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PRESIDENT'S COMMISSION ON THE  
ACCIDENT AT THREE MILE ISLAND

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DEPOSITION of METROPOLITAN EDISON COMPANY by  
GEORGE J. TROFFER, held at Three Mile Island  
Nuclear Generating Station, Harrisburg, Pennsylvania,  
on the 4th day of August 1979, commencing at 9:00 a.m.,  
before Stanley Rudbarg, a Certified Shorthand Reporter  
and Notary Public of the State of New York.

**BENJAMIN REPORTING SERVICE**  
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A P P E A R A N C E S :

METROPOLITAN EDISON COMPANY:

SHAW, PITTMAN, POTTS & TROWBRIDGE, ESQS.  
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BY: ALAN R. YUSPEH, ESQ.  
Of Counsel

PRESIDENT'S COMMISSION ON THREE MILE ISLAND:

WINTHROP ROCKWELL, ESQ.  
Associate Chief Counsel

JOAN GOLDFRANK, ESQ.  
Associate Chief Counsel

ALSO PRESENT:

LOUIS F. COOPER

oOo

G E O R G E J. T R O F F E R,

having been first duly sworn by Mr. Rockwell,  
testified as follows:

(Resume of George J. Troffer was  
marked Troffer Deposition Exhibit 93 for  
identification, as of this date.)

EXAMINATION BY

MR. ROCKWELL:

BENJAMIN REPORTING SERVICE

2 Q State your full name.

3 A George J. Troffer.

4 Q Your current employer?

5 A Metropolitan Edison.

6 Q And your current position with Met Edison?

7 A Manager, Generation Quality Assurance.

8 Q And your current business address?

9 A 3800 Pottsville Pike, Reading, Pennsylvania.

10 Q Mr. Troffer, have you brought with you  
11 today a resume which we have marked as Troffer  
12 Deposition Exhibit 9??

13 A I have.

14 Q And did you prepare that resume?

15 A Yes, I did.

16 Q Is it current and up-to-date?

17 A Yes, correct.

18 Q Do I correctly understand from your resume  
19 that you were in the Navy essentially starting in 1948  
20 and continuing until 1975?

21 A 1945 through 1977. I joined Met Ed in '77, so  
22 I was in the Navy from approximately '45 to approximately  
23 '77.

24 Q And you have listed your present position  
25 with Met Ed and then you have listed five categories

1

2 under that.

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Are those intended to denote areas of responsibility?

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A Yes, those are specific sections within my department.

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Q Do those five categories on your resume -- quality assurance, licensing, quality control, security and training, represent all of the sections of your department?

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A Correct.

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Q Would you run down each of those and give me a brief description of what the scope of responsibilities of each of those sections are and who heads it up at present.

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A Quality Assurance has six engineers under Ron Prabhakar. They conduct the audits of the Generation Division and review all the safety-related material requisitions, review the engineering change modifications and conducted vendor-supplier audit.

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Then Licensing under John Hilbish has approximately 14 licensing engineers. This relates to both fossil and nuclear plants.

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Q Would that be true also of the quality assurance?

A Yes. We were installing the quality assurance

2 program in the fossil plants. Then for Licensing  
3 they were primarily cognizant of our license, our  
4 technical specifications and compliance with them.

5 They developed all the correspondence for NRC and  
6 other government agencies, perhaps 30 different  
7 agencies, with respect to licensing of fossil and  
8 nuclear plants, environmental matters, licensee event  
9 reports, prepared a weekly news release for Generation,  
10 followed up with the site on all commitments that we  
11 had made to all government agencies in which we  
12 promised to get a certain thing done by a certain date,  
13 where the engineers in Licensing would have to start  
14 early in advance to see that steps were taken to meet  
15 those commitments.

16 Quality Control was positioned entirely at  
17 Three Mile Island.

18 Q Let me go back and ask you one question  
19 about licensing.

20 Do I understand from what you said that  
21 the licensing is essentially governmental relations  
22 in the sense that it goes beyond the NRC and deals  
23 with a variety of other federal agencies?

24 A Correct.

25 Q Or state agencies, as the case may be?

1  
2 A Yes. We dealt with all regulatory agencies that  
3 had anything to do with the government.

4 Q Okay.

5 A Quality Control is under Terry Mackey. He is an  
6 engineer and he has working for him one engineer and  
7 three clerical and about 13 quality control specialists  
8 and assistants. They were the inspectors on site.  
9 They surveyed various operations and maintenance.  
10 They performed reseat inspection of material, non-  
11 destructive examination of wells. They participated  
12 in audits, conduct of audits.

13 Security at Three Mile Island is under Jim Stacey,  
14 and at the time of the accident there were approximately 4  
15 site protection officers, six sergeants and roughly  
16 22 contract guards.

17 Q Contract what?

18 A Guards. They perform only that as indicated by  
19 the title "security."

20 Training at Three Mile Island up until 1978 was  
21 under Alexis Tsaggaris, who was at that time in Reading  
22 with me and headed up all of training in Generation,  
23 including that of fossil plants, corporate technical  
24 support staff and all Three Mile Island training  
25 functions.

1  
2 He left without relief to another job in October,  
3 leaving the physician, leaving the various training  
4 directors reporting directly to me.

5 Then in November, all training personnel started  
6 reporting to Dr. Stan Truskie, who is not in Generation,  
7 but was in the corporate staff, leaving only Dick  
8 Zechman at Three Mile Island reporting to me with his  
9 six instructors.

10 They performed primarily regulatory safety-related  
11 licensing training here at TMI, plus some others, but  
12 primarily to get people licensed and maintain their  
13 license.

14 Q Mr. Troffer, because of the air conditioning  
15 I am going to ask you to speak up a little bit. Who  
16 would have been in the training session under Mr. Tsaggari  
17 when he was there?

18 A Zechman.

19 Q So there is not a staff in Reading for the  
20 training section. Zechman, as I understand it, is here  
21 on the Island?

22 A Correct. So, I was without staff in Reading from  
23 October all the way.

24 Q With respect to Zechman?

25 A Yes, I talk directly with Zechman.

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Q Indicated that other training directors at your other stations began reporting to Mr. Truskie, was it?

A Yes.

Q Starting in November?

A Yes.

Q What was the reason for dividing the reporting responsibilities among the various training directors?

A It was a move to consolidate all training within the entire company under Truskie, with the exception of licensing training at TMI.

Q Why was that distinction made?

A Because it was felt, like the vice-president felt, that he had to be personally in charge and very much in control of the license training because of its importance to the operation of the plant.

Q The vice-president being?

A Jack Herbein.

Q Who is Mr. Truskie?

A Dr. Stan Truskie was under Dick Keim, Human Resources Director. I don't remember what Truskie's title was, but I think it was Director of Training for the company.



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Q Had he been Director of Training up until November of 1978?

A He had training function, but he only had a very small staff, two or three people.

In November, when the consolidation was accomplished he took my staff of at that time three personnel, plus the training responsibilities for the fossile plants.

Q And consolidated them?

A Yes.

Q When you say he took your staff, you mean he took the people who had been working for Mr. Tsaggaris?

A Yes. Christine Michaels -- there was three.

There were two engineers and an administrative clerk.

Then, of course, he also took the empty billets that Tsaggaris had left, and it was filled at about that time with Bob Businski.

So Truskie had a staff then and brought in another member, so then he had a staff of six and responsibility for all training except Zechman's.

Q Had there been two training departments up until the time that Mr. Tsaggaris left?

In other words, one training operation under Truskie ongoing?

A Yes, but it was very small. It was only a couple

1  
2 of people for the entire rest of the country.

3 Q What was Truskie doing with respect to  
4 training?

5 A Getting ready to take over. He had been in the  
6 company just a few months.

7 Q Oyster Creek No. 1 would also be part of  
8 the GPU System, is that correct?

9 A Yes.

10 Q Is that retained under your direct control?

11 A No. I have nothing to do with Oyster Creek,  
12 other than being -- nothing to do with Oyster Creek.

13 Q Would that now be under Mr. Truskie?

14 A No, that is a Jersey Central Company, and Truskie  
15 was in Met Ed only. The GPU has both Jersey Central  
16 and Met Ed, but Truskie is Met Ed only.

17 Q I guess I thought Mr. Truskie was with GPU.

18 A No, he is with Met Ed.

19 Q You were directly involved in the training  
20 program, I guess. During the period of time from the  
21 fall of '78 up to, let us say, the time of the accident,  
22 what kind of actual supervision were you able to do over  
23 the training program here at the Island?

24 A Primarily administrative in nature. I fought the  
25 good battle for budget and people. I helped delineate

1  
2 their duties with respect to the rest of the station  
3 here.

4 There was at all times a very considerable pull  
5 for their services in all areas. Everyone wanting  
6 more and more training, and we had to sort out the  
7 priorities.

8 Then I would come out to the staff meetings and  
9 participate and provide as much headquarters input into  
10 that as I could. But primarily the day-to-day operation,  
11 the billion little decisions were made by Dick Zechman  
12 out here, and we talked by phone -- Dick Zechman and I --  
13 about his alternatives.

14 Actually, Dick Zechman was so tied up in his own  
15 personal qualification that we had to have other people  
16 head up the organization.

17 Q Did you then start working with Mr. Beers?

18 A Marsh Beers, yes.

19 Q So during that period of time, would it  
20 be accurate to say that you were dealing primarily with  
21 the administrative side of the program?

22 A Yes. It was intended on 1 January to turn training,  
23 Zechman and his entire gang, over to Dave Limroth and  
24 I made all preparations for that, but then on 1 January,  
25 Jack Herbein told me that Limroth was too tied up

1  
2 learning health physics and that I should continue  
3 to operate.

4 I explained that in absentia I wasn't able to  
5 perform a very good job of detailed guidance that it  
6 really needed out here, and he thought it was still  
7 the lesser of two evils.

8 So I continued to administer the organization.

9 Q Who is Mr. Limroth?

10 A He is currently fully employed in Health Physics  
11 at TMI. That time, he was Superintendent of Administra-  
12 tion.

13 Q And the concept was that Zechman would  
14 start reporting to Limroth, but it never happened?

15 A Yes.

16 Q Has Mr. Limroth ever become involved with  
17 training since then?

18 A No.

19 Q During the time that Mr. Tsaggaris was  
20 working under your supervision and supervising training  
21 here at the Island, first of all, how long was that?

22 A It was since before I took over the job in  
23 October of 1977, but roughly two and a half years before  
24 that.

25 Q What kind of general guidance did you give

1  
2 to Mr. Tsaggaris with respect to supervising what you  
3 wanted him to do in the training program here at  
4 the Island?

5 A Mostly it was a matter of continuing what we  
6 already had going. The program was initially developed  
7 by Jim Seelinger six or seven years ago, and then  
8 Alex Tsaggaris took it over at the Island here. He  
9 had Zechman's job. Then he was promoted, that is he,  
10 Tsaggaris, was promoted to Corporate Textile Support  
11 staff in Reading, leaving Zechman in charge out here.

12 So the program had been under very careful develop-  
13 ment for a good six or seven years, and probably the  
14 biggest change that was made in the program during my  
15 tour of duty was to introduce the maintenance training  
16 of the Island.

17 Other than that, we kept applying the tried and  
18 true formulas and lessons and plans that had been  
19 previously developed.

20 Q Why did you implement maintenance training  
21 at the Island?

22 A There was a crying need for it expressly by the  
23 maintenance personnel here at the Island at all levels.  
24 It was pretty evident also that maintenance training  
25 was required.

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Q In what way was it evident? Can you give me the specifics?

A One, many of the maintenance personnel never had maintenance training of any sort. It was all learned while on the job, and I don't remember any details, but I was informed at the time of specific problems that arose as a result of lack of training.

It was pretty evident that the maintenance personnel were developing skills much as we saw at the fossil plant, in which they learned by rote, and performed as they were told, without a true understanding of what they were doing.

So we tried to increase their technical understanding of what they were doing.

Q What kind of background would maintenance people generally have? Would they have any nuclear background?

A Some did. Most of those that came from the Navy and there were a few people with mechanical experience hired in. Then a large number were taught here at mechanical schools.

Q What kind of workers did these tend to be, the people who would come in as technicians?

A You are not really asking the right guy. Dan

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Showlin could give you a much finer picture.

Q We have covered that.

A I couldn't give you very much on that.

Q When you implemented a maintenance training program, you did it through the System Training Department?

A Yes. The program was just barely under way, however. It was primarily a self-study program with a test to be administered, a prepared test to be administered by the supervisors, and we would provide the library of material that had previously been prepared by a contractor.

Q When you say it was just barely under way, you mean as of the time of the accident?

A Yes. We had just assembled the material, and it was not substantially under way at the time.

Q But you say that a library had been assembled by an outside contractor. Had the material, the self-study materials, been assembled by the outside contractor?

A Yes. We had the materials on board. I don't know how many of the people were actually involved in training at the time of the accident.

Q As the director or manager of Met Edison's Quality Assurance, did you have a liaison with GPU?

A Yes, but not very close. It was with Nick Kazanas,

1  
2 who is manager of Quality Assurance for GPU. They  
3 were just barely getting up to speed with respect  
4 to operation of Quality Assurance.

5 Their emphasis over the years had been new  
6 construction Quality Assurance, and they had only  
7 prepared a couple of procedures, which we had reviewed  
8 and disagreed with. That was about the extent of their  
9 involvement.

10 We obtained some assistance from them in vendor  
11 audits. I had help from GPU labs with respect to  
12 metalurgy, with problems at the fossil plant. I had  
13 assistance from GPU in the security area. Bob Rice  
14 was of considerable help with respect to relations with  
15 NRC and State police and other government agencies.

16 I was involved with their engineering and safety  
17 personnel with respect followup of a Williamsburg  
18 accident at a fossil plant and also a fossil plant  
19 elsewhere, where we took considerable energy and  
20 exercised considerable energy within that area so it  
21 wouldn't happen to us.

22 I had to deal with GPU based on that -- engineering,  
23 safety, laboratory -- that is about all from GPU.

24 Q To the extent that GPU was expanding its  
25 QA work into operation work supervision, as opposed to



1  
2 new construction, what kind of fit was contemplated  
3 between the Quality Assurance Department in an  
4 operating utility, such as Met Ed, yourself, and  
5 Quality Assurance Program or Department at GPU?

6 A Well, I think they were taking the initial  
7 steps toward eventual takeover of Quality Assurance  
8 probably four or five years down the stream.

9 Q And to centralize all QA in the holding  
10 company?

11 A Yes. This wasn't announced as a published  
12 position, but it was nevertheless known.

13 Q It was known?

14 A It was known to me and my boss, Jack Herbein.

15 Q Did you know what policy reasons may have  
16 underlain that objective?

17 A I believe Herman Dieckamp wanted more uniformity  
18 among the companies, and this was passed down through  
19 the ranks of GPU.

20 For example, he even wanted all our guards at  
21 both Oyster Creek and TMI in the same uniform. He  
22 wanted, in forms and methods of control of engineering,  
23 quality control, et cetera.

24 Q Did you see that as a fairly broad thrust  
25 objective across various departments of the company,

1  
2 of the operating companies, trying to bring this kind  
3 of uniformity through the medium of the GPU Service  
4 Corp.?

5 A I couldn't say for sure. It was just underway at  
6 the time of the accident.

7 Q It was your sense that it was an objective  
8 of Mr. Dieckamp?

9 A Yes, I sensed it was.

10 Q Did you ever hear him talk about it?

11 A No.

12 Q He was quoted by other people to you as  
13 having talked about it?

14 A Yes.

15 Q What I would like to do now is you to take  
16 me back through the development of the Generation Review  
17 Committee, and maybe you could tell me, first of all,  
18 conceptually -- I know you were involved in formulating  
19 the structure of the Generation Review Committee -- and  
20 if I recall correctly, you visited a power plant down  
21 in Florida to review their procedures.

22 But tell me conceptually what a Generation  
23 Review Committee does or what you thought it might do  
24 when you started looking at how to put it together.

25 A Conceptually, it was to provide technical backup

1  
2 for the Island's technical and engineering functions  
3 in accordance with our technical specifications.

4 The guidelines were laid out rather well in the  
5 technical specifications and in ANSI 18.7, plus I had  
6 a couple of trade journal articles on the subject,  
7 various phone calls. We already had a Generation  
8 Review Committee in operation for Unit 1, headed up  
9 by Dick Klingaman, which had been in operation for  
10 three or more years, I suppose, and then verbal  
11 direction from Jack Hurbein on what he wanted covered  
12 and the purpose of it.

13 We were to primarily review documentation from  
14 the Island for completeness, to see if there were  
15 things left undone with respect to licensee event  
16 reports, audit finding closeouts, change modification  
17 review.

18 We were to test all these documents with respect  
19 to unreviewed safety questions, compliance with tech  
20 specs, good engineering practice, safety. That is it.

21 Q Is the role of the GRC, the General Review  
22 Committee, as you described it, fundamentally a Quality  
23 Assurance role in your view?

24 A Fundamentally a safety role, with Quality Assurance  
25 being the method of assuring that safety.

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Q Quality assurance is the means to that  
end?

A Correct.

Q So, your quality assurance is a process?

A Yes, a discipline, a process.

Q Although you had a Generation Review Com-  
mittee in place and functioning under Mr. Klingaman  
at this time, apparently someone made a decision that  
it would be useful to look at other models?

A Well, our technical specifications for Unit 2  
read differently than those for Unit 1, and the  
Generation Review Committee had to be different than  
that from 1.

Q Could you describe to me the differences  
in the experiences between the GRC for Unit 1 and  
Unit 2?

A We reviewed more items in full committee than  
Unit 1 did. Unit 1's GRC review was conducted by  
individuals who reported their reviews to a secretary,  
who actually typed it all up and presented it in com-  
mittee, which would take a very short time to review  
the reviews, while we did more directly through docu-  
ments in full committee in GRC-2.

Q Did you have an understanding as to why

1  
2 the tech spec differed in that respect? Was that a  
3 difference in thinking that had occurred? Was it a  
4 requirement of the NRC?

5 A The tech specs for Unit 2 were developed to  
6 comply with NRC standard tech specs, while those for  
7 Unit 1 were separately developed, and there was very  
8 considerable differences between the two.

9 Q And you are indicating, therefore, that  
10 the difference in the approach or the process to be  
11 followed in the GRC was probably due to the NRC  
12 standard tech spec?

13 A Yes.

14 Q Rather than some other particular iso-  
15 lated reason?

16 A Primarily that is true.

17 Q And do you know, is the logic of that dif-  
18 ference, as illustrated by the standard tech specs,  
19 simply that they wanted a fuller, more comprehensive  
20 review?

21 A Those words weren't used in the tech spec, but  
22 the result is that.

23 Q What other differences, if any, can you  
24 recall in the tech specs that would require a dif-  
25 ferent structuring of the GRC?

1  
2 A The structure was fairly specific for Unit 2.  
3 With respect to the qualification of the personnel  
4 and how many would constitute a quorum, the procedural  
5 guidelines, I don't remember the differences very  
6 clearly between the two.

7 Q Were you charged with coming up with the  
8 charter for the Unit 2 Generation Review Committee?

9 A Yes, I was. GP0019.

10 (Document described below was marked  
11 Troffer Deposition Exhibit 94 for identification.)

12 Q Mr. Troffer, showing you what we have marked  
13 as Troffer Deposition Exhibit 94, do I correctly identify  
14 it as a November 28, 1977 memorandum to Mr. Herbein  
15 from yourself on the subject of a trip that you took  
16 to Florida Power Corp. to discuss their Generation  
17 Review Committee?

18 A Yes.

19 Q Whose suggestion was it that you go to  
20 Florida Power Corp?

21 A Jack Herbein suggested that I visit one or more  
22 of the B&W plants that had the new standard tech spec  
23 and see how they had implemented it with respect to  
24 the GRC.

25 Q And this essentially is a report on your

1  
2 trip, correct?

3 A Correct.

4 Q Do you recall this memorandum and do  
5 you have it in mind? Have you had a chance to re-  
6 view it recently?

7 A No, not since I wrote it.

8 Q Would you like to take a moment to review  
9 it?

10 A Yes.

11 Q Have you now had a chance to review that  
12 memorandum of yours, Mr. Troffer?

13 A Yes, I have.

14 Q Ultimately, how closely did you use the  
15 Florida Power Corp. model in structuring the Genera-  
16 tion Review Committee here at Three Mile Island?

17 A Fairly close in some respects. We rejected  
18 some and accepted others.

19 Q Do you have a recollection of what about  
20 the Florida Power approach you specifically rejected  
21 in constructing your Generation Review Committee here?

22 A Yes, the consultant, we felt, was unnecessary.

23 Q He is referred to in Paragraph 3 on page 1?

24 A Yes. We felt like we had all the material and  
25 direction and in-house expertise to be able to comply

2 with the regulations and perform the functions without  
3 an outside expert.

4 Q Were the other aspects of the Florida  
5 Power model which you did not find useful or which  
6 you did not adopt that you can recall?

7 A Well, they stated that in some instances they  
8 went out to the site to conduct the meetings, and  
9 we put it in our charter that we would do so, but  
10 never found it particularly useful or convenient  
11 and never did that.

12 Q So, your Generation Review Committee  
13 meetings were held in Reading?

14 A Correct.

15 Q How often in your charter is it required  
16 that the Generation Review Committee meet? Actually,  
17 before we get into that, why don't we mark the charter  
18 so we can have it for reference and tell me if that  
19 is a copy of the charter?

20 A This is a copy of the charter.

21 Q Is revision one the current revision?

22 A Yes, it is.

23 MR. ROCKWELL: Why don't we mark that  
24 as Exhibit 95?

25 (Document described as Charter was marked



1  
2 Troffer Deposition Exhibit 95 for identification.)

3 THE WITNESS: After review, I believe the  
4 answer to your question is "quarterly." Yes,  
5 we are required to meet at least once per calen-  
6 dar year during the initial year of operation,  
7 and at least once every six months thereafter.

8 Q And you are referring to what page?

9 A Five.

10 Q Did you draft Generation Procedure 0019  
11 yourself?

12 A Yes, I did.

13 Q And that was drawing upon your look at  
14 Florida Power and your look at your own technical  
15 specifications for Unit 2, and possibly some experience  
16 with Unit 1; would that be a fair summary?

17 A Yes, and ANSI 18.7.

18 Q When did the Generation Review Committee  
19 become formally established for the first time?

20 A With the publishing of this GP 0019, and I can't  
21 recall the exact date.

22 Q Give me your best recollection. Was it  
23 the fall of '78 or earlier than that?

24 A I believe it was early '78.

25 Q Early '78 before you first went there?

1  
2 A I don't remember. I would have to look up  
3 documentation to answer that question.

4 (There was discussion off the record.)

5 Q I take it, Mr. Troffer, that you think  
6 it may have been in early '78, but you're not sure?

7 A Yes.

8 Q You would have to check?

9 A Yes.

10 Q That is, what we were referring to is  
11 the time when the Generation Review Committee began  
12 to function as a formed body?

13 A Yes.

14 Q Is that correct?

15 A Correct.

16 Q I note in review materials that we have  
17 here that we have some meeting minutes for the Genera-  
18 tion Review Committee during late '78 and early '79,  
19 but that we do not have any minutes going back further  
20 than that. I would ask that we be provided with the  
21 minutes of the Generation Review Committee meetings  
22 from the beginning, and I understand that that would  
23 not be terribly substantial because we are only talk-  
24 ing about a year's worth at most?

25 A Yes.

1  
2 Q Did anyone participate with you, Mr.  
3 Troffer, in the thinking that lead to the structure  
4 of the Generation Review Committee?

5 A Jack Herbein did, and Dick Klingaman.

6 Q Did Mr. Klingaman have any particular  
7 recommendations to you based on his own active experience  
8 as head of the Unit 1 Generation Review Committee?

9 A I don't recall anything specific.

10 Q He didn't say, "We have had this kind of  
11 experience and you should take this into account be-  
12 cause it is something we didn't anticipate"?

13 A We had conversations like that, but I don't  
14 remember any specific points.

15 Q Let me refer you to the charter of GRC,  
16 Exhibit 95. Under discussion of responsibilities  
17 on page 1, there is a general reference to reviews  
18 and audits, and then there is a sentence at the end  
19 of the first paragraph saying, "The purpose of such  
20 reviews and audits" -- and then numbers 1 and 2 relate  
21 to saying that certain kinds of activities are in  
22 accordance with safety requirements. Those safety  
23 requirements would be your technical specifications  
24 and your PSAR?

25 A Correct.

1

2

Q And anything else?

3

A Only in a general sense. The reason the requirements are so specific on the membership of the committee is to ensure that there is an experienced engineering flavor in the review.

7

Q Let us go to the membership of the committee on page 4. Again, did that reflect your thinking, or is that tracking fairly closely with standard technical specifications?

11

A It is tracking quite closely to the technical specifications.

13

(Documents described above were marked Troffer Deposition Exhibits 96-99 for identification, respectively.)

16

Q We have just marked -- and would you confirm that my identifications are accurate, Mr. Troffer -- we have marked a November 6, 1978 memorandum from Mr. Herbein in connection with naming members of the Generation Review Committee, as Troffer Deposition Exhibit 96, is that correct?

22

A Yes, but it is to Mr. Herbein.

23

Q Yes, to Mr. Herbein. We have also marked the Generation Review Committee meeting minutes for the January 10, 1979 meeting as Troffer Deposition

25

1 Exhibit 97?

2 A Yes.

3 Q And we have marked minutes of the Genera-  
4 tion Review Committee for Unit 2 for the meeting of  
5 March 8, 1979 as Troffer Deposition Exhibit 98?

6 A Yes.

7 Q And memorandum to members of the Genera-  
8 tion Review Committee, dated March 20, 1979, as  
9 Troffer Deposition Exhibit 99?

10 A Yes.

11 Q In reference to these documents, referring  
12 first to No. 96, can you tell me what the Subcommittee  
13 on Change Modification Reviews is? Is it simply a  
14 subcommittee charged with reviewing change modifica-  
15 tions?

16 A Correct.

17 Q Looking at the attachments to the covering  
18 memorandum, there is a long series of columns and  
19 numbers which I don't understand. I wonder if you  
20 can tell me generally what it means?

21 A I personally never saw these before.

22 Q Are you able to interpret for me what  
23 they mean?

24 A These were changes. This appears to be a log  
25

1  
2 sheet of specific change mods being routed first to  
3 Jeff Fritzen, and then placed on the GRC agenda for  
4 revision date of change mod, no, the review date for  
5 the GRC, and meeting closed, I would judge.

6 Q Who is "Jeff"?

7 A Fritzen, Chairman of the Subcommittee.

8 Q And what are the numbers along the left-  
9 hand column?

10 A Those are the change modification numbers.  
11 Each change mod has a unique number.

12 Q I see. So, would it be fair to say that  
13 because there are not entries after each of the change  
14 mod numbers, that the GRC does not review all of them  
15 but only selected ones?

16 A Most of these are change mods that probably  
17 never survived the system to be reviewed and executed,  
18 and we would review only safety-related change modifi-  
19 cations. So, we should have reviewed all safety-  
20 related change modifications which actually got to  
21 the formal documented stage.

22 Q How did the definition of a change modifi-  
23 cation as being safety related occur?

24 A We have a generation procedure that specifies  
25 those systems that are safety related.

1  
2 Q And is that procedure based on yet some-  
3 thing else? It is based, for instance, on the tech  
4 spec or on the regulations?

5 A Yes, in part on the tech specs, on interpretation  
6 of the tech specs and FSAR as developed by the architect  
7 engineer during plant design.

8 Q Could we have a copy of that Generation  
9 Review Committee procedure which defines which systems  
10 are safety related?

11 A It is not a GRC procedure. It is a Generation  
12 procedure, and I think it is 1008, but I'm not positive.

13 Q One thing I mentioned to you earlier, re-  
14 ferring to the Generation Review Committee charter,  
15 is that the best word we can use?

16 A If you would like.

17 Q Exhibit 95?

18 A That is accurate.

19 Q Could we go through who, in fact, filled  
20 the slots that are designated on pages 4 and 5 of the  
21 charter when the Committee was first formed?

22 A I would probably have to refer to documentation  
23 to be certain of that. I can give most of it. The  
24 chairman was myself. The vice-chairman was Dick  
25 Klingaman.

1  
2 Q As we go through, if that position is  
3 changed since the Committee was first formed up to  
4 the present, I would like to highlight that as well.

5 A Well, we have problems here. There have been  
6 changes. I would not recall them very well from  
7 memory. The chairman of the Change Modifications  
8 Subcommittee was Jeff Fritzen. The chairman of the  
9 Tech Specs Subcommittee was Bill Potts.

10 Q Was Potts from Generation Licensing  
11 Section?

12 A Correct. Chairman of the NRC and Audit Subcom-  
13 mittee either was Ron Prabhakar or Paul Levine -- I'm  
14 not sure which -- from the Quality Assurance Section.  
15 The chairman of the PCR and TCN Subcommittee was Dave  
16 Hufman from the Engineering Department. The GRC, the  
17 secretary to it, was Tabatha Stanislaw. The TMI 2  
18 PORC chairman that attended at least one meeting was  
19 Jim Seelinger from the station.

20 Q Mr. Seelinger was chairman of the TMI 2  
21 PORC?

22 A Correct.

23 Q Were there other members of the Generation  
24 Review Committee, other than the ones we have just  
25 covered, when the Committee was initially formed?



2 A Yes.

3 Q Do you recall any of their names? Let us  
4 just start with this. About how many members did the  
5 Committee have when it was first formed?

6 A We had both members and alternates, and in total  
7 I think there were about approximately nine, not count-  
8 ing the chairman and vice-chairman.

9 We had several changes, and I meet all of these  
10 people officially in many ways at many times, so it  
11 is hard to remember in which context what person was  
12 involved.

13 Q How many meetings has the Generation Review  
14 Committee had since it was formed?

15 A Roughly a dozen.

16 Q Do they generally take a full day?

17 A No. One and a half to two hours would be more  
18 appropriate.

19 Q How much time do you feel the Committee  
20 members spend in preparation for meetings or in doing  
21 work outside of meetings connected with their responsi-  
22 bilities in the GRC?

23 A Paul Levine in the Audit area would probably  
24 spend at least a working day in preparation for each  
25 meeting. Dave Huffman reviews the PCRs and TCNs and

1  
2 a good many hours of effort went into that, but I  
3 couldn't estimate how many in these library reviews.

4 The licensing engineer that would do the  
5 licensee event reports would spend several hours  
6 with the LERs, but not specifically in preparation  
7 for the GRC.

8 This was probably true of most of the input.  
9 The work had to be done anyway, and then they would  
10 come to the meeting and present the fruits of their  
11 labor.

12 I would spend anywhere from 25 minutes to two  
13 hours in preparation. The secretary would spend,  
14 I'm sure, two hours.

15 Q Did subcommittees meet in between the  
16 full meetings of the Generation Review Committee?

17 A Probably only the Change Mod Subcommittee met  
18 anywhere near formally, and I didn't attend any of  
19 those.

20 Q How would the other subcommittees function,  
21 by correspondence or by meetings in conjunction with  
22 the full Committee?

23 A Their desks were closely grouped, so they could  
24 consult often on these matters.

25 Q They were physically all located near each

1

2 other?

3 A These documents were routed from person to  
4 person, and were the subject of phone calls and  
5 face-to-face conversations.

6 Q Did you ever make an assessment of the  
7 extent to which the members of the Generation Review  
8 Committee were in fact able to carry out fully the  
9 kind of responsibilities that were imposed on them  
10 by membership in the Committee?

11 A Well, they certainly carried out the letter of  
12 the law as defined in our charter and tech specs.

13 Paul Levine in the Audit area provided probably  
14 considerably more than the minimum requirements, as  
15 did the licensing engineers for the LERs.

16 In the other areas, there was considerable work  
17 and effort, but almost incidental to the GRC.

18 Q Let us move on to Troffer Deposition  
19 Exhibit 97. This, as I understand it, appears to  
20 be notes and minutes of the meeting. In fact, it  
21 is signed by the secretary, so I assume it is essen-  
22 tially in the form of minutes of the January 10, 1979  
23 meeting, correct?

24 A Correct.

25 Q There is a meeting number, 78-24. Does

1

2 that have any significance in terms of the number of  
3 meetings of the Generation Review Committee that it  
4 would have had to date?

5 A Yes, that means that that was the 24th. I don't  
6 understand. We set out normally to serially number  
7 these and Tabby Stanislaw provided the serial numbering.

8 Q You were about to say you thought that was  
9 the 24th meeting?

10 A I rather feel it was.

11 Q But, you're not sure?

12 A I'm not sure. That is what that number should  
13 have been. It is so specified in the charter.

14 You asked me before how many meetings we held,  
15 and I said roughly a dozen. But perhaps there were  
16 more than that. I think we met for the first several  
17 months every couple of weeks, so perhaps there was  
18 more than that.

19 Q If we are supplied the minutes of the  
20 meeting, we can determine that?

21 A Yes.

22 Q In taking this set of minutes as a sample,  
23 I would like to discuss with you how the Committee  
24 worked. I would like to go through this NCR --

25 A Non-conformance report.

1

2 Q The non-conformance reports came to the  
3 Generation Review Committee as a matter of course  
4 for full review, is that correct?

5 A Yes.

6 Q What kind of review would they be subject  
7 to in the Generation Review Committee?

8 A The chairman of the subcommittee would present  
9 them verbally to the Committee. In many instances,  
10 we have copies of all the documents, and each person  
11 read the document and would review and comment.

12 But we found that the best form for truly under-  
13 standing was having a subcommittee member do his home-  
14 work in advance and then come there and present the  
15 facts, the status, the recommendations, and we would  
16 discuss whether to keep it closed or to keep it open.

17 Q The non-conformance report involves non-  
18 conformance with the technical specifications, is that  
19 correct?

20 A Generally, although it could be a non-conformance  
21 with any procedure or any document required. Of course,  
22 they all lead back ultimately to the tech specs.

23 Q And the action would generally be taken  
24 on the basis of the research done by the person pre-  
25 senting the summary, unless someone asked for further

1

2 study to be made?

3 A Right. There were some that took several meet-  
4 ing to close because we had internal disagreements,  
5 and there had to be external homework done -- proto-  
6 cols, memoranda, on-site visits.

7 Then the individual would come back and present  
8 and make recommendations. When we were satisfied,  
9 we would close it up.

10 Q Going to item 2, that is the category  
11 of written safety evaluations. None were introduced  
12 in that meeting. Would you tell me again what kind  
13 of reviews did the Generation Review Committee make  
14 of written safety evaluations, and you should start  
15 with telling me what written safety evaluations are.

16 A We did not formally review the written safety  
17 evaluations at the meetings. Those generally come  
18 attached to the documents, and they are rather a for-  
19 mal series of statements with check-off plots to  
20 see if you have an unreviewed safety question.

21 Q What are they?

22 A A written safety evaluation is a document that  
23 is filled out. I think we can probably find that on  
24 all these written safety evaluations. I remember it  
25 was one of the items that at that time we were reviewing

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there, but we didn't -- I don't believe we reviewed one.

Q Let us go on. Design changes is item number 3, and it is here that you were looking at change modifications. At what point in the life of a change modification would it be reviewed by the Generation Review Committee?

A Prior to execution.

(Continued on following page.)

2 Q Prior to taking action?

3 A Yes, to actually do the work.

4 Q Were change modifications reviewed by any  
5 other group here on the Island?

6 A Yes, they are all PORC reviewed.

7 Q What is the relationship of the review by  
8 PORC of change modifications to the review by the  
9 Generation Review Committee?

10 A Independent.

11 Q And what is the purpose of having two  
12 reviews?

13 A Because the importance to safety of the change  
14 in the safety system, safety-related systems.

15 Q Whose review comes first?

16 A PORC.

17 Q And am I correct in understanding the  
18 processes that a change modification would go to PORC?

19 A Yes.

20 Q It would be reviewed by PORC, approved  
21 presumably or else it wouldn't come on to the Generation  
22 Review Committee?

23 A Exactly.

24 Q It would then be reviewed by the Generation  
25 Review Committee, then either approved or disapproved,



1 and if approved, it would be implemented?

2 A Yes.

3 Q Is that the way the process works?

4 A Yes.

5 Q Since the time the Generation Review  
6 Committee has been in existence for Unit 2, have there  
7 been any members of that committee who were also  
8 members of PORC at the same time, other than the single  
9 PORC representative specified?  
10

11 A No, that is the only one, Seelinger.

12 Q Are there other categories of documentation  
13 that are reviewed by both PORC and the Generation  
14 Review Committee as these change modifications occur?

15 A I believe all of them are.

16 Q So that would include?

17 A Licensee Event Reports.

18 Q Non-conformance reports?

19 A Yes.

20 Q The pattern of review, that generally is  
21 the same as I described it, that PORC is the first  
22 level review and the Generation Review is a second  
23 level or final review?

24 A Yes.

25 Q Let us take the LERS for the moment. You

1  
2 indicated that the licensing engineers perform a review  
3 of LERs that not only serves a purpose for the Generation  
4 Review Committee, but also serves some independent  
5 purpose for their ongoing work, is that correct?

6 A Correct.

7 Q What standards are they given for their  
8 review of Licensee Event Reports?

9 A Technical specifications requirements.

10 Q Let us start with this. Whose licensee  
11 reports do they review?

12 A Those from TMI 2.

13 Q Do they review licensee reports from the  
14 outside world, i.e., beyond Three Mile Island?

15 A No.

16 Q Is the Generation Review Committee involved  
17 in reviewing Licensee Event Reports from other operating  
18 and nuclear power plants?

19 A Only in that the subcommittee member, Dave  
20 Huffman, would review the NRC-circulated reports of those  
21 and he would in due time report his reviews, but there  
22 was nothing from those reviews that was brought to the  
23 attention of the GRC, the full committee.

24 Q What you are saying is in your recollection  
25 of the operations of that committee, to date he has not

1  
2 brought anything to the committee's attention?

3 A Correct. Actually those NRC reports receive  
4 wide distribution, and lots of people including  
5 myself give it informal review, but the formal review  
6 was done by the subcommittee, and there was nothing  
7 ever brought to our attention.

8 Q But that is a subcommittee of the GRC?

9 A Yes.

10 Q So that I am tracking adequately on this,  
11 which subcommittee is that?

12 A Well, it was the chairman of the PCR and TCN  
13 subcommittee, although not specified as an item requiring  
14 review.

15 Q But you made it a matter of procedure, the  
16 Generation Review Committee, that Mr. Huffman or the  
17 chairman of that subcommittee perform that review?

18 A Yes. This was, I guess, an informal arrangement  
19 since I don't see it in writing there.

20 Q What was the purpose of that official review  
21 that Mr. Huffman would perform? Was that designed to be  
22 the primary channel to the management structure here  
23 on the Island from the outside world, if it was found  
24 to be important or relevant or applicable to what was  
25 going on here at the Island?

1

2 A We never use the words like that. I find the  
3 words believable.

4

Q Was there a primary channel?

5

A Not to my knowledge. We received these reports,  
6 a thick large number of items, and to do a thorough  
7 job of researching applicable to our plant and followup  
8 would have been a very considerable effort, and it was  
9 one that we never mounted.

10

The reviews were more a chance to see items of  
11 interest.

12

Q I am curious. I understand what you said  
13 is that it was not done, but how much time do you think  
14 it would take to have an individual who had the appro-  
15 priate training and background to do a detailed ongoing  
16 assessment of operating experience in the outside world,  
17 looking at other nuclear power plants experience in the  
18 light of how it ought to be factored in, if at all, to  
19 ongoing work on procedures, training and so on here at  
20 Three Mile Island, how much time would that take?

21

A If he had to perform no followup to initiate action  
22 and then followup to make sure it was done and perhaps  
23 even missionary work to do some of it himself, if all he  
24 had to do was to read and highlight items for possible  
25 tension, I should think it could be done by one man in

1

2 a good many hours a week.

3

Q Let us not exclude those things which you  
4 just excluded from the task. Let us assume that the  
5 person not only does the evaluative process, but then  
6 also does the followup, initiates followup and then  
7 follows up personally and does the missionary work  
8 that you talked about. Would that be a full time job?

9

A It would certainly be that and much more. I have  
10 no way of estimating how much.

11

Q Is that a kind of function that could be  
12 fitted within the scope of the work of something like  
13 the Generation Review Committee?

14

A I would not assign that to GRC, but to the  
15 Licensing Section, perhaps the GRC could follow the  
16 work of that individual or individuals and could review  
17 their efforts.

18

Q Do you know what if any practices there may  
19 exist elsewhere in the industry with respect to that  
20 kind of a function?

21

A No.

22

Q Is it done at all?

23

A I don't know. The NRC, themselves, a single out  
24 the most important items applicable to the plan and bring  
25 them specifically to our attention in bulletins and

1 notices. Those, of course, get full attention.

2 Q Do they come directly to the Generation  
3 Review Committee?  
4

5 A No, they come to Licensing.

6 Q And Licensing would implement them routinely  
7 as specified in the particular bulletin?

8 A Yes.

9 Q Or circular?

10 A Correct.

11 Q Has there been any discussion since the  
12 accident of establishing the kind of review process  
13 that we just talked about?

14 A Only informal conversations, to my knowledge.

15 Q Involving yourself?

16 A Yes.

17 Q What have been the thoughts that you have  
18 heard expressed on that subject since the accident?

19 A Very simply that we could likely profit from more  
20 in-depth review of experience elsewhere, particularly  
21 since we found out the same thing had happened, that  
22 happened to us, happened to two other plants, but they  
23 caught it in time before the damage was done.

24 Q Have you ever seen any systematic input of  
25 information? Is there any systematic procedure by which

1  
2 B&W analyzes operating experiences with respect to  
3 its NSSS system and then provides Metropolitan Edison  
4 with guidance as to how experience at other operating  
5 power plants may bear on the operation of the power  
6 plant here at Three Mile Island?

7 A We received verbal and written documentation  
8 from B&W on problems experienced elsewhere and were  
9 given advice and recommendations, but I don't know to  
10 what extent they conducted formal review to achieve  
11 this.

12 We have the B&W Owners Group in which representative  
13 from each of the utilities that owned B&W plants would  
14 periodically meet and they would discuss mutual problems.  
15 This was of great benefit to all the companies.

16 Q Were you ever an active participant in the  
17 B&W Owners Group?

18 A No, I was not. That would be Bill Potts and  
19 John Hilbish who could provide good information. That  
20 was an excellent forum to developing an approach to  
21 engineering solutions and licensing and courses of action.

22 Q I gather then Mr. Potts and Mr. Hilbish  
23 were the representatives of Met Ed?

24 A Correct.

25 Q This group is very much an operations group

1  
2 rather than a management group?

3 In other words, they are both involved in  
4 operations?

5 A Mid-level managers attend from the company.

6 Q But they are not intimately involved in  
7 the day-to-day operations of the plants, is that correct?

8 A Well, no. The licensing, Bill Potts and John  
9 Hilbish, when they attended, were as head of the  
10 License Section.

11 Q You said that John Hilbish was head of  
12 Licensing Section. Is Potts in a section?

13 A Potts was head of the section when I joined the  
14 group in October '77, and then he was promoted to a  
15 position out here on the Island in the middle of '78,  
16 and John Hilbish was transferred from the Island to  
17 the licensing position in Reading. They were sequentially  
18 section heads.

19 Q Do you know whether Hilbish provides back  
20 reports from the B&W Owners Group meetings?

21 A Yes, he does. We have quite a few such reports.

22 Q Are they reports prepared by him or by --

23 A Both.

24 Q Or someone from the --

25 A The minutes of the meeting and reports,



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correspondence.

Q Has that group been in existence, to your knowledge, since you arrived at Met Edison?

A Yes, before when I arrived.

(Discussion off the record.)

Q You indicated, Mr. Troffer, when we were off the record, that the B&W Owners Group attended to licensing questions and coordination, handling those questions among the vast B&W and SSS owners.

To your knowledge, did the Owners Group also serve as a medium for information exchange on operating issues and operating experience?

A Yes, but informally. The information was exchanged because they would have periodic meetings, sometimes on specific purposes, sometimes with a general agenda. But they would be together from one day to a full week, and there would be a considerable interchange among the participants.

The people would come back from each of these meetings pretty well charged up with some new information and new ideas.

Q How often would the Owners Group meet -- a couple of times a year or more often than that?

A More often than that, but I couldn't give you a

1  
2 decent estimate.

3 Q Did Mr. Hilbish bring other people with him,  
4 at the time, from Met Ed to address certain kinds of  
5 issues?

6 A Yes, licensing-engineering.

7 Q Were the other representatives on that  
8 Owners Group, that is representatives from other  
9 utilities, generally from the Licensing Sections?

10 A It is a good question, and I don't have the answer  
11 because I didn't personally participate.

12 (Discussion off the record.)

13 Q Back on the record.

14 Did you indicate that you have never attended  
15 a meeting of the B&W Owners Group?

16 A That is correct.

17 Q Do you know if anyone else from Met Ed has  
18 attended meetings with Mr. Hilbish?

19 A I can remember an instance out in San Francisco,  
20 but I can't remember for sure who the individual was,  
21 so I had better not guess.

22 Q Mr. Troffer, referring you to what has  
23 been previously marked as Womack Deposition Exhibit  
24 No. 23, would you take a moment to read that, please.

25 Have you had a chance to read that memo

1

2 marked as Womack Deposition Exhibit 23?

3 A Yes, I have.

4 Q Have you ever seen it before today?

5 A No, I have not.

6 Q Up until the time of the accident on  
7 March 28, 1979, had any of the issues raised in that  
8 memorandum ever come to your attention?

9 A No.

10 Q To your knowledge, from all of your  
11 conversations and contacts, ongoing contacts with people  
12 here at Met Ed or GPU, had anyone in either organization  
13 become aware of the kind of issues being addressed in  
14 that Exhibit 23, before the accident?

15 A Not to my knowledge.

16 Q Had you ever heard of a report by a man  
17 named Michelson of TVA before the accident?

18 A I don't recognize it.

19 Q Do you know that name?

20 A I am not sure if I have or have not. I certainly  
21 don't remember Michelson, and TVA means nothing to me.

22 Q Have you ever been exposed to a memorandum  
23 written or issued over the name of a Mr. Novak, who is  
24 at the NRC, relating to pressurizer level?

25 A I have seen the name "Novak" on several items of

1  
2 correspondence, but I can't connect the two.

3 Q Would that have been before the accident  
4 or since the accident?

5 A Before the accident I remember seeing the name  
6 "Novak."

7 Q Had you ever met Mr. Novak?

8 A I don't remember.

9 Q Do you have a visual image of what he looks  
10 like?

11 A No.

12 Q Referring you to Dunn Deposition Exhibit 38,  
13 had you ever seen that memorandum before the accident,  
14 and take a moment to review it.

15 A I don't recall ever seeing it.

16 Q If you don't recall seeing it, do you ever  
17 recall hearing about the issues addressed in that  
18 memorandum before the time of the accident?

19 A Only in a general sense. In 1958 or thereabouts,  
20 in Admiral Rickover's training program, I was made aware  
21 of the possibility of transferring the bubble from the  
22 pressurizer to elsewhere in the reactor loop.

23 Q By what mechanism?

24 A Perhaps by the same one, relief valve being stuck  
25 open, and then you would draw down the pressurizer and

1  
2 go below saturation, and pressure elsewhere would form  
3 a bubble elsewhere.

4 Q You recall that that may have been a subject  
5 of discussion in Admiral Rickover's program in the late  
6 fifties?

7 A Yes. It wasn't -- you would not have a specific  
8 procedure, as I remember, for coping with that emergency  
9 situation. This is for general training and discussion  
10 of the possible hazards.

11 Q Can you recall more specifically the context  
12 of that discussion in the Rickover program? Where did  
13 it arise?

14 A I cannot recall specifically. It was not a class-  
15 room presentation. It was a training discussion among  
16 people who were in the training programs.

17 Q Do you have any idea of who might have been  
18 involved in that discussion specifically by name?

19 A No. I think you could talk to many people who  
20 have been in Admiral Rickover's program, and the general  
21 concept is generally known and discussed as transfer of  
22 the bubble. But then I haven't been closely involved  
23 in Admiral Rickover's program as an operator since 1965,  
24 and I don't know where the program is today in this  
25 regard.

2 Q Was that general concept of bubble transfer  
3 associated with a small break in the system?

4 A That is certainly logical, but I don't remember  
5 the words used.

6 Q Do you know whether that analysis would ever  
7 have been expressed in writing?

8 A I don't know. I don't remember.

9 Q If you wanted to check and go back and see  
10 what details may have been available along the lines of  
11 that kind of analysis back in the fifties and sixties  
12 in the Rickover program, who would you go ask?

13 A Perhaps Admiral Rickover's organization in  
14 Washington.

15 Q What part of the organization?

16 A Well, they have and still have specific groups  
17 that go check out the unit for criticality with respect  
18 to the training status, and they have thousands of  
19 questions written down.

20 Many of those were given to us. This was the sort  
21 of thing covered by that at that time.

22 Q In the sense that the checkout teams would  
23 draw that kind of phenomenon to the attention of  
24 operating people?

25 A They would ask questions along those lines.

2 Whether that was the specific question or not, I don't  
3 know, but that is where I guess I would start, trying  
4 to find if it was a part of their training curriculum.

5 It may even today be a formal part of it. I am  
6 not sure. It could be a classroom problem, for all I  
7 know.

8 Q What are these groups called that go out  
9 and do the checkout?

10 A I won't give you the informal name.

11 (Discussion off the record.)

12 Q Back on the record.

13 A I don't recall.

14 Q You are fairly clear in your own mind in  
15 terms of recalling that that concept was known and at  
16 least a topic of discussion when you were in the  
17 nuclear Navy?

18 A Not a serious topic in that for most major accidents  
19 that could happen to you, you prepared a specific  
20 procedure for coping with them.

21 I don't recall having one for this.

22 Q In the nuclear Navy?

23 A In the nuclear Navy. My memory is quite vague on  
24 specifics, though.

25 Q Do you know whether the subject of the

2 potential of the bubble to transfer to the primary or  
3 into the vessel from the pressurizer has ever been  
4 a topic of conversation at Met Ed before the accident?

5 A Not to my knowledge.

6 Q Have you ever discussed it with anyone at  
7 B&W?

8 A Not before the accident.

9 Q That is what I mean. Have you ever heard  
10 of a man named Creswell?

11 A I don't recall. I don't recall that name.

12 Q He is with the Nuclear Regulatory Commission.  
13 Let us go back to Exhibit 97 which we have been discuss-  
14 ing before we got off and were sidetracked.

15 I think we had discussed the handling by  
16 the Generation Review Committee of non-conformance  
17 reports and Licensee Event Reports.

18 How about audits? In this Exhibit 95,  
19 there is a topic in the minutes called "Audits." Were  
20 those the audits conducted by the Generation Review  
21 Committee or by the Quality Assurance Department?

22 A By the Quality Assurance Section.

23 Q Section.

24 And what is the function of the Generation  
25 Review Committee then, to review the results of the



1

2 audits performed by QA?

3 A Correct.

4 Q And what would that process involve, the  
5 review process?

6 A Paul Levine would write a memo to the chairman  
7 of the GRC prior to each meeting and would have a  
8 paragraph or two concerning each audit.

9 Generally the memorandums that he wrote were  
10 attached to the minutes of the meeting. We would review  
11 the written words of Paul Levine, and then he would  
12 present them and we would discuss. It was a fairly  
13 thorough process.

14 Q The same kind of process involved in  
15 presenting other kinds of material, oral analysis with  
16 recommendations?

17 A Correct.

18 Q And you had those kinds of oral presentations  
19 based on, for instance, Licensee Event Reports or audits  
20 or non-conformance reports, and would the members of  
21 the Generation Review Committee generally have had the  
22 document involved available to them before the meeting?

23 A Some would and some would not. I would have seen  
24 all of them personally and probably would have signed  
25 a large number then.

1  
2 On change mods, they might have been seen by,  
3 say, only two members at a given meeting.

4 Q What kind of depth of questioning would the  
5 members have to get into when an oral report was being  
6 given?

7 A Whether or not an event is, say, reportable in  
8 accordance with the text base, why is this in LER in  
9 the first place; is the followup action adequate; is  
10 the solution technically satisfactory? Are all safety  
11 aspects satisfied in this given issue?

12 Q Those would be the kind of questions addressed  
13 to the person making the presentation?

14 A Yes.

15 Q Did you find very often that members of the  
16 Generation Review Committee would go back and do their  
17 own independent analysis and research to double check a  
18 particular point that was presented?

19 A I believe only in a few instances has that been  
20 done.

21 Q On the second page of Exhibit 97, to which  
22 we have been referring, there is a reference to the  
23 November 7th transient memo and another reference in the  
24 meeting minutes.

25 What was the November transient, do you recall?

1

2 A An unanticipated transient without square.

3 Q I heard that term before. I am not entirely  
4 sure what it means. Would you explain it to me?

5 A I could not very well. We did not get into this  
6 one. Our address to the thing was more administrative  
7 in nature. I would have to review this unanticipated  
8 transient.

9 John Hilbish and Bill Potts could off the top of  
10 their head give a rundown, but I could not without --

11 Q Was there in fact an ATWS on November 7th?

12 A No. This is a memorandum concerning potentials  
13 and possibilities, and whether or not plant modifications  
14 were required in order to cope with the situation.

15

(Continued on following page.)

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Q And so the date referred to there is the date of the memo?

A Yes.

Q Not the date of the transient?

A Yes, that is correct.

(There was discussion off the record.)

Q Could one describe the Generation Review Committee, Mr. Troffer, as the final level of safety review at Three Mile Island?

A No, there was also the GORB, General Office Review Board, that came out of Parsippany. That would come down to review the plant here. We sent them copies of all the pertinent documentation and our GRC meeting minutes and the PORC minutes and the bibliography of much other correspondence.

Q The General Operation Review Board was then a creature primarily of GPU?

A Yes, primarily, but it would also have Jersey Central Generation Vice-President. I personally never attended the meetings, and I don't remember how often they were held, but they were held here at the island. I believe they were quarterly and there were informal presentations, and an agenda, and follow-up actions, and open items, and a very, very formal, high-level

1  
2 review of the overall operation, which covered much  
3 of the ground previously covered by PORC and GRC.

4 Q And as chairman of GRC, you did not re-  
5 port to the GORB when it appeared on the island for  
6 its quarterly review?

7 A I did not.

8 Q Who did, do you know?

9 A The station manager and Vice-President of  
10 Generation was certainly here, and then various  
11 people would be brought in to report in specific  
12 areas.

13 They would be told in advance, "Come to talk  
14 about a specific modification or accident, etc.,"  
15 and the GORB would dig into this.

16 Q Other than the routine transmittal of  
17 materials that the GRC was reviewing and summaries  
18 of GRC actions to the GORB, was there any other  
19 contact between GRC and the GORB?

20 A Yes, but it was from myself to Don Reppert  
21 or Jack Thorpe in connection with a specific for  
22 instance. I don't even remember what the for instances  
23 were, but it was not a subject, say, of a memorandum  
24 from the chairman of the GRC to the chairman of GORB.  
25 It was not that kind of thing. They didn't attend my

1  
2 meetings and I didn't theirs, although we had, prior  
3 to the accident, set up for Don Reppert and perhaps  
4 Bob Long to come and review our GRC, and the acci-  
5 dent interfered with that.

6 Q What would be the nature of an issue  
7 which would have prompted your informal contact  
8 with Reppert or Thorpe, do you know?

9 A No, I can't remember. Perhaps they could,  
10 but I don't remember.

11 Q Let us go on to Troffer Deposition  
12 Exhibit 98, which is a March apparently summary  
13 and materials from a March 8, 1979 special meeting  
14 of the Generation Review Committee. What is a  
15 special meeting?

16 A Called specifically for a given item. I  
17 believe the only reason we had special meetings were  
18 for tech spec change requests because those had to be  
19 reviewed before submission to the NRC. All the  
20 other documentation could be reviewed after comple-  
21 tion of the signoffs.

22 Q Referring to this exhibit in particular,  
23 what was the restructuring of the staff that apparently  
24 was the subject of the meeting? What kind of restruc-  
25 turing?

1  
2 A This was the approval for a specific organiza-  
3 tion chart for TMI which showed Gary Miller as  
4 station manager reporting directly to Jack Herbein,  
5 and then the relationships of the superintendent of  
6 Maintenance, the unit superintendent, security,  
7 quality control, all organizational elements on  
8 the island.

9 Q Was that a significant change at that  
10 time in the structure?

11 A Yes.

12 Q How is it significant in terms of changes  
13 that were made?

14 A We no longer had the station manager reporting  
15 through the Operations manager to Jack Herbein. He  
16 now reported direct to Jack Herbein. I would have  
17 to get a copy of it.

18 That was the major point that comes to the top  
19 of my head. There were other changes, also.

20 Q Can you recall what the subject of the  
21 special meeting number 1 was, which we do not have  
22 before us?

23 A Probably a tech spec change.

24 Q Referring to the third page of Troffer  
25 Deposition Exhibit 98, it is captioned, "GRC Review

1  
2 Subject Log." What is that?

3 A This would be a log kept by Mr. Stanislaw of  
4 incoming material. I'm having a little trouble in  
5 that I never saw this before.

6 Q Is the format familiar to you?

7 A Yes.

8 Q Do you want to take time? I didn't mean  
9 to ask you to respond to a document that you weren't  
10 familiar with. If you want to take some time, please  
11 do.

12 A This would appear to me to be a log kept by  
13 Mr. Stanislaw of items to be placed on the agenda  
14 that were requested to be placed. Who requested it  
15 and who was notified to present the matter at the  
16 meeting, and what agenda the items were incorporated  
17 into and the dates, we finally closed them out.

18 Q So this appears to you to be a log for  
19 a particular meeting, rather than a running log of  
20 all open items?

21 A No, it is more than open-item log.

22 Q Let us take a look at the next page that  
23 is entitled, "Miscellaneous Log." How would that  
24 differ from what we were just looking at?

25 A This would be the regular kind of correspondence



1  
2 that shows up in our basket addressed to "GRC" or  
3 else selected out of the stream of correspondence  
4 by her because it affects the specifications for  
5 GRC review.

6 Q Is this in the nature of an open-item log?

7 A I would judge so. She can answer that better  
8 than I. But from the subject matter and the way it  
9 was handled, I would judge so.

10 Q And your guess is that she prepared these?

11 A Correct. Mr. Stanislaw, I might add, had had  
12 considerable experience in setting up the GRC-1, and  
13 just immediately picked up on GRC-2 and established  
14 the logs and in fact provided all the administrative  
15 services.

16 Q There are probably at least fifteen pages  
17 attached to this exhibit that are simply lists of  
18 numbers. Can you tell me what, if any, significance  
19 they have?

20 A Well, this says "NCN", but I feel they are NCR  
21 non-conformance reports. It would be a check-off  
22 list, I would guess, as to what had been brought into  
23 the Committee.

24 Q Again, it is a way of logging those which  
25 come to the Committee's attention?

1  
2 A Yes, but here is a separate one, "NCR's",  
3 and this was "NCN", so I am unprepared to answer  
4 that.

5 Q You indicated that one of the reasons  
6 for a special meeting of the Generation Review Com-  
7 mittee would be because that Committee would have  
8 to signoff on a change on the tech specs before  
9 it was forwarded to the NRC?

10 A Correct.

11 Q And you indicated that that was in con-  
12 trast to some other procedures where you would signoff  
13 on certain items after they were forwarded to the NRC?

14 A No. After they had been -- they were signed and  
15 a fait accompli, in some instances before they were  
16 forwarded to the NRC, such as LERs -- LERs can be  
17 forwarded to the NRC prior to our approval, but the  
18 tech spec change could not.

19 Q What would happen if an LER were forwarded  
20 to the NRC and then the Generation Review Committee  
21 looked at it and made some changes to it; would simply  
22 an amendment be sent?

23 A We could have, had it been necessary. We are  
24 reviewing it not so much as to whether or not it was  
25 a neat submittal to NRC, but as to whether or not

1  
2 the safety questions had been addressed and satisfied.

3 Q Do you recall ever having reviewed, for  
4 instance, a licensing event report, and by you I mean  
5 in the GRC, and finding it seriously deficient in  
6 some way in addressing safety issues?

7 A Not so much seriously affecting safety as  
8 being of concern to us in an engineering sense,  
9 where stud bolts weren't tensioned properly, and  
10 was the correct fire retardant sealant used for an  
11 opening in the diesel building. We questioned the  
12 I.C. circuit in which they were bypassing some indi-  
13 cator lights in order to improve reliability of the  
14 circuit, items such as that.

15 Q Those kinds of issues?

16 A Yes.

17 Q What other kinds of documentation would  
18 the Generation Review Committee signoff on after it  
19 was finalized and put into effect?

20 A Technical change notices to island procedures,  
21 special correspondence that we selected out for re-  
22 view. There weren't many of those, but perhaps a  
23 dozen. I would have to look on the list. The NCRs,  
24 the audited findings, the operating procedures.

25 Q Referring you now to what has been marked

1  
2 as Troffer Deposition Exhibit 99, this is simply  
3 another, I guess, agenda to your March 20, 1979  
4 Committee meeting, is that correct?

5 A Correct.

6 Q Is this a typical agenda format to the  
7 work done by the Generation Review Committee?

8 A Yes.

9 Q It appears that maybe I have two  
10 unrelated items together.

11 A This is the actual minutes (indicating).

12 Q Let us separate them. Has the Generation  
13 Review Committee undertaken any kind of a review or  
14 analysis of what role it plays in light of the  
15 experience with the accident in March?

16 A No. We have had one meeting since, and we  
17 discussed the fact that certainly a major item like  
18 this comes under the charter of the GRC.

19 However, in view of the ongoing investigations  
20 by governmental and other bodies and Met Ed, it was  
21 felt that our review would probably be superficial  
22 and inconsequential.

23 Q Was a decision made simply not to under-  
24 take a review at this time?

25 A Correct.

1  
2 Q Is there any thought that the GRC would  
3 evaluate the products of other investigations, the  
4 reports of other investigations? That has not been  
5 addressed?

6 A It was not discussed.

7 (Documents described below were marked  
8 Troffer Deposition Exhibits 100 and 101 for  
9 identification, respectively.)

10 Q Showing you, Mr. Troffer, what we have  
11 marked as Troffer Deposition Exhibit 100, it appears  
12 to be a January 24, 1979 memorandum with regard to  
13 an audit conducted by apparently one of the people  
14 in your department or section, is that correct?

15 A Yes.

16 Q It indicates under IV, Summary, that it  
17 was conducted to assess the adequacy of technical  
18 specification Appendix A, implementing procedures  
19 at TMI Unit 1 and Unit 2. What specifically can  
20 you tell me about what that means? How does Appendix  
21 A bear on the implementation of procedures, do you  
22 know?

23 A Appendix A to the license is the volume of the  
24 tech spec.

25 Q This Appendix A is then part of your

1  
2 technical specifications, and it is a question of  
3 whether your operating and emergency procedures are  
4 being implemented in accordance with Appendix A, or  
5 some other kind of procedures? Do you know?

6 A That should be all of the procedures to my  
7 knowledge.

8 Q To include generation procedures and  
9 various others?

10 A The whole scope of operating procedures at  
11 the island.

12 Q When this kind of an audit is made, would  
13 you characterize this as an audit report?

14 A Yes.

15 Q Is this a standard format for audit  
16 reports in your Quality Assurance group?

17 A Correct.

18 Q And would you routinely review and  
19 signoff on these audit reports?

20 A Yes.

21 Q Which you have seen in this case?

22 A Yes.

23 Q Let me refer you to V on page 2, second  
24 paragraph. Why don't you take a moment to review  
25 that before we discuss it.

1

2 Q Do you recall this issue now that you  
3 have had a chance to review the paragraph?

4 A Yes. This one was not a very important issue  
5 in that there is no documented regulatory require-  
6 ment for the administrative procedure which is  
7 recommended here. So this is along the lines of  
8 a beneficial suggestion.

9 Q I just want to be clear as to what is  
10 being addressed here. Let me read a portion of it  
11 to focus our discussion. It says that the audit  
12 team was concerned about the lack of administrative  
13 procedure which specifies the responsibility for  
14 identifying "the identification, review and follow-up  
15 of non-routine and reportable events." What do they  
16 mean by "non-routine reportable events" to your  
17 knowledge?

18 A Occurrences that are in non-compliance with  
19 the specifications.

20 Q And would reportable events be events  
21 which might be reportable under 10 CFR Part 21 or  
22 Part 5055-E?

23 A es.

24 Q The NRC does not have any administrative  
25 procedural requirement for the identification and

1

2 review?

3 A To my knowledge, that is correct.

4 Q Does Part 21 set out any requirement

5 or procedure?

6 A We have a Part 21 procedure?

7 Q Is that in your section?

8 A Yes. I don't know if there is an NRC require-  
9 ment for 10 CFR Part 21 procedure, but we developed  
10 one because it was a rather complex subject and  
11 seemed to need it.

12 Q Who was the administrator, or is there  
13 an administrator of that procedure within your section?

14 A I have trouble remembering whether that would  
15 be the QA section or the Licensing section. Both  
16 were heavily involved.

17 Q How often do items rise to the level of  
18 having to be reported under Part 21 or Part 5055-E?

19 A Under Part 21, as it turns out, almost never.  
20 There were considerable forebodings about being able  
21 to meet the reporting requirement, but they turned  
22 out to be few and far betwee .

23 Most of the reports were submitted by our  
24 vendors, and, therefore, we weren't required to  
25 report. In nearly all instances, the given item



1

2 was reported to the NRC under, say, 5055-E and,  
3 therefore, did not have to be reported under  
4 10 CFR 21.

5 We were very careful about 10 CFR 21 reporting  
6 because of the possibility that a company officer  
7 could be held responsible personally for not meeting  
8 the report requirement.

9 Q Do you keep a log in your licensing  
10 section of the reports under either Part 21 or  
11 5055-E filed either by Met Edison or by any of  
12 your vendors which may have applicability to the  
13 power plant here?

14 A To my knowledge, we do not keep a specific log.

15 Q Would you be aware of reports filed by  
16 your vendors with the NRC that relate to equipment  
17 you have?

18 A We were aware of several because they would  
19 send us copies of the reports.

20 Q Do you know whether there is any auto-  
21 matic system where you become aware of those?

22 A No, but generally those are matters of such  
23 large import to where I doubt if a 10 CFR 21 report  
24 on a TMI unit item of equipment would be made without  
25 them making us aware of it. I would be most surprised

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2 to find that.

3

Q Well, if you do have a procedure for  
4 Part 21, then what is the focus of the concern that  
5 is articulated in paragraph 2 under V?

6

A Identification of a review and follow-up of  
7 the non-routine reportable events, if he is talking  
8 to the whole world of non-routine reportable events,  
9 not 10 CFR 21.

10

Q 10 CFR 21 --

11

A Would be a specific sub-item.

12

Q Do you know whether any changes in pro-  
13 cedures for reporting the follow-up on non-routine  
14 reportable events were implemented at the time of  
15 this discussion?

16

A To my knowledge, no.

17

Q Referring to the fourth page of the  
18 exhibit, it is an attachment entitled, "Audit No. 78-31,"  
19 which appears to be the same audit which is the sub-  
20 ject of the covering memorandum. How is this different  
21 from the covering memorandum? What role does this  
22 form of document, which is represented by the fourth  
23 page of the exhibit, have?

24

A This is a specific finding of the audit, and  
25 it lays out the requirements, and where we are in

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violation of them, the requirements, and recommendation for disposition.

Q And, in fact, this one was a recommendation relating to an area directly under your operational responsibility, is that correct?

A Yes. It was an oversight on my part to not put that change into GP 0019. When I brought out revision one, subsequent to the audit finding, I seemed to remember having taken care of this. I believe I corrected revision one to reflect that.

Q The reference to an environmental review is a reference to an impact on the environment of certain changes?

A Yes, environmental tech specs.

Q Referring to Troffer Deposition Exhibit 101, do I identify it correctly as a memo to yourself from Mr. Prabhakar, dated March 13, 1979, with the subject, "Status of Audit Findings and Recommendations"?

A Correct.

Q Is this a status report essentially on open items?

A Correct.

Q Do you receive such a status report periodically?

1

2 A Correct.

3 Q How often?

4 A As I recall it, monthly.

5 Q And Mr. Prabhakar was responsible for  
6 doing these status reports?

7 A It was actually prepared by Jerry Loignon who  
8 works for him (indicating).

9 Q Following the covering memorandum are  
10 quite a number of pages of what appear to be com-  
11 puter printouts of various items and information  
12 about the items. Do you log all of your audit  
13 findings on the computer?

14 A Yes, that was recently initiated.

15 Q What is the purpose of doing that?

16 A For ease of putting out these reports. The  
17 computer terminal was right there in the office  
18 area and provided a good report in a hurry.

19 Q Do you have a specific procedure for  
20 trying to expose audit findings by certain target  
21 dates?

22 A Yes.

23 Q Could you explain that to me in general?

24 A Well, it was a system of gradually escalating  
25 the matter in the ranks of the company until eventually

1

2 we get up to the vice-president level, if we have  
3 not been able to close the item out.

4

5 What we mostly saw would be a case in closing  
6 out a file, that would come in with a documented  
7 request to delay an audit for a given reason to  
8 a certain date, and I would review their request  
9 and sometimes deny it.

9

10 But generally their reason was sound and we  
11 would approve the delay in closing out the audit.

11

12 However, the primary thing that kept us from  
13 rapid close-outs was one of priority elsewhere.

13

14 Q I refer you to Page 10 of the computer  
15 printout for this part of this exhibit, audit find-  
16 ings, No. 77-02-01, and under the Remarks section  
17 there is an indication that the CM appears to be --

17

A Probably change mod.

18

19 Q Backlog greater than thirty days old  
20 should be eliminated by a target date. This status  
21 report was in March, 1979. What was the change  
22 modification backlog at that point, do you know?

22

A No, I would have to review this would the  
23 auditor. I don't recall.

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(Continued on following page.)

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Q Was there a cutback in the maintenance personnel or budget for TMI 2 at some point in the six months or so before the accident?

A Not that I know of. But then I wouldn't be in the direct official chain there. It might happen and I would be unaware of it.

Q How often would your auditors audit a particular department or a particular area of operation? Do you have a standard?

A Two years are maximum for all our regulatory-required audits. We've conducted other audits that were management-directed, and we could conduct them as we saw fit.

Q Where would your regulatory-required audits be specified, in your tech specs?

A Correct.

Q And do you know whether you audited the Maintenance Department in the six months before the accident?

A We would audit specific maintenance functions in areas, but not the Maintenance Department as a given area.

Q Your audits tended to focus on smaller units?

1  
2 A Our audits focused on the 18 criteria in  
3 10 CFR, Appendix B, Appendix 50. These are  
4 specific NRC required audits of the plant. They  
5 talk of organization, reseat inspections, documents  
6 control, the audit function, et cetera.

7 Q Does it include maintenance?

8 A I don't believe so.

9 Q Could you check and tell us whether  
10 there was any audit of any of the maintenance  
11 units in 12 months before March 28, 1979 and, if  
12 there was, could we have a copy of audit reports  
13 that relate to that.

14 A We in the QC arena at Three Mile Island  
15 conducted many surveillances of the maintenance  
16 function during that period of time.

17 Q Okay. Would the QA audit tend to be  
18 more comprehensive?

19 A Correct.

20 Q Why don't we leave it there for the time  
21 being with the request to check on the Quality  
22 Assurance audit. The QC surveillance would have  
23 been performed by the QC Department in your  
24 organization?

25 A Yes.

1

2

Q And is that QC Department based in

3

Reading?

4

A No, that is here at TMI.

5

Q So the records of their audits or

6

their surveillances of particular units in the

7

Maintenance Department would be available here

8

at the Island?

9

A Yes, they would be.

10

Q You stated, Mr. Troffer, that in your

11

administrative role as the manager of Generation

12

Quality Assurance you would review change modifica-

13

tions?

14

A Yes.

15

Q Is that correct?

16

A Yes.

17

Q Then you would review them again in

18

your role as the chairman of the Generation Review

19

Committee?

20

A Correct.

21

Q And in your personal approach to that,

22

do you try to take a different level approach when

23

you do it in your administrative role as head of

24

QA than you do in your role as chairman of GRC?

25

A Yes. The review as manager of QA followed a



1  
2 review by a Quality Assurance engineer, who used  
3 a detailed checkoff list to make sure that all the  
4 requirements were met, and then my review was  
5 often rather rapid because I had assigned an engineer  
6 to review it.

7 It would come to me for review after it had  
8 already been signed by an engineer under Dick  
9 Klingaman and Dick Klingaman himself. So my review  
10 would be to get generally acquainted, to spot the  
11 highlights and raise questions, but not a detailed  
12 review.

13 Q How would that compare with whatever  
14 review you did in the Generation Review Committee?

15 A By the time it got to the GRC, it was often  
16 a one-minute presentation by Jeff Fritzen or  
17 Nick Noll and sometimes little discussion at all.

18 Q So generally exposure to the  
19 change modifications was fairly cursory?

20 A Correct, to the majority of them. Most of them  
21 are rather insignificant.

22 Q And in this, Mr. Klingaman would also  
23 have the same double exposure?

24 A Yes, although I believe he went into it in  
25 greater depth than myself in most instances because

1

2 of his function.

3

Q Did the Generation Review Committee have  
4 to review all change modifications?

5

A All safety-related change modifications, yes.

6

Q There was a form that we were given,  
7 which is the Major-Minor Change Modification  
8 Request Form, which was marked Shovlin Deposition  
9 Exhibit 39. Would there be a place for the  
10 Generation Review Committee to sign off on that  
11 form?

12

A No.

13

Q As there is for the PORC?

14

A No.

15

Q How would the Generation Review Committee  
16 approval be recorded?

17

A Only in the minutes of the meeting.

18

Q Has there been a reorganization just  
19 recently in the Met Ed organization?

20

A Since the accident?

21

Q Yes, within the last couple of weeks.

22

A Only verbally have there been changes made.

23

Q What do you mean?

24

A Well, for example, Training no longer reports  
25 to me. Mr. Lawyer is working practically full-time.

1

2

Q On training?

3

A At Training. We used to have approximately 75 professionals in the operating chain for TMI 1 and 2. Now we have 230, I believe I read the other day. So there has been quite a reduction in scope for nearly all, and many of the things that were separated for transfer to GPU four to five years downstream, as we discussed earlier, are being accomplished right now, as a result of the accident.

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Q Has there been a restructuring of the alignment of I think the five managers of Generation, QA or Administration?

13

14

15

A Yes.

16

Q Is this just recently?

17

18

19

20

A Yes. Sandy Lawyer is probably not going to be Operations manager at all anymore. Much of my information is informal and verbal and not really suitable for testimony.

21

22

23

Q There are changes under way at present though in terms of the lineup of the Generation managers?

24

A Correct.

25

Q Engineering, QA, Administration, Operations?

1

2 A Yes.

3 Q I assume you had some involvement with  
4 the recovery unit following the accident,  
5 is that correct?

6 A Yes.

7 Q Can you describe generally what  
8 your involvement has been?

9 A It doesn't have a title.

10 Q If you could describe it.

11 A I set up a system for authorizing the  
12 Unit 2 change modifications. Burns & Roe developed  
13 about three file cabinets of design documentation  
14 since the accident, and we wanted very rapid  
15 review and accomplishment of these modifications.

16 So I set up this specific system for it,  
17 and then followed it up since then to see that  
18 the system was being followed.

19 I continued to administer my perceptions  
20 as assigned. I stand the night manager watches  
21 and have various small chores.

22 Q What are the night manager watches?

23 A During the absence of Jack Herbein from  
24 the site at nighttime, we start watches generally  
25 about 8 o'clock until 2 o'clock in the morning

1  
2 and then from 2 o'clock until 8 o'clock.

3 We have two managers sequentially.

4 Q And what is the purpose of that night  
5 watch?

6 A There has been a rather detailed memorandum  
7 listing all the duties of the night manager.

8 We can refollow all the operations and  
9 maintenance and see that the important things  
10 are done right.

11 We have a log. It is not a great deal of  
12 action in the watch.

13 Q Is this something that is contemplated  
14 or being done because or as part of the recovery  
15 effort?

16 A Certainly.

17 Q Or is it something that is anticipated  
18 would become a standard practice on the Island?

19 A It is part of the recovery effort, to my  
20 knowledge it will be superceded by a new position  
21 being developed of shift engineer.

22 He will not be a manager. We have made a  
23 commitment to the NRC to have an engineer with  
24 2 to 5 years' experience selected and placed on  
25 each shift, with one engineer on the entire Island

1  
2 for both units, and he would improve the technical  
3 expertise of the watch.

4 Q In the long-run with the implementation  
5 of this shift engineer, what would be the primary  
6 reason for having him available, to be able to  
7 respond to unusual events?

8 A One of his primary duties would be to advise  
9 the shift supervisor of any emergency situation.

10 Q Is the concept to have the shift  
11 engineer available on very short time?

12 A Yes, to be on-site and to be available within  
13 a phone call, to rush to the control room, so  
14 that should there be a problem, he can help with it.

15 Q Would that shift engineer be given other  
16 or any administrative duties?

17 A Specifically we tried to design that position  
18 to minimize any administrative duties, and to  
19 enhance the technical engineering responsibilities.  
20 To a large measure it is to be a training assignment.  
21 He will be working toward his formal NRC license.

22 Q You mean as a reactor operator?

23 A Yes. In the long-run we should wind up with  
24 a cadre of operations-maintenance-experienced  
25 engineers.

1  
2 Q So I take it then that as you perceive  
3 the duty of the shift engineer it would primarily  
4 be to study, except when he is needed as a  
5 consultant?

6 A As a primary duty. We have a long list of  
7 things for him to do -- trend analysis, troubleshooting,  
8 specific chronic problems, gathering data for immediate  
9 problems to give to the non-shift engineers on-site,  
10 following up on the implementation of change  
11 modifications, training on shift personnel in  
12 specific technical areas, items best taught by an  
13 engineer, such as heat transfer.

14 Q So the effort is then to keep the  
15 engineer involved in working with the mechanics  
16 of the system, rather than in pushing paper?

17 A Correct.

18 Q Going back to your role during the  
19 recovery, you said you set up a system for  
20 authorizing the change modifications during the  
21 recovery?

22 A Yes.

23 Q And why was that necessary? Was it  
24 simply not possible for PORC to do that?

25 A No, we still kept PORC reviews in the chain,

1  
2 but the normal matter of authorizing change mods  
3 requires, as you can see by the exhibit you  
4 showed me from Dan Shovlin, a rather arduous,  
5 torturous row of committees and individuals to  
6 be finally approved.

7 Initially I tried walking through, hand-  
8 walking through a couple of modifications using  
9 that system and found it virtually unworkable  
10 in the time frame we were talking about.

11 So we devised a very rapid system in which  
12 specific individuals -- and we can have a change  
13 mod approved in less than a day.

14 Q Do you find that to be a workable  
15 system?

16 A Very workable. It is now being used,  
17 as a matter of fact, for Unit 1 change mod controls  
18 recovery, the startup mod, rather, and I believe  
19 it will be reflected in a changed material way of  
20 doing business here at the Island. I don't  
21 think we will return fully to the old method by  
22 the time the summer is up.

23 Q You are looking at a long-range  
24 procedure which would be more expedited and more  
25 direct and less committee work?



Troffer

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A Correct. We wouldn't really bypass any committee. Right now the current system requires the form to go to the maintenance office three times and the unit superintendent three times. Well, in the new method we developed it goes to those offices once.

Q Have you see any other modification of how administrative procedures or administrative approvals are granted that are likely to continue in the long-run as a result of the experience you have had here, a tightening up of how administrative paper work is accomplished?

A One of the chores assigned by Jack Herbein was to look at a specific procedure, tech spec surveillance at the present time and see if it could be clarified, and then by the methodology used develop a system to simplifying other procedures.

Well, the procedure he chose, surveillance, turned out to be a fairly simple procedure.

There was a Licensee Event Report made by Bob Arnold, I think it was, which was extremely complicated, and it was a poorly written report. When I tore into the procedure myself and traced it out, it was actually a good procedure. It required

1  
2 a clarification of a couple of points, which was  
3 accomplished.

4 But then I told Jack Herbein I would have  
5 to select another area to use as a good example.  
6 And so I picked drawing control.

7 I got into that a ways and yes, there are  
8 considerable problems there. Both procedureally  
9 and manpower-wise.

10 We have been cited for non-compliance by  
11 the NRC with respect to drawing control.

12 So it is an area that is ripe for review  
13 and change.

14 Q Do you see any fundamental lessons  
15 emerging in terms of your own analysis with  
16 respect to how the whole administrative apparatus  
17 works in terms of the chain of approvals and  
18 procedural approach to decision-making?

19 A Nothing at all magic, merely lay out the  
20 requirements that you are trying to address,  
21 wherein you develop the procedure, flow chart it,  
22 then write the procedure.

23 The biggest problems are the number of  
24 requirements in a given area, and then the changes  
25 in those requirements as you go along, either because

1  
2 of management "improvements" -- and that is in  
3 quotes -- and changes in NRC regulations, such  
4 that when you look at a given area, it is a very  
5 large and complicated task to clarify because of  
6 these many, many requirements that have been laid on.

7 It is also an emotional issue because you'll  
8 generally find that either an individual or a group  
9 on the Island who are sponsors of that given area,  
10 they understand it very well, and it doesn't seem  
11 very complicated to them because they work with  
12 it every day.

13 The fact that it takes months to process  
14 a change mod is explained by them as, "Well, we  
15 could do it faster if necessary, but it seems to  
16 suit, and we must meet all these requirements,  
17 and we don't really need any changes."

18 Q So you run into a certain kind of  
19 organizational inertia in that sense?

20 A Very much so.

21 Q Have you been given authority by  
22 Mr. Herbein to try to cut through that inertia  
23 and streamline the process?

24 A Only in the limited sense of reviewing  
25 some procedures and suggesting some methods.

1  
2 Q Have any other utilities come in and  
3 talked to you in this kind of area, obviously  
4 with much lower visibility than the kind of  
5 lesson for learning that may have occurred from  
6 the accident, to see how the administrative structure  
7 works and what kind of changes you are looking  
8 at in the light of the accident?

9 A Not to my knowledge.

10 Q How soon did you become involved here  
11 on the Island in the recovery effort? Were you down  
12 here in a matter of hours or was it several days?

13 A It was several days. I was initially assigned  
14 to the Motor Lodge as a technical adviser to the  
15 press relations people.

16 Q How long did you function in that role?

17 A Until the Tuesday following the accident.  
18 Then I came to the Island and set up the change  
19 modification system.

20 Q And as technical adviser to the Press  
21 Relations Group, that was to the Met Ed Press Group?

22 A Yes. I gave a deposition on that to the  
23 President's Commission and another group.

24 Q Okay, and you were working with  
25 Blaine Fabian.

1

2

(Discussion off the record.)

3

Q Did you have any other duties once

4

you came back from being a technical adviser

5

to the Press Group, other than continuing operation

6

of your section and the implementation of the

7

expedited change modification approval procedure?

8

A And the night manager.

9

Q How long have you been doing the night

10

manager's shift?

11

A That didn't start until a couple of weeks

12

after the accident and has lasted since.

13

It was initially 12-hour watches, and then

14

we got more people and broke it down into six

15

weeks and every other week seven days.

16

Q And that is on top of the regular working

17

day?

18

A Yes.

19

Q Have you been part of any group or any

20

process which has involved overall assessment

21

of the management of the recovery effort or have

22

you been primarily involved in the specific tasks?

23

A These specific tasks.

24

Q Is there a working group which has

25

basically directed the recovery effort here?

1

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A That is a very complicated question, and there is a complicated answer.

3

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7

There are several groups that have been involved -- Waste Management Group, think tank, the Project Management Group under Bill Hirst and Bill Gunn of GPU. These groups have changed from time to time.

8

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12

Bob Arnold heads the uppermost Management Group, which included directors from all the other groups, and you are off into an area I am not terribly familiar with that is extremely complicated.

13

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(Discussion off the record.)

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Q Have you been a member of any of these groups that you have just described?

A I have attended most of the meetings held in Jack Herbein's trailer every morning at 7:30, seven days a week, 4th of July included, and then sporadically many, many other meetings.

Q So you have been exposed to the recovery organization in some detail?

A Yes, that is pieces and parts of it. The only people who have drawn the whole thing together are really Bob Arnold and Jack Herbein.

Q Tell me a little bit about the 7:30

1  
2 meetings. How long have they been under way?

3 A They started within two or three days  
4 after the accident.

5 Q Has that been basically a status review  
6 of developments in the preceding 24 hours?

7 A That is right, and action items in the way  
8 of drawing samples, specific maintenance, operations,  
9 training, all items connected with the recovery of  
10 Unit 2, and come in connection with the startup of  
11 Unit 1.

12 Q Has there been a fairly regular attendance  
13 at those meetings?

14 A Yes.

15 Q Would you give me the list as best  
16 you can recall?

17 A Jack Herbein, John Collins of the NRC.  
18 There would be generally either Colwitz, Klingaman,  
19 Lawyer, Troffer or a combination.

20 Q Those are the five managers?

21 A Four managers, the ops trailer watch,  
22 engineer, someone from startup.

23 Q Why?

24 A Startup Group, that is Unit 2, Change Mod  
25 Startup. that is the title of the group, and they

1  
2 would take over a system after it had been  
3 completely constructed and then would operate it  
4 and then debug it and bring it on line, then send  
5 it over to Met Ed for operations.

6 Q Hadn't the startup been completed  
7 by the time of the accident?

8 A This is another startup. "Startup" is the  
9 title of a group of people of a specific discipline  
10 in construction for the closing stages, in which  
11 you transfer cognizance of a system from construction  
12 to startup.

13 Startup has it for several weeks and months  
14 until it is groomed and ready for operation. Then  
15 it is turned over to the company for operation.

16 Q Not all of the systems had been turned  
17 over to the company for operation?

18 A Yes, they had, but change mods were treated  
19 like new construction in that first construction  
20 under Bill Gunn were constructed and then the  
21 Startup Group would once again groom them in  
22 operation, and then turn it over to Met Ed's  
23 operation, just as back in construction.

24 Q You mean that process you just described  
25 was a process used during recovery?



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A Yes.

Q We are off on a sidetrack here, but did the Startup Group still exist as an entity as of the time of the accident?

A No.

Q So it was re-formed?

A Correct, with many of the same people brought in from wherever they had been scattered to.

Q To perform what you call the grooming function that they were normally performing during construction?

A Yes.

Q And who was the head of that Startup Group?

A I talked with him many times. He left now and is back in Penn Elec.

Q Don't worry about it. Who else would be attending the morning meetings?

A People from construction, Bill Gunn and Tom Hawkins, Waste Management representative, GPU Technical Support Group, such as Branch Elam, Health Physics, which would be Dave Limroth, Operations personnel, shift supervisor, sometimes

1  
2 the shift foreman.

3 Q You reached fairly far down in the  
4 organization for these morning meetings?

5 A Yes. These meetings would normally last an  
6 hour but sometimes two. There would be 15 to 25  
7 people there.

8 Q Would Gary Miller generally attend?

9 A No.

10 Q How about Seelinger?

11 A When he was connected with Unit 2, he did.  
12 For a period of time during recovery, Jim Seelinger  
13 was assigned to Unit 2 and attended the meetings  
14 then. Now he's working full-time in Unit 1 and is  
15 no longer attending Jack Herbein's morning meetings.

16 Q Who would run the meeting, Herbein?

17 A No. It is currently being done by Joe Chysyk  
18 and the spelling is a guess, but they have been run  
19 run by several different people, including myself.

20 Q And what about Arnold?

21 A He has other meetings. He does not attend  
22 this one.

23 Q Do Creitzer and Dieckamp ever attend?

24 A Not these meetings.

25 Q In addition to these meetings were

1  
2 there other status meetings held either on a  
3 daily or some other periodic basis?

4 A Construction held one every morning at  
5 about 7 o'clock. These were widely attended by the  
6 various organizations.

7 Q What would be the focus of these  
8 meetings?

9 A Actually getting the material and trades  
10 organized to do the construction work.

11 Q Has there been a fair bit of construction  
12 work necessary as a result of the recovery effort?

13 A Construction of new systems to supplement  
14 existing plant systems for cool down and coolant  
15 cleanup, contamination cleanup.

16 Q I tried to characterize the 7:30  
17 meetings as status meetings, being a meeting that  
18 would summarize the events of the preceding 24  
19 hours. Is that an accurate characterization?

20 A Well, they were also working meetings in  
21 that we were developing a course of action and  
22 providing direction. There were minutes of every  
23 meeting kept and published.

24 Q There were?

25 A Yes. It is about a five- or seven-page document

1  
2 these days that is published daily.

3 Q Has there been one person who has  
4 performed the secretarial function?

5 A No, that is performed by the ops trailer  
6 watch engineer who marks up the copy and gives it  
7 to Jack Herbein's secretary for typing and  
8 distribution.

9 Q What other regular periodic meetings  
10 have there been in connection with the recovery  
11 effort?

12 A Health Physics is held often, but I don't  
13 know how often, down in the Health Physics trailer.  
14 Waste Management meetings.

15 Q Who is head of the Waste Management?

16 A Ben Rusche.

17 Q Any others?

18 A There were meetings held with Burns & Roe  
19 to review their design product, by system.

20 Q Mr. Troffer, have you made any statements  
21 from March 28, 1979 to the present relating to your  
22 understanding of the accident events or anything  
23 relating to the accident, and by the word, "statement,"  
24 I mean have you reduced to writing or have you  
25 memorialized in some other way any thoughts or

1  
2 impressions or analysis that you have or have  
3 you given an interview to somebody else in which  
4 they have reduced it to writing or tape? I'm  
5 not talking about routine administrative work  
6 that is part of your job.

7 A I have had only discussions with personnel  
8 and no official assignments of any sort in  
9 connection with review of the accident. I have  
10 put nothing in writing or on tape.

11 Q Have you been interviewed by I&E?

12 A I have not been interviewed by anyone in  
13 connection with the accident.

14 Q You have been interviewed previously  
15 by the Commission, is that correct?

16 A Yes, but not in connection with the events  
17 of the accident.

18 Q Well, it was in connection with your  
19 role in the recovery?

20 A Correct.

21 Q I include that as part of the accident,  
22 the whole accident sequence; in other words, the  
23 accident and all of the events flowing from it through  
24 the recovery period.

25 You indicated earlier that you had an interview

1  
2 with our Commission and you may have had another  
3 interview. You weren't sure whether that second  
4 interview was with the Commission or with the NRC?

5 A That is correct.

6 Q Have you been provided a transcript of  
7 that second meeting?

8 A Yes. I have a tape, not a transcript.

9 Q A tape. Could you check and see  
10 whether that second meeting was with the Commission  
11 or the NRC, and if it was with the NRC, advise us.

12 Do you have that tape of the second meeting?

13 A No, I don't. I was given a copy of the  
14 tape as soon as the meeting was over. I have  
15 never seen the transcript.

16 Q The request would be for us to be advised  
17 if it was NRC or the President's Commission. Do  
18 you recall any other interviews besides those two  
19 and obviously this one?

20 A Well, you were reviewing the one with the  
21 Presidential Commission with Dwight Reilly.

22 Q That was the first one?

23 A Yes, and then two others, and this is the  
24 fourth, I believe.

25 Q Any others besides those?

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A No.

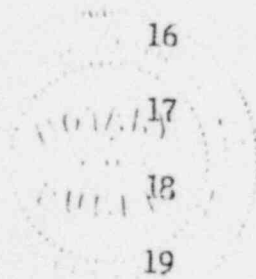
MR. ROCKWELL: We are going to recess your deposition at this time, Mr. Troffer, leaving you subject to recall for further testimony should it be necessary. We don't know it will be, but if it is, we will let you know through counsel. Thank you very much.

(The deposition concluded at 12:40 P.M.)

*George J. Troffer*  
-----  
GEORGE J. TROFFER

Subscribed and sworn to before me  
this 20<sup>th</sup> day of August 1979.

*Verlis S. Lerner*



\* \* \*  
NOTARY PUBLIC  
Muhlenberg Twp. Berks County, Pa.  
My Commission Expires December 14, 1982

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MR. ROCKWELL: We are going to recess your deposition at this time, Mr. Troffer, leaving you subject to recall for further testimony should it be necessary. We don't know it will be, but if it is, we will let you know through counsel. Thank you very much.

(The deposition concluded at 12:40 P.M.)

-----  
GEORGE J. TROFFER

Subscribed and sworn to before me  
this \_\_\_\_\_ day of \_\_\_\_\_ 1979.

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I N D E X

WITNESS

DIRECT

George J. Troffer

2

E X H I B I T S

TROFFER DEPOSITION  
FOR IDENTIFICATION

PAGE

93	Resume of George J. Troffer	2
94	A memorandum dated November 28, 1977	21
95	Copy of a charter	23
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97	GRC meeting minutes for January 10, 1979	27
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100	Memorandum dated January 24, 1979	68
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STATE OF NEW YORK )  
: ss  
COUNTY OF NEW YORK)

I, STANLEY RUDBARG, Certified Shorthand Reporter and Notary Public of the State of New York, do hereby certify that the foregoing deposition of METROPOLITAN EDISON COMPANY by GEORGE J. TROFFER, was taken before me on the 4th day of August 1979.

The said witness was duly sworn before the commencement of his testimony. The said testimony was taken stenographically by myself and then transcribed. The within transcript is a true record of the within deposition.

I am not related by blood or marriage to 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.

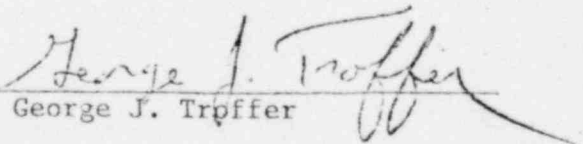
IN WITNESS WHEREOF, I have hereunto set my hand this 6th day of August 1979.

Stanley Rudbarg  
STANLEY RUDBARG, CSR.

PRESIDENT'S COMMISSION ON THE  
ACCIDENT AT THREE MILE ISLAND

Corrections to August 4, 1979, Deposition of George J. Troffer

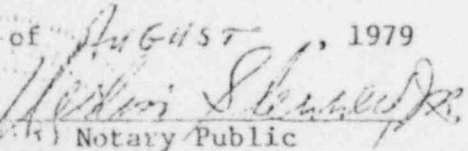
<u>Page</u>	<u>Line</u>	<u>Change</u>	<u>To Read</u>
6	10	"reseat"	"receipt"
6	11	"wells"	"welds"
7	3	"physician"	"position vacant"
31	12	"NRC"	"NCR"
50	21	insert after "and"	"his connection with"
58	2	"square"	"scram"
71	6	delete	"?"
79	3	change to read	"10 CFR 50, Appendix B"
79	5	"reseat"	"receipt"
83	8	"separated"	"targeted"
84	19	"perceptions"	"sections"

  
George J. Troffer

Subscribed and sworn to

before me this 20<sup>th</sup> day

of August, 1979

  
Notary Public

NOTARY PUBLIC

Nuhlenberg Twp., Berks County, Pa.  
My Commission Expires December 14, 1982