenario of no available high-pressure injection?

A Yes.

Q What transient or transients were those?

A There was a question relating to the

2 failure of a high-pressure injection line associated
3 with the single active failure that could result in
4 no high-pressure injection and which is a small break
5 loss-of-coolant accident.

6 Q Was there a procedural change made to
7 eliminate the possibility that no high-pressure
8 injection would be available prior to the Three Mile
9 Island accident?

10 A I believe so.

11 Q Was that the cross-connect of the HPI pumps?

12 A Manual cross connect?

13 Q Yes.

14 A By operator action, yes.

15 Q Other than that event, was there any
16 postulated FSAR transient or accident relating to
17 small-break LOCA's which assumed the total absence of
18 high-pressure injection?

19 MR. GLASSMAN: You are looking for Mr.
20 Lanese's recollection?

21 MR. BENEDICT: Yes, prior to the Three
22 Mile Island accident.

23 MR. GLASSMAN: Obviously we can read the
24 FSAR and try to ascertain that.

25 A Implicit in any accident in which HPI

1
2 was assumed was the conclusion that there were no
3 common mode failures or consequential failures of
4 that event which could result in failure of
5 high-pressure injection.

6 Q Was the justification for that implicit
7 assumption the single-failure criterion?

8 A It was a number of things, including the
9 single-failure criterion.

10 Q What else justified that implicit
11 assumption?

12 A Explicit investigation of the effects
13 of high-energy line break, the pipe whip and jet
14 impingement resulting from the line break, common mode
15 failure considerations, and the effect of a natural
16 phenomenon.

17 Q Such as earthquakes?

18 A Yes, or floods or fires.

19 Q Prior to the Three Mile Island accident,
20 what did you understand to be the source of the
21 single failure criterion?

22 A With respect to LOCA analysis, it was
23 embodied in general design criteria 35, and a footnote
24 to the preamble of Appendix A.

25 Q Appendix A?

2 A Appendix A of 10-CFR 50, and as referenced
3 in IEEE Standard 279.

4 Q Would it be correct for me to say that
5 single-failure criterion and design basis are terms
6 of art in your job?

7 A Single-failure criterion is well defined,
8 and certain areas are subject to interpretation as is
9 any regulation, but no, I wouldn't consider it art.
10 Before the accident, there were fairly well-defined
11 criteria upon which to perform single-failure analysis.

12 Q I guess I may have assumed that that
13 expression common to lawyers was common to engineers.
14 By "term of art," I mean a term that has a regularly
15 accepted definition in your business; a generally
16 accepted definition would be a better expression.

17 Are the expressions,
18 "design basis" and "single-failure criterion,"
19 expressions with a generally accepted definition
20 within Mr. Lanese's field?

21 MR. GLASSMAN: I don't know what you mean
22 by Mr. Lanese's field.

23 MR. BENEDICT: Nuclear engineering and
24 licensing.

25 MR. GLASSMAN: You are talking about now

1
2 or then?

3 MR. BENEDICT: His entire career.

4 MR. GLASSMAN: You are looking for his
5 judgment on this, I assume?

6 MR. BENEDICT: Absolutely. If he is
7 uncomfortable with saying it, he can just say he
8 doesn't know.

9 A There is no one definition of the
10 single-failure criterion, but I believe the definition
11 that I previously gave is accepted within the industry.

12 Q Is that true as well with the expression,
13 "design basis"?

14 A With respect to licensing the plant,
15 design-basis events are defined.

16 Q I beg your pardon?

17 A Design-basis events are defined with
18 respect to licensing power plants, and there is some
19 interpretation associated with that from docket to
20 docket.

21 Q Can you provide me with a general definition
22 of design-basis event, as opposed to a definition by
23 example, a general understanding, as you understand it
24 in licensing, your expertise?

25 MR. GLASSMAN: Haven't we done this before?

1
2 MR. BENEDICT: This is the question you
3 said I was entitled to ask a few more questions
4 on.

5 MR. GLASSMAN: I understnad. But it seems
6 like you are asking the same question.

7 MR. BENEDICT: I put on the record that I
8 moved to strike the answer as nonresponsive.
9 I would like to try to get an answer that is
10 responsive.

11 MR. GLASSMAN: I should note that the
12 answer which you purportedly moved to strike was
13 not to the question which you have just phrased.
14 The question you just phrased was asked a good
15 deal earlier in the day, and there was an
16 answer, and there was no motion or no comment.
17 Everything was fine. I will let you have the
18 witness answer this to speed things along.

19 MR. BENEDICT: I agree I did cover part of
20 this subject earlier. I stopped because I was
21 going to go off to another one, because I
22 realized I was going to have to work from
23 example, because I wasn't getting answers that
24 I could deal with, and I thought if I presented
25 him some testimony where he used the expression,

1
2 I might get something out of him. That happened
3 later in the deposition. I don't think I am
4 abusing the deponent or the practice of taking
5 depositions.

6 MR. GLASSMAN: In the interest of getting
7 on with it, he can answer once again.

8 BY MR. BENEDICT:

9 Q Could you give me a general definition of
10 the expression which you used, "design basis event,"
11 as opposed to a definition which relies solely on
12 example?

13 A A design basis event is a postulated
14 accident or transient which is a basis for the
15 licensing of the power plant in which acceptance
16 criteria are specified.

17 Q Are design basis events negotiated with
18 the NRC for a particular plant?

19 A I wouldn't use the word "negotiated,"
20 but on various dockets, certain events are imposed
21 that may not be imposed as design basis events on other
22 dockets.

23 Q For example, some dockets might impose a
24 more strict requirement with respect to seismic
25 activity. Is that an example of what you mean, or

1
2 aircraft impact?

3 A Aircraft impact is an example of an event
4 that may not be imposed on every plant.

5 Q Is there a list of the design-basis events
6 for Three Mile Island Unit 2?

7 A Not in that form, no.

8 Q What form -- how are the design-basis
9 events for Unit 2 incorporated into the FSAR?

10 A They appear in the Accident Analysis
11 Section, in Chapter 2 on natural events. I believe
12 also it would appear in some cases as license conditions.

13 Q Would that mean that they were not included
14 in the FSAR or they were?

15 A That the event might have been discussed
16 in the FSAR, but not having been incorporated into the
17 body of Chapter 15, it would not necessarily become a
18 design-basis event. Merely answering your question,
19 on the consequences of an event in the FSAR or on the
20 docket does not make it a design-basis event.

21 Q Are you aware of any design-basis event
22 included within the docket or applicable to Three Mile
23 Island Unit 2 which relates to a small-break LOCA and
24 assumes the total absence of high-pressure injection?

25 A I have to fall back on my previous answer.

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2 Explicitly, the HPI line break and implicitly every
3 other small break assumes that HPI is available because
4 there is no common mode failure, consequential failure
5 or single failure that makes HPI totally unavailable.

6 Q Prior to Three Mile Island, did you
7 understand that the requirements of 10 CFR Part 21 as
8 they applied to you required that you report
9 hypothetical or potential events beyond the design
10 basis of the plant?

11 MR. GLASSMAN: Objection. Compound
12 question.

13 MR. BENEDICT: Let me hear the question.

14 (Record read.)

15 MR. BENEDICT: You just have a quarrel with
16 the hypothetical or potential?

17 MR. GLASSMAN: I don't know if there is
18 any difference.

19 MR. BENEDICT: I will stand on the
20 question because I can't think of any reasonable
21 way to rephrase it.

22 A Yes.

23 Q Did you at any time prior to Three Mile
24 Island make any reports pursuant to 10 CFR Part 21?

25 A I don't recall.

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Q Have you made any reports pursuant to the procedures in place at GPU prior to Three Mile Island, procedures in place at GPU with respect to compliance with Part 21?

A Who do you mean by "you"?

Q I will rephrase the question. My earlier question was, did you make any reports pursuant to Part 21? I want to make sure we understand each other. I mean to include reports pursuant to the procedure at GPU with respect to compliance with Part 21.

MR. GLASSMAN: Reports by Mr. Lanese?

MR. BENEDICT: Yes.

A No, I never did.

Q Have you made any pursuant to that procedure since the Three Mile Island accident?

A No.

Q Did you make any reports with respect to the Three Mile Island accident under the procedures at GPU for 10 CFR Part 21?

A No.

Q Did you understand prior to Three Mile Island that pursuant to Part 21 you were obliged to report hypothesized multiple-failure situations in which general acceptance criteria would be exceeded?

2 A It hinges on the meaning of "multiple
3 failures."

4 Q I understood you to mean by "multiple
5 failures," failures beyond those hypothesized by the
6 single-failure criterion.

7 A If there were hypothesized multiple
8 failures of safety grade equipment not caused by
9 common mode failure, you would not be required to
10 report by Part 21. I should add, not as a result
11 of common mode failure or consequential failure, pipe
12 whip or jet impingement, then you would not be required
13 to report.

14 Q Has your understanding of the definition
15 of single failure criterion changed since the time of
16 the accident at Three Mile Island?

17 A No.

18 Q Has your understanding of the definition
19 of design-basis event changed since the accident at
20 Three Mile Island?

21 A No.

22 Q Has your understanding of the meaning of
23 the expression, "common mode failure," changed since
24 the accident at Three Mile Island?

25 A No.

1
2 Q Do you understand the requirements of
3 Part 21 to have changed since the accident at Three
4 Mile Island?

5 A Not to my knowledge, no.

6 Q Are you aware of any proposed changes to
7 the requirements of Part 21 by the NRC since the
8 accident at Three Mile Island?

9 A No, I am not.

10 MR. BENEDICT: That is all.

11 (Time noted: 5:00 o'clock p.m.)
12
13

14 Louis C. Lanese

15 Subscribed and sworn to before me
16 this day of 1982.
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19 Notary Public
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C E R T I F I C A T E

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

I, JOSEPH R. DANYO, a
Notary Public within and for the State of New York,
do hereby certify that the foregoing deposition
of LOUIS C. LANESE was taken before
me on Wednesday, March 24, 1982;

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

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

IN WITNESS WHEREOF, I have hereunto set
my hand this 7 day of April 1982.

Joseph R. Danyo
Joseph R. Danyo

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B&W FOR
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