

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,	:	80 CIV. 1683
	:	(R.O.)
-against-	:	
	:	
THE BABCOCK & WILCOX COMPANY and	:	
J. RAY McDERMOTT & CO., INC.,	:	
	:	
Defendants.	:	

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Continued deposition of Defendant THE
BABCOCK & WILCOX COMPANY by JOSEPH J. KELLY,
JR., taken by Plaintiffs, pursuant to
adjournment, at the offices of Kaye, Scholer,
Fierman, Hays & Handler, Esqs., 425 Park
Avenue, New York, New York, on Thursday, May
7, 1981, at 9:10 o'clock in the forenoon,
before Walter Shapiro, a Certified Shorthand
Reporter and Notary Public within and for the
State of New York.



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MR. MacDONALD: I would like to mark for identification as GPU Exhibit 158 a copy of a memorandum from J. J. Kelly to C. D. Morgan dated September 28, 1979, a three-page document. The second page is a memo from Tally to Kelly, September 14, 1979, and there is also a third page.

(Three-page document consisting of a September 28, 1979 memorandum from J. J. Kelly to C. D. Morgan, a September 14, 1979 memo from Tally to Kelly, and a third page was marked GPU Exhibit No. 158 for identification as of this date.)

J O S E P H J. K E L L Y, J R.,

resumed, having been previously sworn by a Notary Public, and testified further as follows:

EXAMINATION (CONTINUED)

B" MR. MacDONALD:

Q Mr. Kelly, did you write GPU 158 in or about late September 1979, the first page?

A Yes.

Q Would you look at the middle of the paragraph, the only paragraph on that page. You

Kelly

1
2 see where the sentence begins "Our primary tools..."?

3 A Yes.

4 Q It says: "Our primary tools for this
5 analytical work are" done by "Power Train and TRAP."

6 MR. KOLB: It does not say "done by."

7 Q "...Power Train and TRAP," T-R-A-P.
8 Do you see that?

9 A Yes.

10 Q What are Power Train and TRAP?

11 A Power Train is a name of a B&W code. It is a
12 hybrid code consisting of some analytical computers
13 and some digital computers.

14 TRAP is another B&W code. It is a
15 straight, transient, digital code.

16 Q Were both of these codes used in B&W's
17 transient analyses?

18 A Yes.

19 Q Were they used in transient analyses
20 prior to the TMI-2 accident?

21 A Yes.

22 Q Were they B&W primary tools for
23 analytical work on transients?

24 MR. KOLB: At what point in time?

25 MR. MacDONALD: Prior to the TMI-2

Kelly

1
2 accident.

3 A They are only two of several codes. I mean,
4 there are Fuel Management Prediction codes. There
5 are codes used by the Emergency Core Cooling System.
6 I don't know what you mean by "primary."

7 Q As you used it in that sentence, "Our
8 primary tools for this analytical work," how did you
9 intend "primary tools for this analytical work"?

10 A That was primary tools for the ATOG Program
11 analytical work.

12 Q Were you using these two sets of codes
13 in a different manner in your ATOG work than they
14 had been used previously, prior to the TMI-2
15 accident?

16 A I have no experience with using them prior to
17 ATOG, so I don't -- I can't talk about how they were
18 used in the past.

19 Q Do you know on what particular types of
20 transients, prior to the TMI-2 accident, Power Train
21 was used to analyze?

22 A It was used for analyzing plant transients
23 while the reactor is at power.

24 Q And TRAP?

25 A TRAP is primarily a safety analysis

Kelly

code used by our Safety Analysis Unit, and it was developed for analyzing design cases of overcooling transients such as steamline breaks.

Q In the next sentence, you state:

"However, both of these have limitations when realistic compound casualties are being considered."

Do you see that?

A Yes.

Q The term "both" is a reference, I take it, to Power Train and TRAP?

A Yes.

Q When you said "have limitations when realistic compound casualties are being considered," what did you mean?

MR. KOLB: Would you read the quote again, just to be certain.

(Record read)

A Primarily, we were trying to address the code capabilities to efficiently calculate compound casualties and by "efficiently," I am trying to say financially efficient.

Q In what way hadn't it been financially efficient, the analysis of compound casualties?

MR. KOLB: Objection as to form.

2 A They were not used in the past, to my
3 knowledge, to analyze compound casualties. We were
4 trying to extend their usage to include that.

5 Q In other words, the Power Train code which
6 was used by B&W to analyze transients at power had
7 not been applied to compound casualties prior to your
8 ATOG analysis?

9 A I don't know.

10 Q Well, this was the first time that you
11 knew of that the Power Train was being applied to
12 those compound casualties, is that right?

13 A It was the first time I knew of it, yes.

14 Q Had you ever heard from anybody else
15 at B&W that previously those compound casualties
16 had been analyzed by the Power Train code?

17 A Not that I remember.

18 Q This is the first time that you know of
19 that the TRAP code was being applied to compound
20 casualties?

21 A Again, I can't recall any previous knowledge
22 of that before I tried to use it.

23 Q You hadn't heard of it --

24 A Right.

25 Q -- being used for analyzing compound

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casualties?

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A Not that I remember.

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Q Do you know what codes, if any, B&W was using prior to your ATOG work for analyzing compound casualties?

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A I don't remember any.

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Q In the second page of GPU Exhibit 158, the memorandum from C. W. Tally to J. J. Kelly dated September 14, 1979, would you look in the first paragraph.

12

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Do you see the sentence that begins "As event tree preparation progresses..."?

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A Yes.

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Q That sentence reads: "As event tree preparation progresses, it is clear that the analysis techniques available to our engineers are inadequate for accurately and analytically predicting sequences of events and many intermediate and final plant conditions."

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Did you receive a copy of this memo from Mr. Tally in or about the middle of September 1979?

24

A Yes.

25

Q Did you speak to Mr. Tally at all

1
2 their supervisor.

3 Q In the first sentence of that first
4 paragraph, Mr. Tally used the phrase "analysis
5 techniques."

6 What did you understand by that phrase,
7 "analysis techniques"?

8 A My understanding, he was referring to computer
9 code capability.

10 Q Would that be the capabilities of the
11 two codes we have previously discussed, Power Train
12 and TRAP?

13 A I don't remember.

14 Q What other computer codes were used
15 by B&W prior to the TMI-2 accident? I mean, was
16 there a code by the name of CADDS, C-A-D-D-S?

17 A Yes.

18 Q What was that computer code used for?

19 A I don't remember.

20 Q Do you recall whether there was also a
21 computer code named CRAFT 2, C-R-A-F-T 2?

22 A Yes.

23 Q Do you know whether or not that code
24 was used to analyze loss of cooling action?

25 A Yes.

1
2 Q And that code was used prior to the
3 time of the TMI-2 accident?

4 A I don't know.

5 Q Do you know that CADDs was used to
6 analyze loss of feedwater transients?

7 A I don't know what CADDs was used for.

8 Q Had you ever heard of a code in use at
9 B&W called CONTEMPT, C-O-N-T-E-M-P-T?

10 A Yes.

11 Q What was CONTEMPT used for?

12 A Calculating reactor building containment
13 temperatures and pressures under post-accident
14 conditions.

15 Q Was that code in use prior to the time
16 of the TMI-2 accident?

17 A I don't know.

18 Q Did you understand that Mr. Tally was
19 referencing with this phrase "analysis techniques"
20 all the codes used by B&W to analyze transients?

21 A I don't recall.

22 Q In that same sentence he uses
23 "analysis techniques," he goes on to say "available
24 to our engineers..."

25 By "our engineers," I take it you

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understood he meant B&W engineers?

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A No.

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Q What did you understand by the phrase
"our engineers"?

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A He is using the term "our" to apply to
engineers involved in the ATOG program.

7

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Q Those engineers were B&W engineers?

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A Yes.

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Q He goes on in that sentence to say
"are inadequate for accurately and analytically
predicting sequences of events."

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What did you understand Mr. Tally to
mean by the phrase "sequences of events"?

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A I don't remember.

16

Q Did you take that to mean transients,
sequences of events in transients?

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A As I read it now, you mean?

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Q No, when you read it then.

20

A I don't recall.

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Q In the next paragraph, you see the
sentence, the first sentence begins: "In SAR
analyses..."?

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A Yes.

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Q That sentence reads: "In SAR analyses

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2 most moderately frequent events, including all
3 those analyzed by PS&C, do not result in significantly
4 off-normal plant conditions." The term "SAR
5 analyses" refers to Safety Analysis Report?

6 A Yes.

7 Q What did you understand Mr. Tally was
8 meaning when he said that "In SAR analyses most
9 moderately frequent events including all those
10 analyzed by PS&C, do not result in significantly
11 off-normal plant conditions"?

12 A I don't remember what phrase or what my
13 reaction to it was.

14 Q Mr. Tally goes on to say in the next
15 sentence, "The ATOG program will force us to
16 analyze many new sequences of events which have not
17 been previously considered and which result in
18 degraded NSSS conditions."

19 Did you understand Mr. Tally to be
20 saying that the ATOG program would force B&W to
21 analyze many new sequences of events which had not
22 previously been considered prior to the time of the
23 TMI-2 accident?

24 THE WITNESS: Would you repeat that,
25 please?

2 Q I can restate it.

3 By that sentence, did you understand
4 Mr. Tally to be saying that the ATOG program was
5 requiring B&W to analyze new sequences of events
6 that they had not previously analyzed?

7 A Yes.

8 Q Which sequence of events did you
9 understand Mr. Tally to be referring to that had
10 not been previously analyzed?

11 A At that time, we did not know specific
12 scenarios that we would be analyzing, but we knew
13 we would be looking at compound and multiple
14 failures.

15 Q Which had not previously been analyzed?

16 A Yes.

17 Q Mr. Tally used the phrase "degraded
18 NSSS conditions."

19 What did you understand him to mean by
20 that phrase?

21 A I don't remember.

22 Q He states in the next sentence, "The
23 TMI-2 transient is a good example of what I mean."

24 What did you understand Mr. Tally to be
25 saying in that sentence?

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A That sentence and the one after it indicates that he is talking about compound or multiple casualty-type procedures.

Q That is what he had been referring to when he was speaking of "degraded NSSS conditions"?

MR. KOLB: Would you read that question again.

(Question read)

MR. KOLB: Are you asking for the witness' reading of it at the time?

MR. MacDONALD: Yes.

A I don't remember.

Q The last sentence of that second paragraph begins with "In a similar fashion..."

Do you see that?

A Yes.

Q It reads: "In a similar fashion many other transients will end in severely degraded conditions, many of which are beyond the capabilities of our codes to simulate."

Did you understand that Mr. Tally was saying by "many other transietns" other transients which involved compound or multiple casualties?

A I don't remember this sentence either.

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Q When Mr. Tally used the phrase "beyond the capabilities of our codes to simulate" at the end of that sentence, what did you understand him to mean by "simulate"? That is a reference to simulate on a B&W simulator?

A No. Simulate is what these particular codes do.

Q Predictions?

A Predict.

Q So he was saying that in many of which are beyond the capability of our codes to predict, what was your understanding of what he was referring to with that phrase?

A Again, I don't remember that, reading that phrase.

Q But that is what you understood the term "simulate" to mean in relation to codes in the normal course of your work at B&W?

A Yes.

Q The next paragraph,, the first sentence begins, "Specific problem areas..."

Do you see that?

A Yes.

Q It says: "Specific problem areas are

1
2 the lack of modeling of ESFAS, FOGG, normal makeup
3 and letdown controls, natural circulation flow, two
4 phase RC flow, manual control of AFW, and extended
5 post-trip simulation."

6 What is ESFAS? Is that Emergency Safety
7 Features Actuation System?

8 A Engineered Safety Features Actuation System.

9 Q And FOGG is "feed only good generator"?

10 A Yes.

11 Q Did you understand Mr. Tally to be saying
12 by that sentence that some of the specific problem
13 areas or the lack of the computer capability to
14 predict these certain events that are set forth in
15 that sentence?

16 MR. KOLB: You are asking for his
17 recollection?

18 MR. MacDONALD: Yes.

19 MR. KOLB: Of his reading at the time?

20 MR. MacDONALD: His recollection.

21 A No.

22 Q What did you understand Mr. Tally to be
23 stating?

24 A This is the financial concerns that I had with
25 the use of these codes in the ATOG program. These

Kelly

are more control functions for the code to have to simulate.

What he is saying here is to me that if we want to consider things like engineered safety features actuation, it has to be done manually. In other words, the codes run in automatic and then the engineer has to predetermine the time to stop the code and make the change to the input and then restart the code.

The code will accurately predict these kinds of things. It is just that it has to be modeled manually by many charts and stops and that uses computer time and builds up the cost of running.

Q In other words, manually, there will have to be some extension of the codes as they, at the time in the middle of September 1979, existed?

A I didn't hear a verb.

Q Let me rephrase this one. Maybe we can get it by referring to the next sentence which says: "In any case, the problem will we will begin a particular sequence on PC in and after one or more key events the model's capabilities will be exceeded."

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Did you understand by that that Mr. Tally was saying that that particular code, Power Train, when run on a computer, would not be able to model any one of these specific areas above for a long enough period of time?

A No.

Q When you stated a moment ago that there would have to be manual work done on the codes, what did you mean by that in relation to how Mr. Tally used the phrase "will begin a particular sequence on Power Train and after one or more key events the model's capabilities will be exceeded"?

A Manually modeling the things in the first sentence is a different problem than what Mr. Tally is talking about in the second sentence.

Q What is the problem Mr. Tally is referring to in the second sentence?

A From what I remember, that is exceeding the capabilities of that particular code to even predict compound casualties.

Q So even if there was some manual operation of that code, it still would not be adequate to predict those compound casualties?

A The Power Train code, that's right.

Kelly

Q In the next sentence, Mr. Tally goes on to say: "The analyst will then be confronted with a difficult problem, especially since we have had little experience in predicting events during such off normal conditions."

What did you understand Mr. Tally to mean by the phrase "we have had little experience"? Was he referring to B&W?

A I don't remember what I thought at the time.

Q The third page of GPU Exhibit 158 is entitled "Inabilities of TRAP for Realistic Modeling for ATOG."

Do you know who prepared that page?

A I don't remember.

Q There are seven items on that particular page.

Were these all related to the inabilities of TRAP for realistic modeling for ATOG?

MR. KOLB: Take you time and read each one.

THE WITNESS: Would you read me the question again, please?

(Question read)

A I don't understand. Are you saying did they

1
2 turn out to be true inabilities or were they
3 overcome at one time or whether they were just
4 somebody's impression at the time?

5 Q At the time of the writing of these
6 memos, were these viewed as inabilities of TRAP
7 for realistic modeling for ATOG?

8 A At the time, yes.

9 Q These were inabilities that had existed
10 prior to September 1979?

11 MR. KOLB: Objection as to form.

12 You are assuming they are inabilities
13 and I am not sure that is what the witness
14 meant to say.

15 Q To the extent that they were considered
16 inabilities in September '79, were they considered
17 inabilities that existed from the TRAP code prior to
18 September 1979?

19 MR. KOLB: Objection as to form.

20 A I don't know.

21 Q Do you know who composed this list?

22 A I don't remember.

23 Q Did you ever speak about the items on
24 the list with Mr. Tally?

25 A I don't remember.

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Q Were there changes or alterations made in the TRAP code after September 1979 in order to deal with some of these considered inabilities?

MR. KOLB: Objection as to form.

A Yes.

Q Were the inabilities of the TRAP code which existed at the time, September 1979, corrected subsequently in the ATOG program?

MR. KOLB: Objection as to form.

A They didn't all turn out to be legitimate inabilities. That is why I am having difficulty answering the question.

Q The ones that did were corrected at some point in time after September of '79?

MR. KOLB: Objection as to form.

A I don't remember if they were all corrected.

Q Do you remember whether some were corrected?

A Yes.

Q Which ones were corrected?

A I know that No. 7, the pressurizer model was changed to a nonequilibrium model.

Q Do you know of any other inabilities stated on that page that were corrected after

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2 September '79?

3 MR. KOLB: Objection as to form.

4 A I don't remember any more that turned out to
5 be real inabilities.

6 MR. MacDONALD: I would like to mark as
7 GPU Exhibit 159 for identification a copy of
8 a memo from J. J. Kelly to R. B. Davis, dated
9 October 15, 1979.

10 (Copy of a memo dated October 15, 1979
11 from J. J. Kelly to R. B. Davis was marked
12 GPU Exhibit 159 for identification as of this
13 date.)

14 BY MR. MacDONALD:

15 Q Is GPU Exhibit 159 for identification a
16 copy of a memo that you sent to Mr. Davis in or
17 about the middle of October 1979?

18 A Yes.

19 Q Is the subject matter of this memo
20 "ATOG - Analytical Techniques"?

21 A Yes.

22 Q What did you mean by the phrase
23 "Analytical Techniques"? Was that to relate to the
24 code?

25 A Yes, the methods we would use to analyze.

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2 Q The first page in item 2, you say,
3 "The particular inadequacy of the codes used, as they
4 relate to ATOG, are:

5 "A. Specific problem areas with Power
6 Train are lack of modeling of ESFAS, FOGG, normal
7 makeup and letdown controls, natural circulation
8 flow, two phase RC flow, manual control of AFW and
9 extended post trip simulation."

10 When you referred to "The particular
11 inadequacy of the codes" in the first line of that
12 No. 2, were you speaking of the problems of manual
13 extension of Power Train codes that you mentioned a
14 few moments ago?

15 A Well, it is more than that, because it also
16 includes the inability of the code to do some of
17 the simulation.

18 Q That is the inability of the Power
19 Train code to do some of the simulation in the events
20 that are mentioned in item A?

21 A Yes.

22 Q In item B on page 2, you state: "Specific
23 problem areas with TRAP are lack of modeling of
24 ICS logic or control functions, level control on
25 secondary system inventory and failure of the

1
2 pressurizer model to recover from solid water
3 conditions."

4 When you refer to "Specific problem
5 areas with TRAP," are you referring to the same
6 types of problems as you were with Power Train,
7 where you lacked the ability to do some of the
8 simulations?

9 A Again, it is both; sometimes you have to
10 manually input the logic and sometimes it is the
11 lack of simulation capability.

12 Q Can you tell which ones in item B
13 there was a lack of simulation capability to
14 perform?

15 A Pressurizer model ability to recover from
16 solid water conditions.

17 Q In item A, will you please point out
18 which ones there was an inability to simulate?

19 A Natural circulation flow, two phase RC flow,
20 and extended post-trip simulation.

21 Q By "simulation," you mean that the code
22 was not capable of predicting the entire sequence
23 of those particular events?

24 A Yes.

25 Q Were those inadequacies that existed as

Kelly

of the middle of October 1979 remedied in the ATCG program?

MR. KOLB: Objection as to form.

A How are you using inadequacies in this case?

Q In the sense that you used it in the phrase in the beginning of item 2, inadequacies?

A Some of them were corrected, yes.

Q Which ones were corrected?

A In paragraph B, an automatic level control on secondary inventory was developed for the TRAP code and the nonequilibrium pressurizer model was installed in the TRAP code.

MR. MacDONALD: I would like to mark for identification as GPU Exhibit 160 a memo from J. J. Kelly to R. L. Wright, dated October 19, 1979.

(Memo dated October 19, 1979 from J. J. Kelly to R. L. Wright was marked GPU Exhibit 160 for identification as of this date.)

BY MR. MacDONALD:

Q Is this a copy of a memo you wrote in or about the middle of October 1979 to Mr. R. L. Wright?

A Yes.

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Q What was Mr. Wright's position in
October of '79?

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A He was a Licensing Engineer.

5

Q Did he report directly to Mr. Taylor?

6

A I don't know.

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Q Would you look at the first sentence
of your memo of October 19th. It begins: "During
the process..."

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Do you see that?

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A Yes.

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Q "During the process of developing and
reviewing event trees for the ATOG Program, several
potential problems became apparent."

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What did you mean by the phrase
"developing and reviewing event trees for the ATOG
Program"?

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Let me put it another way: Were those
the event trees that were being worked on by the
participants in the ATOG program?

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A Yes.

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Q In the second sentence of that first
paragraph, you state: "This could be equipment
limitations with regard to safety or plant
reliability, potential operator errors, customer

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procedure limitations, etc."

The "This" that begins that second sentence refers back to the "several potential problems" that you mentioned in the first sentence?

A Yes.

Q And some of those potential problems you mentioned could be "equipment limitations with regard to safety or plant reliability."

What did you mean by that phrase?

If you are having trouble, let me try it another way. Were these potential problems that you were referencing in the second sentence of the first paragraph items that were being surfaced for the first time as a result of work being done by people participating in ATOG?

A We were discovering it for the first time.

Q By "We," you mean --

A The people in ATOG.

Q Who were the people involved in the ATOG program?

A At the time this was written?

Q Yes.

A That is the question?

Q Yes.

Kelly

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A Myself, Eric Swanson, Charlie Tally, Mark Newlin, Mike Knoll, Ken Vavrek, Bob Schomaker, Mark Liebmann, Bob Twilley, Frank Walters, Rob McAndrews.

 To my memory, they were the principal players.

Q Were there others who were involved in the ATOG program at other points in time?

A Yes.

Q Who were they?

A Phil Boylan, Bob Brownell, Ed Hiltunen, Randy Ellison, Tom Danials, Jeff Schwenn, Larry Wimmer, Bill Herwig, Brent Brooks, Ron Dorman, George Rambo, Dennis Newton, Dennis Napier, Ron Davis, Marlowe Horne, Phil Troy, Aleta.

MR. MacDONALD: Off the record.

(Discussion off the record.)

BY MR. MacDONALD:

Q Were some of these individuals involved prior to ATOG in the drafting of operating procedures at B&W?

MR. KOLB: When you say "operating procedures," are you referring to any single operating procedure or any group of them or

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just in general?

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MR. MacDONALD: Just in general.

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MR. KOLB: That still bothers me because what I want to find out is whether you are including in your question someone who might have worked on one or two procedures as opposed to working on all procedures. Some people would have a job of working on procedures as such, and then others might participate in some limited way, and I am looking to find out which it was.

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MR. MacDONALD: I am looking for the individuals in whose job responsibility it was to work on draft operating procedures at B&W.

A Bob Twilley, Frank Walters, Rob McAndrews, Ted Book, Marlowe Horne, Phil Troy.

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Q When you spoke a minute ago about these potential problems becoming apparent to the individuals who worked on ATOG for the first time, were you including those individuals, the ones you have just mentioned?

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A When I wrote this memo on October 19, 1979, all of those people I mentioned weren't involved in ATOG.

Kelly

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Q The ones that you just had mentioned, whose job responsibility it was to draft operating procedures, which ones of those were involved as of October '79?

A Bob Twilley, Frank Walters, Rob McAndrews.

Q Did you mean to include those three as people who it was new to that the potential problems had arisen because of the ATOG development of event trees?

MR. KOLB: Objection as to form.

Q When you said it was new to the participants in the ATOG program, were you referring also to those three individuals who were involved at this point in time?

A I don't remember.

Q But you do recall that you were referring to the participants in the ATOG program in October of 1979?

A The participants responsible for developing and reviewing the event trees, yes.

Q Which were?

A Charlie Tally, Mark Newlin, Mike Knoll, Ken Vavrek, Bob Schomaker, Mark Liebmann.

Q At the bottom of your memo of October

1
2 19, the last sentence states: "I would appreciate
3 a Licensing position in this area by the end of
4 October."

5 Why did you ask for a Licensing
6 position in this area?

7 A Can I read the whole memo?

8 Q Sure. I thought you already had; I'm
9 sorry.

10 (Pause in the proceedings.)

11 Q Was it because of the possibility that
12 potential problems be handled via the PSC route
13 that you wanted a Licensing position in the area?

14 A Yes, I was asking Licensing if they wanted it
15 as a position of Licensing that every one of these
16 start at the PSC.

17 Q Did you obtain a response from Licensing?

18 A Yes.

19 Q What was the substance of that response?

20 A The substance was if I had any doubts that it
21 may be a preliminary safety concern to go ahead and
22 submit it as a preliminary safety concern.

23 Q Attached to your memo are two pages under
24 the heading "ATOG Potential Design Questions - ANO."

25 Were these some of the potential

1
2 problems that were raised that you were referencing
3 in your October 19th memo --

4 A Yes.

5 Q -- that were being raised for the first
6 time to the participants in the developing and
7 reviewing of event trees in ATOG?

8 MR. KOLB: Would you read the question
9 again?

10 (Question read)

11 A They were being raised by the participants
12 for the first time, yes.

13 Q Did these all --

14 MR. KOLB: I would just like to insert
15 something. I think because of the witness'
16 use of inflection that there may be some lack
17 of clarity here. He is saying words with
18 emphasis, but when they are written down they
19 may not make the point, and I just think we
20 ought to be clear as to whether he is saying
21 in all of these questions that no one ever
22 raised these problems before, no one ever
23 thought of them before, or whether he is
24 saying that these individuals themselves hadn't
25 raised them or thought of them before.

Kelly

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MR. MacDONALD: Fine, I thought his testimony was fairly clear on that.

3

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MR. KOLB: I don't think anybody in the room has any trouble.

5

6

Am I right, you are talking about those individuals?

7

8

MR. MacDONALD: Let me ask the questions and deal with the answers that we have. I don't think there is any problem.

9

10

11

MR. KOLB: Do you agree with me, he is speaking only of individuals?

12

13

MR. MacDONALD: We have the testimony.

14

15

MR. KOLB: Mr. Kelly ought to explain. You and I understand because we are hearing the words with inflection, and the written record may not be as clear as it should be on what exactly he is referring to.

16

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MR. MacDONALD: I think the record is clear on it. If you have any problem with it, you are entitled to clear it up with questioning. I think at this point in time, we have the record and let's just go on. I don't see that there is any problem in understanding what Mr. Kelly said so far.

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MR. KOLB: We will come back and clarify it then if that is necessary, but it would be so simple to simply let him emphasize the point now so it is all here in one place.

If you prefer to do it the other way, that is your right.

BY MR. MacDONALD:

Q Were the numbered items on the second and third pages of GPU 160 treated as PSC's or, to use your terminology, "handled via the PSC route"?

A Not all of them.

Q Which ones were, if you can tell?

A I don't remember.

Q Some were and some were not?

A Yes.

Q Did you or any of the other people who were involved in developing and reviewing of event trees for the ATOG program speak to any of the other individuals participating in the program to discuss some of these potential problems that had become apparent to you with those individuals?

MR. KOLB: Objection as to form.

I don't think that is very well phrased. It could be unclear.

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THE WITNESS: Would you read it again,
please.

3

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Q Let me try and break it up for you.

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Did either yourself or the other members
of the ATOG program who were developing and reviewing
the event trees discuss these several potential
problems, as you referred to them in the second line
of your memo, with any of the other individuals
involved in the ATOG program?

11

A I don't remember.

12

13

Q Did anyone discuss them with Mr. Twilley
that you can recall?

14

A I don't remember.

15

Q With Mr. Walters?

16

A I don't remember.

17

18

19

20

MR. MacDONALD: I would like to mark
for identification as GPU Exhibit 161 a copy
of a memo from J. J. Kelly to Distribution,
dated August 21, 1979.

21

22

23

24

(Copy of a memo dated August 21, 1979
from J. J. Kelly to Distribution was marked
GPU Exhibit 161 for identification as of this
date.)

25

BY MR. MacDONALD:

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Q Is this a copy of a memo you wrote in or about August 21, 1979 in the regular course of business?

A Yes.

Q You see the sentence in the first paragraph, the third sentence, which begins: "Everyone involved..."?

A Yes.

Q The sentence reads: "Everyone involved agrees that clear, simple and concise operating guidelines are a major factor in future upgrading of plant availability and safety."

By "Everyone involved," were you referring to everyone involved in the ATOG program in this memo?

THE WITNESS: Would you repeat the question, please?

Q Were you referring by the term "Everyone involved" to the people at B&W who were participating in the ATOG program?

A No.

Q Who were you referring to?

A The people that I had been in contact with, utility representatives of the Nuclear Regulatory

Kelly

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Commission that we had had discussions about the
ATOG program.

3

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Q On the second page of your memo under
item III.D., do you see the sentence that begins
"Notwithstanding..."? III.D.

7

A Yes.

8

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Q The sentence reads: "Notwithstanding
the apparent formality of the above, the success of
this program will depend upon a great deal of
informal communication between Customer Service and
Engineering."

13

14

What did you mean by the phrase
"informal communication"?

15

16

A Telephone conversations and face-to-face
dialogue.

17

18

Q Was this something that you believed had
not existed prior to this time on an ongoing basis?

19

20

A No, I was just trying to reinforce and
encourage it, informal communication.

21

22

Q In order for the success, for the record?

A Excuse me?

23

24

Q In order for the success of the ATOG
program?

25

A Yes.

2

Q The second sentence reads: "Performance

3

Engineers are encouraged to establish close feedback

4

contacts with simulator instructors, guideline writers,

5

etc., through R. C. Twilley."

6

A I'm sorry, was there a question?

7

Q No, there was not a question.

8

Who were the Performance Engineers that

9

you were referring to there?

10

A You want them by names, that is what you are

11

asking?

12

Q No.

13

A They were the members of the Engineering

14

Department in the Abnormal Transient Guideline

15

Program.

16

Q And you wanted them to establish close

17

feedback contacts with simulator instructors,

18

guideline writers, et cetera.

19

Who was the "et cetera"?

20

MR. KOLB: Objection as to form.

21

Q What did you mean by the "et cetera"?

22

A I don't remember.

23

Q Were you a Performance Engineer at the

24

time in the Engineering Department?

25

A No, the term never worked out, "Performance

1
2 Engineer." The concept never worked out. We were
3 trying to start it with this, so no one was really,
4 by title, a Performance Engineer.

5 Q By function, was anybody then a
6 Performance Engineer prior to this time?

7 MR. KOLB: When you say "function," do
8 you mean as the function was intended to be?

9 MR. MacDONALD: Yes.

10 A No.

11 Q Prior to this time as an engineer in
12 the Plan Integration Unit, had you had any close
13 feedback contacts with simulator instructors during
14 the course of your employment at B&W?

15 A If it was necessary for the particular
16 assignment I was involved with, I would go and talk
17 to simulator instructors, yes.

18 Q So you had talked to them from time to
19 time?

20 A Yes.

21 Q Was it on a regular ongoing basis or
22 just as the needs dictated?

23 A Just as my assignments required, yes.

24 Q On page 4 under B, "Operating Guideline
25 Preparation Responsibilities," you will see item

Kelly

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No. 2, "Review Event Trees."

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A Yes.

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Q That reads: "Review Event Trees - The draft event trees produced by the Performance Engineers are to be reviewed by Customer Service (preferably simulator instructors)."

Was that objective ever accomplished at B&W?

A Yes.

Q Was it done preferably by simulator instructors?

A Yes.

Q Do you know whether or not prior to the time of ATOG draft operating procedures had been reviewed by simulator instructors?

A I don't recall.

Q In the course of speaking with other members involved in ATOG, did you come to find out that this was a new procedure instituted by the ATOG program?

A What is "this"? I'm sorry.

Q "This" would refer to the review of draft operating procedures by simulator instructors.

A Draft of event trees?

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Q Draft event trees.

4

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A Event trees were new to the ATOG program, so review of event trees by simulator instructors would be, yes.

7

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Q The question would be in terms of review of draft operating procedures by simulator instructors, did you have any discussion with other members of ATOG who told you that this would indeed be a new procedure?

12

13

14

15

MR. KOLB: I am not clear now. You say the question would be, but your question before wasn't as to operating procedures; it was as to event trees.

16

17

MR. MacDONALD: No, the question refers to --

18

19

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21

MR. KOLB: Which question, the new one?

MR. MacDONALD: This question right now refers to draft operating procedures and their review by simulator instructors.

22

BY MR. MacDONALD:

23

24

25

Q The question is whether or not in the course of conversations with members of the ATOG program, you determined whether or not prior to

Kelly

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ATOG there had been review of draft operating procedures by simulator instructors.

3

4

A I don't recall.

5

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Q In the first paragraph on page 4, the first sentence begins: "The bases..."

7

Do you see that?

8

A Yes.

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his plant."

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Was what you are explaining in those sentences of that paragraph a new development within the ATOG program?

22

A No.

23

24

25

Q Had you reviewed prior procedures, draft operating procedures, by B&W to see if they explained why certain events were taking place

2 during this transient?

3 A Yes.

4 Q Which procedures did you review?

5 A B&W Small Break Operating Guidelines, B&W
6 Inadequate Core Cooling Guidelines.

7 Q Both of those were prepared after the
8 time of the TMI-2 accident?

9 A Yes.

10 Q Did you review any procedures prepared
11 prior to the time of the TMI-2 accident?

12 A Had I ever reviewed any procedure --

13 Q In the course of attempting to draft
14 procedures that explained to the operator why
15 something happened during the transient.

16 A I don't remember.

17 Q Do you remember whether any of the
18 pre-TMI procedures explained to the operators why
19 certain events were taking place during the
20 transient?

21 A I don't remember any.

22 Q As you understood it, this was a
23 new development of the Small Break Operating
24 Guidelines, Inadequate Core Cooling Guidelines,
25 and ATOG to give this explanation to the operators?

Kelly

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A To write it down and provide it with the
3 procedure I believe it was new, but it may have been
4 given in other forms in the past.

5

Q But to your knowledge, not in the
6 procedure itself?

7

A Not in the procedure itself.

8

MR. MacDONALD: I would like to mark as
9 GPU Exhibit --

10

MR. KOLB: Off the record.

11

(Discussion off the record.)

12

MR. MacDONALD: I would like to mark as
13 GPU Exhibit 162 a document, Bates No. T10000,
14 entitled "Babcock and Wilcox Company
15 Development of Operating Guidelines for the
16 Abnormal Transient Operating Guidelines
17 Program."

18

(Document bearing Bates No. T10000
19 entitled "Babcock and Wilcox Company
20 Development of Operating Guidelines for the
21 Abnormal Transient Operating Guidelines
22 Program" was marked GPU Exhibit 162 for
23 identification as of this date.)

24

A O.K.

25

Q Have you ever seen a copy of GPU Exhibit

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162 before?

A I don't recall.

Q You don't recall preparing it or reviewing it or having any other input with regard to GPU Exhibit 162?

A I don't recognize it.

Q You have no idea who might have written it?

A I don't remember.

Q Do you remember how it found its way into your files?

MR. KOLB: Objection as to form.

A No.

MR. MacDONALD: I would like to mark as GPU Exhibit 163 a copy of a memo from J. J. Kelly to Distribution, dated December 21, 1979.

(Copy of a memo dated December 21, 1979 from J. J. Kelly to Distribution was marked GPU Exhibit 163 for identification as of this date.)

BY MR. MacDONALD:

Q Is this a copy of a memo you wrote on or about December 21, 1979 in the regular course of business?

2 A Yes.

3 Q On the first page under I.A., "Event
4 Trees," do you see the third sentence which begins:
5 "The engineers are also..."?

6 A Yes.

7 Q The sentence reads: "The engineers are
8 also reviewing their event trees against existing
9 data for reactor trips at B&W plants."

10 What existing data for reactor trips
11 at B&W plants were the engineers reviewing their
12 event trees against?

13 A Data that B&W had available on previous
14 reactor trips that operated.

15 Q Were those SPR's?

16 A Are you asking is that a possible source or
17 is that what they actually used?

18 Q No, is that one of the sources --

19 A Yes.

20 Q -- that you are referring to in the phrase
21 "existing data"?

22 A Yes.

23 Q What else were you referring to by the
24 phrase "existing data"?

25 A The Power Systems and Control Unit maintained

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descriptions of previous trips where they would have parameter transit; if the utility supplied them that, they could refer back to sequences of events and that type of thing.

Q Was this an attempt to bench mark the event trees against actual plant transients --

MR. KOLB: Objection to form.

Q -- to see whether or not they actually functioned as designed?

MR. KOLB: Objection as to form.

A Yes, it was an attempt to verify and build confidence in the methodology that he used to develop event trees.

Q Do you know whether or not this comparison of procedures had taken place prior to the ATOG program?

A I don't know.

Q Have you heard of the term "core cooling information display"?

A Yes.

Q Explain what that means.

A It was a term developed by the Customer Service Department members of the Abnormal Transient Operating Guideline Team to describe an earlier

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version of what eventually became -- developed into the ATOG display.

Q What was contained on the earlier version of the core cooling information display?

A I don't remember.

Q Is there anything in GPU Exhibit 163 that would help you identify what was on that display?

A Page 2 of GPU Exhibit 163 in paragraph Roman numeral two, "Guideline Development," refers to an Attachment 1. That Attachment 1 is an example of an earlier version of the core cooling information display.

Q What were the parameters that were displayed on that?

A Reactor coolant system pressure, steam generator pressure, steam generator temperature, reactor coolant system temperature.

Q And saturation was plotted also?

A Yes.

Q That was to be all in the same display?

A Yes.

Q What developed out of ATOG relating to such a display?

Kelly

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MR. KOLB: Would you read the question

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again?

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Q I will withdraw it and I will ask it

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this way: You said this core cooling information

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display was developed by people within Customer

7

Service.

8

Was there anything that was incorporated

9

in the ATOG program that was similar in any respect

10

to the core cooling information display?

11

A Yes.

12

Q What was that?

13

A As the ATOG program developed, more things were

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added to this Attachment 1.

15

Q What things were added to Attachment 1?

16

A Subcooled margin was added, a subcooled margin

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curve was added, an expected post-trip window was

18

added, reactor vessel riddle failure curves were

19

added, post-reactor trip target boxes were added,

20

a thermal shock curve was added, reactor coolant

21

pump, net positive suction curves were added, fuel pin

22

compression limit curves were added.

23

Q What was the reason that this was all

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combined together on one display?

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A What we wanted to provide the operator with,

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a convenient method of identifying the symptoms that we came up with as a result of the symptom-oriented approach developed by ATOG.

Q Such a display had not existed prior to the time it was developed by ATOG?

A Not to my knowledge.

Q Did the display contain the key parameters that an operator would need in functioning during a transient?

A It contains the parameters he needs to identify the basic symptoms we developed. He needs additional parameters that are not on this display in order to completely handle the transient.

Q On page 3 of GPU Exhibit 163 under Roman numeral three, "Program Interactions," in the fifth paragraph you see the sentence that begins with "Part II"?

A Yes.

Q That paragraph reads: "Part II of the guidelines is to be used for operator training and is a vital portion of the program."

What was Part II of the guidelines?

A Part II of the guidelines is the design basis and expected plant response for the transients that

Kelly

1
2 we studied and multiple failure combinations of
3 those transients.

4 Q That was the basis on which the
5 guidelines were prepared?

6 A Yes.

7 Q Who participated in the preparation
8 of Part II? Was that a function of the Engineering
9 Department?

10 A Yes.

11 Q Who was in charge of the preparation
12 of Part II?

13 A Eric Swanson.

14 Q The second sentence of that paragraph
15 reads: "It represents an order of magnitude
16 increase in the value of guidelines over our
17 traditional draft procedure approach."

18 When you used the phrase "our
19 traditional draft procedure approach," were you
20 talking about B&W's draft operating procedures
21 that were in existence prior to the time of the
22 development of ATOG?

23 A Yes.

24 Q And how did the development of the
25 Part II guidelines represent an order of magnitude

2 increase in the value of the guidelines over those
3 prior draft operating procedures?

4 A In my mind, it gathered up into one spot all
5 the information the operator would need to
6 explain to him why he was doing the steps that
7 the procedural portion of the guidelines were
8 outlining.

9 Q That hadn't previously been gathered
10 together by the traditional draft procedure
11 approach?

12 MR. KOLB: When you say "gathered
13 together," do you mean in the form that ATOG
14 gathered it together?

15 MR. MacDONALD: That he was speaking of.

16 A I was using "gather together" as written and
17 attached to the portion.

18 To my knowledge, the traditional approach
19 to draft procedure development did not do that.

20 Q How did the traditional approach to
21 draft procedure deal with that backup?

22 A Operators would come to B&W for simulator
23 training and classroom instruction on casualty
24 controls and the reason steps were taken or
25 developed during that portion of the training.

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Of course, the utility's training department was always free to call B&W and ask any questions they had on why they were taking particular steps.

Q But it wasn't included as a portion of the draft written procedures?

A Not that I remember, no.

Q Were you involved in the drafting of the Inadequate Core Cooling Operator Guidelines?

A No.

Q Did you review any part of the Inadequate Core Cooling Operator Guidelines after they were created?

A Not in an official review capacity. I may have read them.

Q They were incorporated, were they not, in the ATOG program?

A Oh, yes, yes.

Q Who was in charge of creating the Inadequate Core Cooling Operator Guidelines?

A The Project Engineer was Blair Fairbrother.

Q What section or unit was he in?

A At the time, he was in Plant Integration.

Q Did he report to you in Plant

2 Integration at that time?

3 A No.

4 Q Who did he report to?

5 A Mr. Karrasch.

6 Q What was his title, if he had one?

7 A I don't recall.

8 Q What is your understanding of why the
9 Inadequate Core Cooling Operator Guidelines were
10 created?

11 A They were required by new regulation 0578
12 issued by the Nuclear Regulatory Commission.

13 Q What was included in those guidelines?

14 A What was the technical content? I don't
15 understand.

16 Q The basic substance of what the
17 guidelines spoke of.

18 A They tell the operator how to recognize
19 inadequate core cooling, and they give him
20 instructions on how to restore normal plant conditions
21 from that state.

22 Q It is a recognition through the use of
23 in-core thermocouples?

24 A Yes.

25 Q These were new guidelines created by

Kelly

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B&W after the TMI-2 accident, is that correct?

3

A Yes.

4

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Q Prior to the time of the TMI-2 accident, what were the purposes for which in-core thermocouples were used?

7

8

Let me back up a little bit. You were involved in startup tests, is that correct?

9

A Yes.

10

11

Q Are in-core thermocouples used for startup testing?

12

A Yes.

13

14

Q In what way?

A I don't remember.

15

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Q Were procedures created by the Inadequate Core Cooling Operator Guidelines for the use of in-core thermocouples to determine whether or not there was a sufficient level of cooling in the reactor core?

20

A I don't know.

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Q Did you ever review the procedures or read the procedures that were created for the use of in-core thermocouples in the Inadequate Core Cooling Operator Guidelines?

A No.

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Q You testified yesterday -- I am not asking you this to confirm your testimony; I will put the question to you again -- that there were only two instances that you knew of where the rupture disc on the drain tank had blown during a loss of coolant accident and that was at Oconee and Davis-Besse, is that correct?

A They were the only two instances that I can remember where the quench tank rupture disc had blown, yes.

Q On the day of the TMI-2 accident when you were informed that the quench tank rupture disc had blown, did it occur to you at that point in time that the plant had undergone a loss of coolant accident?

A I don't remember being informed on the day of the accident that the quench tank rupture disc had blown.

Q When you were informed that the quench tank rupture disc had blown, did you, at that point in time, identify that the plant had undergone a loss of coolant action?

A Yes.

Q Did you make that determination from

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the fact that the quench tank rupture disc had
blown?

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A No.

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MR. MacDONALD: I don't have any
further questions at this point in time.

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MR. KOLB: I have a few myself.

EXAMINATION BY MR. KOLB:

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Q Mr. Kelly, do you recall that earlier
in your examination you were asked some questions
concerning whether the guidelines that you had
suggested and Mr. Dunn had suggested had, in
substance, been disseminated on or conveyed by B&W
to the operating utilities? Do you recall that
question?

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A Yes.

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Q I believe you were asked at one point
what you meant by "in substance" when you testified
concerning that subject.

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For context, could you tell us again
what you meant when you indicated that, if I recall
your testimony correctly, that the guidelines that
you and Mr. Dunn had proposed had not, in substance,
been conveyed to the operating utilities? Could
you tell us what you meant?

Kelly

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MR. MacDONALD: Are you asking him a new question now to confirm prior testimony?

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MR. KOLB: I am asking him to indicate

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again what he understood when he used the

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words "in substance" when he answered the

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question and, as I indicated, I think that to

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the extent that I am asking that question it

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is a repeat of a question that was asked

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earlier, and I am putting it to him for

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context.

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MR. MacDONALD: Could I hear the

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question?

14

(Question read)

15

MR. MacDONALD: I object to the form of

16

the question.

17

MR. KOLB: What is the basis for the

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objection?

19

MR. MacDONALD: Basically, I can't

20

understand whether you are asking him based

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on prior testimony or, in fact, you are asking

22

him a new question what he means by the phrase

23

"in substance" in the context of conveying

24

the ATOG guidelines to the customers.

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Why don't you just put the question and

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ask him whether or not that is, in fact, the case. You are asking him to go back --

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MR. KOLB: We are not talking about the ATOG guidelines. We are talking about the possibility that this information might have been conveyed in substance or not prior to the Three Mile Island accident; that is the testimony that he gave earlier.

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13

As far as whether this is a new question is concerned, this parallels a question he was asked earlier, but I am asking it anew and he is answering it today.

14

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MR. MacDONALD: Could you just state the question for the record so that we are clear?

16

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MR. KOLB: I think the request is clear and I am letting the witness answer in his own words.

19

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MR. MacDONALD: I don't think it is clear. Go ahead.

21

BY MR. KOLB:

22

23

Q Go ahead, Mr. Kelly, just tell us what you meant.

24

25

A What I meant by "in substance" was that the exact words or some very close variation of those

2 exact words of either my prescription or Mr.
3 Dunn's prescription were not transmitted to the
4 operating utilities prior to the Three Mile Island,
5 to my knowledge.

6 Q Did you mean by that testimony that no
7 information of that type had been previously
8 conveyed to the operators of the operating utilities?

9 MR. MacDONALD: I am going to object to
10 the form of the question. It is leading.

11 Q Go ahead, Mr. Kelly.

12 MR. MacDONALD: Can I hear it reread,
13 please?

14 (Question read)

15 MR. MacDONALD: My objection stands.

16 Q Go ahead, Mr. Kelly.

17 A No.

18 Q Could you tell us, in your own words,
19 what your understanding was as to whether
20 information of that type had been conveyed to
21 operators previously?

22 A I had talked to simulator instructors about
23 what they were teaching the operators from
24 operating plants, and they told me that they were
25 giving guidelines on variations of average

1
2 temperature control and reactor coolant system
3 pressure and pressurizer level.

4 My prescription, Part B of my
5 prescription, is essentially my attempt to write
6 down what I believed the simulator instructors were
7 already teaching.

8 Q Do you recall that earlier in your
9 testimony you were asked questions concerning the
10 procedures that B&W had sent to its operating
11 utilities and that, at one point, you were asked a
12 question as to whether or not those procedures might
13 in some respect be unnecessarily cumbersome? Do
14 you recall that series of questions?

15 A Yes.

16 MR. MacDONALD: I object to the extent
17 that you are trying to characterize questions
18 and answers.

19 If you want to go back and read the
20 question and the answer, fine, but I don't
21 know whether those words were used necessarily
22 in that question.

23 BY MR. KOLB:

24 Q Mr. Kelly, do you recall the question?

25 A Yes.

Kelly

1
2 Q When you responded to the prior question
3 or questions and gave testimony with respect to
4 whether or not any existing procedures might be
5 unnecessarily cumbersome, could you tell us in what
6 sense you used and understood the phrase
7 "unnecessarily cumbersome" and I ask you to tell us
8 in your own words.

9 MR. MacDONALD: I object again.

10 You are doing the same thing that you
11 admonished other people for doing in the
12 course of depositions and that is taking
13 phrases and words out of context and
14 mischaracterizing the prior testimony, but --
15 BY MR. KOLB:

16 Q Go ahead, Mr. Kelly.

17 A To me, if the operator is using event-oriented
18 procedures and has a casualty involving multiple
19 failures, he will find himself simultaneously using
20 two or three or more event-oriented procedures, and
21 he would be opening these procedures, if he used
22 them at all, and be trying to operate out of
23 several of these things at once.

24 I mean that that was physically awkward
25 or cumbersome to do it that way.

Kelly

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Q Did you mean he couldn't do it that

3

way?

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A No.

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MR. MacDONALD: Objection.

6

Q Mr. Kelly, this morning, Mr. MacDonald

7

showed you two documents, one of which was marked

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GPU 161 and one of which was marked GPU 163.

9

Let me just put those documents before

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you and ask if you recall being shown those

11

documents.

12

MR. MacDONALD: Off the record.

13

(Discussion off the record.)

14

A Yes, I recall seeing the documents.

15

Q In 161, which is a memo from you to

16

Distribution, Mr. MacDonald called your attention

17

to a sentence appearing on the first page, which

18

reads: "Everyone involved agrees that clear, simple

19

and concise operating guidelines are a major factor

20

in future upgrading of plant availability and safety."

21

Do you recall his calling your attention

22

to that sentence?

23

A Yes.

24

Q Do you recall that in 163, which is a

25

memo from you to Distribution, he called your

1
2 attention to a sentence which appears on page 3,
3 which reads: "Part II of the guidelines is to be
4 used for operator training and is a vital portion
5 of the program."

6 It is followed by the sentence, "It
7 represents an order of magnitude increase in the
8 value of guidelines over our traditional draft
9 procedure approach."

10 Do you recall his calling your attention
11 to those two sentences?

12 A Yes.

13 Q Mr. Kelly, what, again, is your position
14 in connection with the development of the ATOG
15 program?

16 A I am the Project Engineer Technical Leader.

17 Q And in that position, you are familiar
18 generally with the program, its development, its
19 progress?

20 MR. MacDONALD: I object to the form.

21 You don't have to lead the witness.

22 A Yes.

23 Q Now, sir, with the two documents that
24 I have referred you to and specifically with the
25 passages that I have mentioned in those documents,

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161 and 163, in mind, could you tell us generally what the purpose is behind ATOG in terms of trying to simplify procedures, in your own words?

A ATOG is an attempt to reformat existing procedures, to take the technical content available in existing procedures and reorganize it and represent it to the operator in as simple a form as can possibly technically be developed, certainly beyond anything that a qualified operator would need, with the intention that the guidelines reach the absolute minimum base level of simplicity that we could develop.

Q In 161, the sentence we have been looking at, says: "Everyone involved agrees that clear, simple and concise operating guidelines are a major factor in future upgrading of plant availability and safety."

In view of the testimony you just gave, does that sentence, as you wrote it, mean that the present guidelines, the pre-ATOG guidelines, are not either adequate or understandable?

MR. MacDONALD: I object to the form.

Q Mr. Kelly?

A I did not mean to imply that they were not

Kelly

adequate or understandable.

Q What did you mean, in your own words?

A That if we could find a simpler way of doing it, a clear and simple and concise operating guideline would be an improvement.

Q If you will look at the passage in Exhibit 163 that I called your attention to a moment ago, the one that reads: "Part II of the guidelines is to be used for operator training and is a vital portion of the program. It represents an order of magnitude increase in the value of guidelines over our traditional draft procedure approach."

Do you see that passage?

A Yes.

Q Did you mean by that passage that the current guidelines, the ones that are pre-ATOG guidelines, are not adequate or understandable?

MR. MacDONALD: I object to the form as leading.

A No. Again, the way that we were doing it, the operators were getting this training and why they should be taking appropriate steps during emergency procedures from other methods. What I wanted to do

Kelly

at ATOG was to gather all that information together and make it readily accessible to the operators.

Q Now, Mr. Kelly, you recall that you testified earlier in your examination concerning discussions with Mr. Dunn, Burt Dunn, in which you and Mr. Dunn discussed the subject of possible premature termination of high pressure injection.

Do you recall that testimony?

A Yes.

Q In what year did those conversations take place?

A 1977.

Q Do you recall how many there were?

A Two.

Q In your own words, would you characterize for us the degree of concern, if any, that Mr. Dunn exhibited to you during the two conversations?

MR. MacDONALD: Are you asking for what Mr. Dunn said to him?

MR. KOLB: Mr. Kelly's impression of Mr. Dunn's degree of concern based either on words that Mr. Dunn spoke, gestures or expressions or any means of communication that Mr. Dunn might have used.

Kelly

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MR. MacDONALD: I will object to that

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as on the grounds previously stated.

4

BY MR. KOLB:

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Q Go ahead, Mr. Kelly, characterize that,

6

if you would, in your own words and tell us the

7

basis for your view.

8

A After the debriefing in Training Room B when

9

I returned from investigating the Davis-Besse

10

transient, Mr. Dunn told me that he could develop

11

scenarios whereby the operators, they could get in

12

trouble by prematurely securing high pressure

13

injection. Those words were in a normal tone of

14

voice.

15

He did not appear to be agitated to me

16

at all. There was no sense of urgency that I could

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detect or any anxiety that I could detect in his

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words or any gestures that he made. It seemed like

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to me that he thought the matter ought to be

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addressed, but I saw no sense of urgency.

21

Similarly, when I talked to Mr. Dunn

22

later in 1977, after writing my November 1st memo

23

and only receiving a reply from Frank Walters,

24

when I talked to Burt Dunn that time and told him

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my results and asked him if he would do something

2 about it, again, he replied that yes, he would take
3 care of it, but I got no sense of urgency from him
4 or any indication that to me that he believed it
5 ought to be handled very promptly or with any kind
6 of excitement.

7 MR. KOLB: Do you have Exhibit 78?

8 MR. MacDONALD: Yes.

9 (Handing)

10 Q Mr. Kelly, I am placing before you a
11 document which has previously been marked as GPU
12 Exhibit 78. It is Mr. Dunn's memorandum of February
13 9, 1978 to Mr. Taylor.

14 Do you recall testifying earlier with
15 respect to this document?

16 A Yes.

17 Q Do you recall that at the end of your
18 second day of examination on this deposition, you
19 were asked questions concerning the last sentence
20 that appears in that memorandum?

21 A Yes.

22 Q The sentence reads: "I believe this is
23 a very serious matter and deserves our prompt
24 attention and correction."

25 Do you know, for context, can you tell

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Kelly

us again what your reaction was when you read that line in the memorandum?

A I believe it was an overstatement of the problem.

Q In your own words, would you tell us why you believed it was an overstatement?

A At the time I read this memo and the environment in which I read that memo, the following facts were already available to me in my mind.

Burt Dunn's concern, after my debriefing in the Training Room B meeting was, as I just recently testified, not urgent or anxious that I could detect.

I had studied the Davis-Besse transient and they did, in my opinion, terminate high pressure injection but with appropriate operator action nothing happened. No serious results or damage to the core occurred.

Similarly, I had the telephone conversation with Fred Faist where he told me about the October transient, 1977, at Davis-Besse where this time they stopped the actuation of high pressure injection, which I thought was inappropriate but, again, I had the fact that there was no serious

2 consequences from that and no core damage resulted,
3 so I had two examples of where I thought there was
4 misuse of the high pressure injection system, neither
5 of which led to any core damage or serious
6 consequences.

7 Additionally, I had talked to the
8 simulator instructors about what they were teaching
9 directly to the operators of the plants, and I was
10 convinced that we were teaching the proper thing at
11 that level. I knew from my nuclear service
12 experience that B&W developed and issued draft
13 guidelines that would in some form talk about, in
14 written words, how to terminate high pressure
15 injection.

16 I knew again from talking to Burt Dunn
17 about the results of my November 1st memo that he
18 did not -- even when he knew that I got no results
19 on mine, he still gave me no impression that he
20 was anxious or demanding a prompt reply. He said
21 that he would take care of it for me. Then now, it
22 is February of 1978, and Burt's memo shows up, and
23 with those things in the environment of why I was
24 reading it -- when I was reading it, it says, "I
25 believe this is a very serious matter and deserves

1
2 our prompt attention and correction" I read that
3 and said "Burt is just trying to increase his
4 probability of getting a response to his memo
5 because he knew that I didn't get one from mine."

6 Q Mr. Kelly, do you recall that also near
7 the end of your second day of your examination in
8 this litigation, you were asked questions about the
9 phrase "very serious matter," taken as a single
10 phrase? Do you recall that?

11 A Yes.

12 Q Do you recall that, in words or
13 substance, you responded to the questions about
14 that single phrase and indicated that taking that
15 single phrase you did agree with Mr. Dunn? Do you
16 recall that?

17 A Yes.

18 Q Now, when you said in substance, in
19 words or substance, that you agreed, what did you
20 mean?

21 MR. MacDONALD: Objection. I think you
22 are trying to testify as to what he meant.

23 Are you asking him what he knew?

24 MR. KOLB: Well, I disagree with you
25 actually, as to his prior testimony on this

1
2 particular phrase, in terms of whether he has
3 had a full opportunity to explain what he
4 meant, and I am asking him in his own words
5 to explain what he meant.

6 MR. MacDONALD: You asked him that
7 before.

8 MR. KOLB: Let's assume he was asked it
9 before. I am entitled to ask it again,
10 although I disagree with you whether he was
11 asked it before.

12 BY MR. KOLB:

13 Q Mr. Kelly, in your own words, what did
14 you mean?

15 A Taken as an insulated phrase in the abstract,
16 core uncovering leading to fuel damage is, of course,
17 a very serious matter. That is what I meant and
18 nothing more.

19 Q Do you recall that the words "prompt
20 attention" as a phrase were also the subject of
21 questioning?

22 A Yes.

23 Q Do you recall that you answered questions
24 on the second day of your examination indicating,
25 in substance, that looking at that phrase alone you

1
2 agreed with Mr. Dunn? Do you recall that?

3 A Yes.

4 Q In your own words, would you tell us
5 what you meant when you answered those questions?

6 A Again, taken in the abstract, anything that
7 has a reasonable probability of causing core
8 uncovering and serious core damage deserves prompt
9 attention and correction. That is what I meant,
10 nothing more.

11 Q Mr. Kelly, do you recall that you were
12 asked questions earlier in your examination
13 concerning your own training, simulated instruction,
14 and so forth at B&W?

15 A Yes.

16 Q Could you tell us, do you recall whether
17 you were trained as to saturation and/or opposite
18 trending? And by "opposite trending," I mean the
19 trending of pressurizer level and pressure in
20 different directions? Do you recall whether you were
21 trained on those subjects?

22 A No, I do not.

23 Q Are you able to say categorically that
24 you were not trained on those subjects?

25 A No, I cannot say that.

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Q Do you recall that you were asked questions about the day of the accident at Three Mile Island? I believe most of those questions came yesterday.

A Yes.

Q Could you tell us in your own words to what extent during the day of the accident you had access to the facts concerning the incident and to what extent, in general, you did not have access to facts, in your own words, Mr. Kelly?

MR. MacDONALD: I object to the form.

Are you asking him what he knew on the day of the accident when?

MR. KOLB: I think the question is clear, and we will let the witness explain in his own words.

A We had that limited briefing in the classroom beside the simulator in the morning, and then I was on the airplane and traveling essentially away from the entire situation for a series of hours until we arrived at Greg Schaedel's house in the afternoon of March 28th, and at that point we were receiving information from Greg that he was getting in a relay from Three Mile Island's Control Room, Lee

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Rogers and to Lynchburg and back and forth. That type of information from Greg, we were getting. I didn't know at the time that there was information going directly from the site or to Lynchburg or what other forms of communication were in progress.

Q At any point during the day of the accident, did you receive information as to how the accident had developed in the first place?

MR. MacDONALD: I object to the form.

Q Go ahead, Mr. Kelly.

A Again, we had the limited briefing by Don Hallman and Bill Spangler, and a briefing by Greg Schaedel as to the few things that he knew about what had happened, when we got to his house.

Most of the information we were receiving at Greg's house was on the current status of the plant and on the attempts to reach system stability to restart the reactor cooling pump, that type of thing.

Q In terms of the facts you received, did you, based on those facts or that information, as you viewed it at the time, stand in a position to draw conclusions as to how the accident had developed in the first instance?

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MR. MacDONALD: I object to the form.

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Q You are free to explain it in your own words what your state of mind was.

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MR. MacDONALD: You are leading the witness.

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MR. KOLB: The witness is free to answer in his own words as he has been consistently.

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Q Go ahead, Mr. Kelly, just tell us.

A I was sent there to find out the sequence of events and I wasn't getting enough information to make that kind of determination to what was going on.

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Q Before you left Lynchburg, did you receive any instructions from anyone at B&W as to whether conclusions should be drawn?

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A Mr. Hallman specifically said that because of the limited facts that we had that we should not speculate or attempt to draw any conclusion, that we should wait until we knew what was going on before we tried to form an opinion as to what had to be done at that point.

24

25

Q You have testified that you flew to the general area of the Three Mile Island accident

2 on the day of the accident, is that correct?

3 A Yes.

4 Q What was the purpose, as you understood
5 it, for your going to the site of the accident or
6 near the site?

7 A Bob Twilley, Bob Winks, and I were directed
8 to go to the site and develop the sequence of
9 events, that was our primary responsibility, and
10 assist Lee Rogers in any way we could with any
11 problems that he may have.

12 Q Was it your understanding that you were
13 actually to go to the site itself onto Three
14 Mile Island?

15 A Yes.

16 Q Were you allowed to do so?

17 A No.

18 Q What prevented you?

19 A To the best of my knowledge, Metropolitan
20 Edison was limiting site access that day.

21 Q Do you recall that this morning you
22 were asked questions concerning various computer
23 codes? Some of the names used were Power Train,
24 CONTEMPT, TRAP. Do you recall that testimony?

25 A Yes.

2

Q Do you recall you were asked various

3

questions as to possible inaccuracies or inabilities

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with respect to those codes?

5

A Yes.

6

Q Do you recall specifically as to Exhibit

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158 you were asked about the last page of that

8

exhibit, the exhibit being a memo from yourself to

9

Mr. Morgan? The exhibit, the third page, is

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entitled "Inabilities of TRAP for Realistic Modeling

11

for ATOG."

12

A Yes.

13

Q Just generally, Mr. Kelly, what were you

14

trying to accomplish as part of the ATOG program

15

in using these various codes?

16

MR. MacDONALD: I object to the form.

17

Q You can go ahead and answer, Mr. Kelly.

18

What was your objective?

19

A We were trying to use the codes to develop

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realistic parameter trends that we could use as

21

examples for the operator and also use to develop

22

the substance of the guidelines.

23

Q Had the codes themselves be developed

24

for other purposes?

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A Yes.

2

Q And when you were answering the

3

questions this morning concerning possible problems

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with these codes, inabilities, did you mean at any

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time to indicate that the codes were in any way

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inadequate for the other purposes that they had been

7

used for in the past?

8

MR. MacDONALD: I object to the form of

9

the question.

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It is leading; it is characterizing

11

testimony.

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MR. KOLB: We will let the witness

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answer and we will let him explain in his

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own words.

15

Q Mr. Kelly?

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MR. MacDONALD: I still have the

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objection.

18

A I did not mean to imply that they were in any

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way deficient for their intended design purposes.

20

Q Could you explain the prior purposes

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in general, the purposes you had in mind and the

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degree to which, if at all, the codes might be

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useful for one purpose and possibly not so useful

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for another purpose, just in your own words?

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MR. MacDONALD: I object to the form.

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Q Just tell us about it.

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A The TRAP code is a safety analysis code developed to verify the design of the nuclear steam supply system in response to severe overcooling accidents such as major steamline breaks in the secondary system. It is used in the licensing process of the B&W nuclear steam supply system.

In ATOG, I needed a transient code. TRAP was the closest code that fit my requirements. I was looking for a code that did not address licensing concerns but that I could put in nonsafety-related systems and I could put in operator actions and develop to the best of the code's ability realistic responses that could be used for operator examples of what he would really see if this ever happened, as opposed to the original function of the TRAP code which was to verify the design of the plant.

Q So again, they could be adequate for one purpose and they might have to be modified for another purpose, is that right?

MR. MacDONALD: I object to the form of the question.

A The TRAP code is accepted by the NRC, to my

Kelly

1
2 knowledge, to verify the design of the nuclear
3 steam supply system defined by B&W on all our
4 current operating plants.

5 Q As far as you are concerned, is it
6 adequate for that purpose?

7 A Yes.

8 Q I mentioned a moment ago, you were
9 asked specifically about particular codes and one
10 of them was Power Train, and you were asked
11 questions as to the adaptability of Power Train to
12 the ATOG program.

13 Could you just tell us, in your own
14 words, what has happened with respect to Power
15 Train and its use in the ATOG program?

16 A Power Train is a code used to predict the
17 plant's response while it is operating at power and
18 supplying electricity.

19 When we got into the abnormal transient
20 operating guideline development, we decided early
21 in the program that the key for the operator to
22 enter the abnormal transient operating guideline
23 was a reactor trip.

24 With that input, the behavior of the
25 plant prior to reactor trip became very unimportant

1
2 to us, and as a result, the ATOG program, as
3 actually run, had very little requirement for a
4 Power Train computer code; it was used to a very
5 limited extent.

6 Q Do you recall being shown Exhibit 160,
7 GPU Exhibit 160, this morning?

8 A Yes.

9 Q Do you recall questions concerning the
10 discovery of problems by members of the ATOG working
11 group?

12 A Yes.

13 Q Just so the record is clear, would you
14 tell us, in your own words, did you mean to say
15 earlier -- this goes back to the point I asked Mr.
16 MacDonald to clarify earlier -- did you mean to say
17 earlier that the problems that you mentioned were
18 being discovered for the first time by people in the
19 ATOG group or did you mean to extend it beyond that
20 and indicate that the problems were being discovered
21 for the first time by anyone at Babcock & Wilcox?

22 MR. MacDONALD: I object to the form.

23 Why don't you just ask him what he
24 meant instead of suggesting answers to the
25 witness as you have been doing throughout the

Kelly

examination.

Go ahead.

MR. KOLB: This goes back to the clarification I asked for earlier.

BY MR. KOLB:

Q Go ahead and answer the question, Mr. Kelly. Just answer the question first.

A The problems outlined in Exhibit 160 were identified by members of the ATOG working team. I don't know if they were identified by anybody else in the B&W organization or not prior to that time.

MR. KOLB: I don't have any additional questions at this time. Thank you.

BY MR. MacDONALD:

Q Let me just follow up on a few things you had mentioned previously in your answers to Mr. Kolb's questions.

In your discussions with simulator instructors in 1977 regarding B&W training on HPI, did you discuss specifically with any of those instructors which utilities they were teaching?

MR. KOLB: At that particular moment?

MR. MacDONALD: At that time in 1977.

A I remember them saying that they were teaching

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Davis-Besse.

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Let me qualify that. I don't mean that day. I meant in the process of the normal business.

6

7

Q Was there anybody else that they mentioned that they were teaching specifically?

8

A Not that I recall.

9

10

11

Q Did you ask any of the instructors whether they had been specifically teaching operators from Duke regarding the HPI?

12

A I don't recall.

13

14

Q Did you ask them specifically whether they had been teaching operators from Met Ed?

15

A Not that I recall.

16

17

18

Q Did you specifically ask them whether they had been teaching operators from Florida Power Corporation?

19

A Not that I recall.

20

21

Q Or any other utility that operates B&W nuclear plants specifically?

22

A Not that I recall.

23

24

25

Q Your conversations with Mr. Dunn in 1977 were conversations prior to your receipt of the Dunn memoranda, is that correct?

2 A Yes.

3 Q Did you testify earlier -- and I will
4 ask you again -- that you considered Mr. Dunn the
5 foremost expert at B&W in the functioning of the
6 ECCS systems, isn't that correct?

7 A Yes.

8 Q And that he had more knowledge regarding
9 those systems and their proper functioning than
10 anyone else at B&W?

11 A In my opinion, yes.

12 Q You also stated a short while ago, in
13 response to Mr. Kolb's questioning about your ideas
14 on the last sentence of GPU Exhibit 78, specifically
15 the phrase "very serious matter and deserves our
16 prompt attention and correction," in the abstract
17 as to what they meant.

18 Do you recall testifying as to that?

19 A Yes.

20 Q Mr. Dunn, however, in his February 9,
21 1978 memo was not speaking of an abstract issue,
22 was he? If you are having trouble, let me do this.

23 In the second paragraph of Mr. Dunn's
24 memo of February 9th, the last sentence, it says:
25 "Had this event occurred in a reactor at full power

2 with other than insignificant burnup it is quite
3 possible, perhaps probable, that core uncover
4 and possible fuel damage would have resulted."

5 Davis-Besse at that time of the
6 September 24, 1977 transient was not operating at
7 full power, was it?

8 A It was not.

9 Q It was operating at somewhere around 9
10 percent power?

11 A Yes.

12 Q Did you understand by Mr. Dunn's
13 statement that I have just read that he was relating
14 his concern that if the event had occurred at
15 Davis-Besse, namely HPI termination prematurely in
16 a plant at full power, that it was quite possible,
17 perhaps probable, that core uncover and possible
18 fuel damage would have resulted?

19 A I don't remember thinking that, no.

20 Q You don't remember coming to that
21 understanding when you read that sentence, "Had
22 this event occurred in a reactor at full power
23 with other than insignificant burnup it is quite
24 possible, perhaps probable, that core uncover
25 and possible fuel damage would have resulted"?

2 A No.

3 Q That did not convey to you at the time
4 you read that that there was a serious concern of
5 Mr. Dunn's that if the events that had occurred at
6 Davis-Besse occurred at a plant at full power that
7 you could have possible core uncover and fuel
8 damage?

9 A No, for the reasons that I testified with
10 Mr. Kolb asking the questions, I didn't think he
11 was meaning what he said.

12 Q You did not think that when Mr. Dunn
13 said that had the event occurred at full power with
14 other than insignificant burnup it was quite
15 possible, perhaps probable, that the core uncover
16 and possible fuel damage would have resulted? You
17 did not believe that as it was stated by Mr. Dunn
18 as Manager of ECCS?

19 A That's right, I thought he was overstating
20 it.

21 Q So you didn't believe that possible
22 core uncover or fuel damage might occur if the
23 plant at full power had undergone a similar
24 transient and operators reacted in the same way as
25 at Davis-Besse?

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MR. KOLB: Would you read the question

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back?

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(Question read)

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A No, I don't even believe that today. If they had shut the core block valve in ten minutes at TMI-2 as they did at Davis-Besse, I don't think they would have had core damage.

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Q Would you have any reason to doubt the

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ability of Mr. Dunn to come to his conclusion in

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the last sentence of that second paragraph based on

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his expertise in ECCS systems?

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A I am having some trouble understanding whether you mean did I believe that when I read this or do I believe that there are some circumstances that Burt Dunn could envision where this would happen.

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Q Did you have any reason at the time

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you read this to doubt what Mr. Dunn was saying in

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light of his knowledge and expertise in ECCS systems

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at B&W?

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THE WITNESS: Would you read that again,

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please?

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(Question read)

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A Yes. I thought he was overstating it for the reasons that I have already given you.

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Q But you had no reason to doubt it was his ability and expertise he could come to such conclusion, did you?

MR. KOIB: I am afraid I don't understand what you mean by that question, Mr. MacDonald.

Q You never spoke to Mr. Dunn after receipt of this February memo in 1978 up to the time of the TMI-2 accident regarding what he had meant by the terms he used in his February memo?

A I never remember speaking with him about that, that's right.

Q You never once questioned him to see whether or not he believed he was overstating the matter?

A No.

Q Did you ever ask anybody else at B&W that they thought that Mr. Dunn was overstating the matter prior to the TMI-2 accident?

A No, not that I remember.

Q And despite the fact that Mr. Dunn mentions possible, perhaps probable, core uncovering and possible fuel damage, you yourself never followed up on Mr. Dunn's memoranda or any of the

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2 issues raised in his memoranda prior to the time
3 of the TMI-2 accident?

4 A Not that I remember.

5 Q You said you were in charge of the
6 technical background of the technical format for
7 the ATOG program?

8 MR. KOLB: Objection as to form.

9 Q Was that technical background material
10 prepared for Part II of the ATOG program available
11 within B&W prior to the time of the TMI-2 accident?

12 A Most of it was, yes.

13 Q Can you recall what portions of it
14 that were not?

15 A Yes.

16 Q Which portions were those?

17 A What I meant was that we derived specific
18 examples from running the computer codes and from
19 developing of event trees insofar as they were used
20 as examples in Part II, the Training Manual, that
21 information was not available.

22 Q But the technical information was
23 available?

24 A We reformatted a lot of it, but the technical
25 information was there, yes.

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Q Did Customer Services prior to the time of the TMI-2 accident have access to that technical information?

MR. KOLB: What do you mean by "access"?

MR. MacDONALD: Access in the sense that they could look at it, review it, read it.

A Yes.

Q Do you know whether or not they did, indeed, look at it, review it, read it prior to the time of the TMI-2 accident?

A I don't know that, no.

Q Prior to the time of the TMI-2 accident, the operators in the control rooms at B&W nuclear plants did not have access to procedures that had been developed by ATOG which dealt with event trees, did they?

A Did you say prior to the TMI-2?

Q Yes.

A Event trees were created after TMI-2.

Q So despite whatever training utility operators may have received from B&W, ATOG-type guidelines, as developed after the TMI-2 accident, were not available to those utilities operators in their control rooms prior to the time of the TMI-2

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accident, is that correct?

MR. KOLB: When you say "ATOG-type,"
what do you mean? Do you mean ATOG guidelines
as such?

MR. MacDONALD: We are not talking about
the specific ATOG guidelines obviously. We
are talking about the formatted ATOG
guidelines that they dealt with symptom-oriented
approaches and with respect to event trees.
That is what we have been talking about for
two days and that is the question to Mr. Kelly.
A To my knowledge, symptom-oriented procedures
were not available prior to TMI-2.

Q To the operators of B&W nuclear
reactors?

A Yes.

Q Nor were event tree-type procedures
available?

A Yes; correct.

Q So, in other words, during a transient,
an operator at a B&W nuclear operating plant, prior
to the time of the TMI-2 accident, would not have
access to the symptom-oriented guidelines or
event tree guidelines developed by B&W in the ATOG

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program?

A Prior to the ATOG program development, that's right.

Q On the day of the accident, the initial briefing that you received lasted for approximately how long?

A 30 to 40 minutes.

Q And during that time, there were various plant parameters that were recounted to people in the room by Mr. Spangler and Mr. Hallman?

A Plant status as they knew it was reviewed, yes.

Q And there were some of those parameters which you could recall hearing and some which you did not remember whether you heard or not, correct?

A Correct.

Q If someone had a set of notes on which those parameters being relayed by Mr. Hallman and Mr. Spangler were written down, do you believe that they would accurately reflect what you were being told that morning by Mr. Hallman and Mr. Spangler in terms of the parameters that were being told --

MR. KOLB: Please read the question again.

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(Question read)

MR. KOLB: I object as to form.

I think the question is unclear. Also, I think that it is an imposition on this witness to ask him questions about what somebody might have written about an event like that.

I think if you want to ask him what he knows about the parameters or what he remembers or if you want to show him notes that, in fact, were written, that would be O.K., but as far as the question goes you are really just asking him to speculate.

MR. MacDONALD: I think we have asked questions on what parameters he can recall. The only -- I will withdraw that question.

BY MR. MacDONALD:

Q I believe you testified you have not seen a set of notes that was taken at that meeting in the morning given by Hallman and Spangler, correct?

A That's correct.

Q Do you know of anybody that did take notes there?

A Not that I can recall.

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Q When you arrived at Mr. Schaedel's house, he was receiving information during the course of the afternoon of 3/28 from Mr. Rogers in the Control Room at TMI, is that correct?

A Yes.

Q And Mr. Rogers had access to the instrumentation in the Control Room at TMI?

MR. KOLB: Are you asking if the witness in fact knows that?

MR. MacDONALD: What his understanding is.

A Yes.

Q So despite the fact that you were not allowed on the site at TMI, Mr. Rogers, who was a B&W employee, was on the site and was in the Control Room relaying information back to you and to others at Mr. Schaedel's home, is that correct?

A Correct.

Q You testified a while ago that Mr. Hallman told you before you left for TMI that you should not speculate or draw conclusions regarding what happened to be done at TMI, is that correct?

MR. KOLB: Are you asking him whether that was what he said in his prior testimony?

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MR. MacDONALD: No, I am asking him if

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that is correct.

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A I didn't mean to imply that he was talking directly to me. That was an instruction he gave to the whole group there with the information they had available at that time that we shouldn't be speculating and trying to draw conclusions.

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Q That was in the morning, right?

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A Yes.

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Q You obtained more information throughout the day, did you not, regarding the conditions at the TMI-2 site?

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A Throughout the day, I was getting information on the current status of the plant, yes.

15

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Q You had no instruction from Mr. Hallman not to formulate any ideas or thoughts in your own mind as to what was occurring that day, did you?

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MR. KOLB: At any time during the day?

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MR. MacDONALD: That is correct.

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MR. KOLB: Would you read the question

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back?

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(Question read)

24

A I don't remember that instruction.

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Q In other words, you weren't precluded

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from developing an idea that there was a loss of coolant accident under way on 3/28, 1979 by anything that Mr. Hallman told you, were you?

A I wasn't precluded from forming that opinion in my own mind, no.

Q Did you develop any new codes in the course of your work on ATOG for transient analysis that had not existed at B&W prior to the time of the ATOG work?

A Not that I remember, no.

Q Did you make modifications to codes that had already existed at B&W during the course of your ATOG work?

A Yes.

Q TRAP was one of the codes that you modified?

A Yes.

Q What other codes?

A I am assuming when you say me, you are not talking about me, you are talking about --

Q I am talking about the ATOG program as a whole.

A I don't recall modifying any other code aside from TRAP.

Kelly

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Q Prior to the work performed by ATOG on the computer codes, those codes were based on analyzing licensing or design basis accidents, is that correct?

A Yes.

Q They were not geared, were they, to analyze the various multiple casualties and types of symptom-oriented procedures that were being developed by the ATOG program, is that correct?

MR. KOLB: Would you read the question back?

(Question read)

MR. KOLB: I am going to object to the form because I am not sure what you mean by "geared."

MR. MacDONALD: I think it is a fairly straightforward question.

BY MR. MacDONALD:

Q They were not able as they currently existed?

A The TRAP code had that pressurizer model limitation on being able to predict realistic responses that I talked about in earlier testimony. But, other than that, it was capable of analyzing

Kelly

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2 a transient. It was awkward, though, and financially
3 expensive.

4 Q And your work with ATOG was to make it
5 easier for those codes to be adapted to transient
6 analysis rather than design-based licensing-type
7 accidents?

8 A I took that code and modified it to fit my
9 purposes, yes.

10 Q Which was not the purposes of
11 design-basis licensing accidents, but was the
12 purpose of transient analysis?

13 A Yes.

14 Q And that hadn't been done prior to the
15 time of the ATOG program, is that correct?

16 A Not to my knowledge.

17 MR. MacDONALD: I have no further questions.

18 MR. KOLB: We are done.

19 (Time noted: 1:00 p.m.)

20 JOSEPH J. KELLY, JR.

21 Subscribed and sworn to
22 before me this day
23 of , 1981.

24

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CERTIFICATE

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

I, WALTER SHAPIRO, CSR, a Notary
Public of the State of New York, do hereby
certify that the continued deposition of
JOSEPH J. KELLY, JR. was taken before
me on Thursday, May 7, 1981 consisting
of pages 455 through 553;

I further certify that the witness had
been previously sworn and that the within
transcript is a true record of said testimony;

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

IN WITNESS WHEREOF, I have hereunto set my
hand this 15TH day of May, 1981.

Walter Shapiro
WALTER SHAPIRO, CSR

I N D E X

WITNESS	PAGE
Joseph J. Kelly	455

EXHIBITS

GPU		FOR IDENT.
158	Three-page document consisting of a September 28, 1979 memorandum from J. J. Kelly to C. D. Morgan, a September 14, 1979 memo from Tally to Kelly, and a third page.	455
159	Copy of a memo dated October 15, 1979 from J. J. Kelly to R. B. Davis.	475
160	Memo dated October 19, 1979 from J. J. Kelly to R. L. Wright.	478
161	Copy of a memo dated August 21, 1979 from J. J. Kelly to Distribution.	488
162	Document bearing Bates No. T10000 entitled "Babcock and Wilcox Company Development of Operating Guidelines for the Abnormal Transient Operating Guidelines Program."	497
163	Copy of a memo dated December 21, 1979 from J. J. Kelly to Distribution.	498