

CR 5757
1 of 2
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

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In the matter of: :

CONSUMERS POWER COMPANY :

(Midland Units 1 and 2) :

Docket Nos.: 50-329-OM
50-330-OM
50-329-OL
50-330-OL
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DEPOSITION OF JOSEPH D. KANE

VOLUME V

Bethesda, Maryland

Wednesday, 3 December 1980

Deposition of JOSEPH D. KANE, resumed pursuant to
adjournment, at 8:30 a.m., in Room 422, Phillips Building,
7920 Norfolk Avenue, Bethesda, Maryland, before William R.
Bloom, a notary public in and for the District of Columbia,
when were present on behalf of the respective parties:

On behalf of the Applicant:

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One First National Plaza, Chicago, Illinois

JAMES E. BRUNNER, Esq., Consumers Power Company,
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On behalf of the Regulatory Staff:

WILLIAM D. PATON, Esq. and BRADLEY JONES, Esq.,
Office of Executive Legal Director,
United States Nuclear Regulatory Commission
Washington, D. C.

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C O N T E N T S

<u>Witness</u>	<u>Direct</u>	<u>Cross</u>	<u>Redirect</u>	<u>Recross</u>
Joseph D. Kane (Resumed)		189		
<u>Exhibits</u>			<u>For Identification</u>	
Consumers' 20			190	

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P R O C E E D I N G S

Whereupon,

JOSEPH D. KANE

resumed the stand as a witness, and, having been previously
duly sworn, was examined and testified further as follows:

MR. ZAMARIN: You realize, Mr. Kane, you're still
under oath?

THE WITNESS: I do.

CROSS-EXAMINATION (Continued)

BY MR. ZAMARIN:

Q In the documents you produced for us yesterday, one
of them had a hand-written note on it on the first page. It
says "Priority" and it's circled at the top.

By any chance, do you still have those documents
with you today?

A Yes, I do.

Q May we see those, please?

A Yes.

(Documents handed to counsel.)

MR. ZAMARIN: I'm going to mark the package of
documents that you produced as Exhibit 19. You'll be able to
retain your original copy, and I'm going to mark it on yours

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1 because some of mine is not legible and we may have to use it
2 again, and it would be simpler than to ask you for it through
3 Mr. Paton.

4 I'll mark this as Group Exhibit number 20.

5 MR. PATON: Do you have number 19?

6 MR. ZAMARIN: Yes. It's the diagram he made yester-
7 day.

8 MR. PATON: After a while let's make a copy of it.
9 There's a copying machine out in the hall.

10 If you want to loan me number 19, maybe I can get
11 a copy made.

12 (Document handed to counsel.)

13 (Whereupon, the document referred to
14 was marked as Consumers Exhibit 20
15 for identification.)

16 MR. ZAMARIN: I have marked as Consumers Group
17 Exhibit number 20 for identification, as of today's date, all
18 of the documents that you produced yesterday.

19 BY MR. ZAMARIN:

20 Q On the top sheet of this exhibit is a portion of a
21 writing tablet, and it has some handwriting. Is that your
22 handwriting that appears on there?

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1 (Handing document to the witness.)

2 A This portion?

3 Q Yes.

4 A Yes.

5 Q All right.

6 I note that it says on here "Priority", and it's
7 circled. What does that mean?

8 A It's a note to myself to try and establish which
9 work items are priority.

10 Q And what do you mean by that?

11 A There are many issues to be faced in the Midland
12 review, and in an attempt to address the ones that are most
13 important I have devised my own scheme of identifying them as
14 priority.

15 And this was one item that I felt, because of what
16 had been indicated to Consumers, required immediate action.

17 Q Okay.

18 What do you mean because of what had been communica
19 ed or indicated to Consumers?

20 A The letter from Robert Tedesco to Joe Cook, indicat
21 ing that a follow-up letter would come with additional instruc-
22 tions. And that's what that memo was about, or what that

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1 document was about.

2 Q And the letter from Tedesco to Cook, to which you
3 refer, discussed what?

4 A It discusses the additional borings, sampling and
5 testing being requested of Consumers by the Corps of Engineers
6 and the NRC Staff.

7 Q And do you recall what it said about that?

8 A It talks about, the letter from Tedesco talks about
9 what SPT borings can be eliminated, what modifications to the
10 program should be made in the cooling pond, and instructs
11 Consumers on the final decision by NRC on this matter.

12 Q All right.

13 And you have on here:

14 "Ask COE to write letter to George Lear."

15 Is that something that you were reminding yourself
16 to do?

17 A No. As you see above the line it has:

18 "Discuss with Hari Singh on 11/3/80."

19 I was to ask the Corps to write this letter to
20 George Lear which incorporated the information that was indi-
21 cated in Tedesco's letter was to be forwarded.

22 Q Okay.

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1 And what information was it that was not in
2 Tedesco's letter but that was to be forwarded?

3 A Where the borings in the cooling pond should be
4 moved to, where the SPT borings were not necessary in the
5 original requested borings. And also there is an enclosure
6 which I was recommending to the Corps; this enclosure be provid-
7 ed with this letter that I was asking the Corps to write,
8 because it gave the reasons why the six borings where the SPT
9 were no longer required, it gave the reasons why your informa-
10 tion that was submitted on September 14th replaced the need for
11 those borings.

12 Q Why were you to ask the Corps to write a letter to
13 George Leer?

14 A The meetings within NRC management on your appeal
15 action concerning the additional borings and sampling had
16 culminated in the letter from Tedesco to Cook. Up until this
17 time it was my knowledge that the Corps had not been made aware
18 of the contents, the full contents of that letter. And what I
19 was indicating to them, now that the decision had been made
20 and certain information had been promised to Consumers to
21 follow after that letter, I was attempting to have the Corps
22 provide the information which had been promised.

jbn6

1 Q It says in Tedesco's letter to which you refer,
2 his letter to Cook on November 10, 1980, that the NRC has
3 consulted with the U.S. Army Corps of Engineers in reaching
4 their decision.

5 Do you know if that is a true statement?

6 A It is a true statement.

7 Q Then why wasn't the Corps aware of what had happen-
8 ed?

9 A The Corps was being made aware by my phone call,
10 by a copy of Tedesco's letter of the ultimate decision. The
11 Corps was consulted and actually came here to Bethesda to have
12 a meeting with Mr. Vollmer and Mr. Knight on this matter.

13 Q Whose idea was it initially to move some of the
14 borings from one area of the cooling dike to the area of the
15 baffle dike?

16 A The exact person, I do not know.

17 Q Well, who in general came up with that idea?

18 A The only thing I could say would be the portion of
19 the NRC management that made the decision on the additional
20 borings.

21 Q Okay.

22 So the initial idea of moving the borings to the

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1 baffle dike originated within the NRC as opposed to the COE?

2 A That would be my understanding.

3 Q And can you tell me which individuals were most
4 likely to have come up with that idea?

5 A I don't know.

6 Q When you referred to NRC management, who were you
7 referring to?

8 A Mr. Vollmer, Mr. Knight, Mr. Tedesco, Darl Hood.

9 Q The moving of the borings from the operating pond
10 dike to the baffle dike was never discussed at a meeting at
11 which you were in attendance?

12 A No. I was told of the decision to move them.

13 Q When were you first told of that decision?

14 A I'm not sure of the exact date. I think I indicat-
15 ed yesterday I thought it was at the end of October or the
16 early part of November.

17 Q Did you ever discuss with anyone the reasons for
18 moving them?

19 A I questioned the reason with Lyman Heller.

20 Q And what did he say to you?

21 A I don't -- Based on my recollection of that conver-
22 sation, I don't think Lyman Heller knew the reason.

jbn8

1 Q Did you talk to anyone else about the reason why
2 they had been moved?

3 A No.

4 Q So as you sit here now, you really don't have
5 any information from anyone as to why they were moved?

6 A Other than what I've told you.

7 Q Okay.

8 You mentioned Lyman Heller. And, as you know, we
9 have taken a partial deposition from Mr. Heller. And with
10 regard to a good many of the issues relating to the soils, he
11 had done no review and he had no knowledge.

12 Is his involvement in the Midland soils issue to
13 a lesser extent than yours?

14 A Depending on the timing that you're talking about.
15 I'd say prior to November of 1979, it was greater. Since
16 November, 1979, I would say my involvement would be greater.

17 Q Does he have, since November of 1979, any hands-on
18 involvement to speak of with regard to review of the technical
19 matters related to the soils?

20 A Would you explain what you mean by "hands-on"?

21 Q Yes.

22 In other words, actually looking at things and

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1 reviewing them?

2 A It would not be his normal policy to review the
3 documents unless something was specifically brought to his
4 attention that he may wish to resolve for himself. He is not
5 responsible for the review now.

6 Q And the one who is responsible for the review now
7 would be you and the Corps?

8 A Essentially the Corps, as you can see by our
9 contract, and, because of the legal hearing, more involvement
10 by myself.

11 Q So is it fair to say, then, that since November of
12 1979 that Lyman Heller's involvement with the actual technical
13 aspects of the soils problem and the proposed fixes has only
14 been on an occasional basis, when his advice has been sought on
15 a particular matter?

16 A Not true entirely. When correspondence is generated
17 by the Corps or myself, it would be directed to Lyman's office
18 for his concurrence. And so he would be kept aware of the
19 review progress by being informed of those communications.

20 Q As part of his being kept aware of the review
21 process, do you think that he should have been aware of the
22 piezometer data with regard to the diesel generator building

jbn10

1 surcharge?

2 A What do you mean by "being aware of the piezometer"?
3 That he knew piezometers were taken?

4 Q No, that he had reviewed the data, that he had
5 looked at the data with regard to piezometer readings that were
6 associated with the surcharge of the diesel generator building.

7 A It's my recollection that the piezometer data was
8 submitted after November of 1979.

9 Q Okay.

10 A And I don't feel he would have had the time to
11 review it in detail.

12 Q Okay.

13 You told me a minute ago, though, that even since
14 November of 1979 that he has generally reviewed things.

15 A I have not said that. I did not say that.

16 Q All right.

17 Tell me precisely what his involvement has been
18 from November, 1979, through today's date with regard to the
19 soils issues and the remedial fixes at Midland.

20 A I have said since November of 1979 I am essentially
21 responsible with the Corps for the review of Midland. Lyman
22 Heller becomes involved when some letter, some work is generated

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1 either by myself or by the Corps, which is going to project
2 management, maybe eventually to Consumers Power. That corres-
3 pondence, because of Lyman's position, goes through his office.
4 He is asked to concur in that correspondence. But that does
5 not mean that he has had an opportunity to review what is
6 being covered by that letter.

7 Q I see.

8 Is it the normal procedure, then, since you and
9 the Corps have been primarily responsible for the review, for
10 this correspondence and that type of communication to go
11 through Lyman Heller because of his position, but yet not
12 require him to do any review of the technical or engineering
13 aspects of the information that is being passed on, but rather
14 leaving that to you and the Corps?

15 A I would say because of Lyman's position as Section
16 Leader, where he has the responsibility to review the work of
17 everyone in his section, it is normal practice for him not to
18 be responsible for the review itself.

19 Q Okay.

20 Now you say it's his responsibility to review your
21 review work?

22 A It's his responsibility to review the final product

mpb2 1 of our review work, which would come out as either letters or
2 as safety evaluation reports, that type of communication.

3 Q Okay.

4 No safety evaluation reports have come out of your
5 review with regard to soils, have they?

6 A As of yet, no.

7 Q Have any draft SERs come out?

8 A No.

9 Q I take it letters have come out as a result of
10 your review?

11 A Yes.

12 Q And each of those has been reviewed by Lyman Heller?

13 A To my knowledge, y s.

14 Q And it's his responsibility to review the final
15 products, being those letters?

16 A That is correct.

17 Q And would that review include review of the
18 technical aspects and technical adequacy and correctness of
19 that letter?

20 A I think that is a more appropriate question to be
21 answered by Lyman.

22 Q I'm asking you. You're working for him. He's your

mpb3 1 Section Leader and I'm asking for your understanding of what
2 his responsibility is as it relates to your work.

3 A You're asking me what Lyman Heller's responsibilit-
4 ies are?

5 Q That's right, what your understanding of it is.

6 A My understanding of what it is?

7 Q That's right.

8 A I recognize the time constraints that he would have
9 on his position, and I could not expect him to be technically
10 responsible for everything that goes through his office.

11 I could foresee occasions where he may have a
12 question about the technical adequacy of something and pursue
13 it further and become involved in evaluating the technical
14 adequacy. I think that would be more the rare occasion.

15 Q Can you recall any occasions with regard to the
16 soils or the remedial fixes at Midland where he has pursued
17 the technical adequacy of anything further?

18 A I can recall other projects where in his review
19 he felt an issue was not fully covered or was questionable and
20 would have done some review of that and made recommendations
21 for making changes.

22 Q My question was with regard to Midland and the

mpb4 1 Midland soils issue and the remedial fixes.

2 Do you want to hear the question again?

3 A Yes.

4 MR. ZAMARIN: Would you read back the previous
5 question?

6 (Whereupon, the Reporter read from the record
7 as requested.)

8 THE WITNESS: In conversations with Lyman I have
9 experienced where he has questioned certain aspects of it.
10 But I don't consider that to be a review in detail.

11 BY MR. ZAMARIN:

12 Q What aspects has he questioned?

13 A There must be a hundred aspects that he's questioned.

14 Q Well, let's start with the first one that you can
15 recall.

16 Really what I'm getting at is that it appeared
17 from his deposition that he did not have knowledge of some of
18 the most basic items with regard to the technical aspects of
19 the fix, and I'm really trying to find out whether you're the
20 guy that's got all that information and whether we're wasting
21 our time in talking to him further. So that's all I'm trying
22 to do. I mean, I'm not trying to attack Lyman Heller. Don't

mpb5 1 misunderstand what I'm doing; I'm just trying to find out who
2 in the world it is that has the information that we need to
3 know. That's all.

4 So it's in that context that what I want to know
5 is really what is it that, to your knowledge, Lyman Heller has
6 knowledge about with regard to the soils and the technical
7 aspects of the fixes at Midland.

8 MR. PATON: Let me just comment, Ron. You know,
9 in other words, you say the technical aspect of the fixes.
10 You know, we have consultants in various areas.

11 Are you limiting yourself to the area that Joe is
12 involved in, or what? I mean, are you interstructural, are you
13 in the pipes?

14 MR. ZAMARIN: To the extent that Lyman Heller is
15 into those other areas and Joe knows about it, I want to know
16 about it. I would expect that Lyman Heller's involvement in
17 those areas would be somewhat limited except that geotechnical
18 it necessarily overlaps some of that.

19 MR. PATON: That's what I'm indicating. Maybe you
20 could explore, you know, what areas --

21 MR. ZAMARIN: That's what I'm trying to do.

22 MR. PATON: Okay.

mpb6 1 MR. ZAMARIN: That's what I've been trying to do.

2 BY MR. ZAMARIN:

3 Q So far what you've told me is that while there
4 hasn't been any kind of detailed review, you've had conversa-
5 tions with Lyman where he has questioned certain aspects of the
6 Midland soils and the recommended fixes. And what I would
7 like to know is what those aspects and questions were.

8 A I know I won't recall the major portions of them
9 because it touches on every aspect of the Midland design. But
10 I have tried to indicate that Lyman is not responsible for the
11 Midland review and that his involvement would be as someone in
12 an administrative position, is responding to some work by some-
13 one below him.

14 Q Your work isn't done under his supervision and
15 control, is it?

16 A I'd say it is.

17 Q You'd say it is. All right.

18 Well, then, maybe you had better tell me all about
19 those conversations, what he questioned and what aspects he
20 questioned.

21 MR. PATON: Well, I don't know.

22 MR. ZAMARIN: He just said Lyman Heller is

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1 responsible for everything he does, now.

2 MR. PATON: You say he'd "better" tell you.

3 He understands the question, but he might possibly not under-
4 stand the word "better." It sounds a little threatening.

5 But, in any event --

6 MR. ZAMARIN: That's the way I meant it.

7 MR. PATON: That's the way you meant it? Okay.

8 That's the way he meant it.

9 I would instruct the witness that he need not be
10 threatened. But I think otherwise the question is an appropri-
11 ate question.

12 THE WITNESS: Right now I'm not sure what "better"
13 meant, so I will give you my better answers.

14 I've talked to Lyman on the difficulties we could
15 expect in the underpinning operation.

16 I've talked to Lyman about the problems and how we
17 can reach a resolution of those problems on the fix for the
18 diesel generator building.

19 I've talked to Lyman about what is trying to be
20 done on the cooling pond dikes.

21 I've talked to Lyman about what is needed in the
22 way of preparation of testimony.

WRB/wb2

1 I think I've covered all aspects of the plant fill
2 settlement problem.

3 MR. ZAMARIN: All right.

4 BY MR. ZAMARIN:

5 Q What did you discuss with him when you were discuss-
6 ing difficulties you could expect in the underpinning opera-
7 tion?

8 A To excavate under the electrical penetration valve
9 area, under the electrical penetration areas. In our estima-
10 tion this is getting to be a difficult assignment which could
11 have impact on other structures. And what we feel is neces-
12 sary is to see a good plan to where this action could be
13 safely carried out.

14 At this time we feel the information that has been
15 submitted is more of a conceptual nature and is not the detailed
16 plan.

17 Q Did he respond in any way to this information that
18 you gave me?

19 A I felt we both had the same agreement as to its
20 difficulty.

21 Q In your opinion was he as fully aware of all the
22 facts surrounding the underpinning as -- related to the under-

WRB/wb3

1 pinning situation as you were?

2 A I don't think he's had the opportunity, and I
3 myself have not had a great deal of opportunity to review the
4 underpinning, and have relied heavily on the Corps.

5 Q Who in the Corps have you relied heavily on in
6 regard to the underpinning?

7 A The reviewers that are assigned to Midland from
8 the Corps.

9 Q Okay.

10 Who have you relied on with regard to the under-
11 pinning? Do you have names?

12 A Hari Singh, William Otto, Jim Simpson.

13 Q Have you relied on any of those three more than the
14 others?

15 A There are others that would be involved in it, and
16 that would be Ron Erickson. But it's my understanding the
17 reviewer assigned to Midland for the major part of the review
18 is Hari Singh.

19 Q Why is excavation under the electrical penetration
20 area going to be difficult?

21 A I think it is easily recognized that any time you
22 excavate under a completed structure you run the risk of

WRB/wb4

1 inducing stresses that the structure was not originally
2 designed for. So the concern is by that work to induce
3 stresses that will harm that structure.

4 Q And that's what you mean by your statement that
5 excavation under there will be difficult?

6 A It will be difficult also from the standpoint of
7 making sure there is no loss of ground from the foundations
8 of adjacent structures.

9 Q Why will that be difficult?

10 A If not properly conducted, you could cause the
11 loss of other structures.

12 Q I understand that can happen. Why would it be
13 difficult to avoid that? Or are you suggesting it will be
14 difficult to avoid that?

15 A I think it's difficult any time you excavate under
16 a completed structure.

17 Q All right.

18 Well, what about with regard to loss of support
19 for the foundations of adjacent buildings? Isn't that, in
20 your opinion, going to be a difficult feat to accomplish with
21 regard to your electrical penetration area?

22 A With the proper measures it could be handled where

WRB/wb5

1 it would be safe. But it's the incorporation of those proper
2 measures that we would like to assure ourselves of.

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3 Q What are the proper measures to which you refer?

4 A Making sure the excavation is conducted in a
5 manner where it is braced, or supported in some manner such
6 that we do not lose that support.

7 Q Has that information been supplied to the NRC in
8 any form?

9 A In some form.

10 Q In what form is that?

11 A In my estimation it is in conceptual form.

12 Q When was that supplied to you?

13 A It has been supplied over a series of submittals,
14 the last one being September.

15 Q September 1980?

16 A September 14th, 1980.

17 Q And do you have any problem or quarrel with any-
18 thing that's contained in what you style the conceptual form?

19 A We have problems with what has not been submitted
20 rather than with what has been submitted.

21 Q From that do I take it you have no problem with
22 the concept that has been submitted to you?

WRB/wb6

1 A Until we get the other information I don't feel a
2 judgment should be made on that.

3 Q Has the information that has been submitted to you
4 with regard to the electrical penetration area underpinning been
5 reviewed?

6 A It's my understanding it has been reviewed by the
7 Corps of Engineers.

8 Q And has that been discussed with anyone within the
9 NRC, to your knowledge?

10 A Yes, it has.

11 Q With whom?

12 A It was discussed at the meeting which the Corps
13 was invited to attend in October with many of the reviewers,
14 both structural, mechanical, hydrologic, and ourselves.

15 Q You say the meeting in October?

16 A That's correct.

17 Q What was the date of that meeting?

18 A I'm not sure. I think it was around October 12th,
19 but I'm not sure of the exact date.

20 Q And was this meeting attended just by NRC and
21 their consultants?

22 A That is correct.

WRB/wb7

1 The minutes -- not the minutes, but the handwritten
2 notes that you questioned me about in detail previously were
3 notes that were discussed at that meeting.

4 Q When you say I questioned you in detail, I don't
5 recall. Are you referring to handwritten notes you made?

6 A Yes.

7 Q Excuse me a moment, so I can see if I can find
8 them.

9 A They are exhibits to previous depositions.

10 (Pause)

11 Q Do you have a copy here?

12 A Yes.

13 Q May I see them?

14 A This is a part of them.

15 (Handing to Mr. Zamarin.)

16 Q You've shown me a copy of what has been previously
17 as Exhibit No. 11 s of 10/15 1980, and my recollection is that
18 this was something bearing the date of 9/27/80 that was pre-
19 pared for, I think, the borings appeal meeting; wasn't it? --as
20 opposed to notes of this October meeting to which you refer?

21 A I think I've indicated in the past, and I think the
22 record will show that this was prepared following -- it was

WRB/wb8

1 prepared for a meeting following the meeting at Midland on
2 the Appeal Board, and that it was an attempt by the Corps and
3 ourselves to again discuss with management the items of con-
4 cern in your appeal.

5 Q So what you're saying is that this Consumers
6 Exhibit No. 11 was prepared by you for the October meeting
7 which you referred to a moment ago?

8 A May I see it, please?

9 Q Yes. It's what you have in front of you.
10 (Handing document to the witness.)

11 A Yes.

12 Q Did you take any notes of this October meeting that
13 you referred to a moment ago?

14 A I took no notes. I had presentations in that
15 meeting, and what I covered in the meeting has been given to
16 you and you have made exhibits.

17 Q Okay.

18 What you covered in the meeting, then, I take it,
19 is what's been marked Exhibit No. 13, Exhibit No. 12 and
20 Exhibit No. 11; is that right?

21 A That is correct.

22 Q Do you know if anyone took any notes at that

WRB/wb9

1 meeting?

2 A I don't know if anyone took notes at that meeting.

3 Q Was Darl Hood at that meeting?

4 A Yes.

5 Q Did you see whether he took any notes?

6 A I didn't observe anyone taking notes.

7 Q Were you the principal speaker at that meeting?

8 A I think I gave you an agenda of speakers in my
9 deposition documents.

10 Q Well why don't you tell me again? I don't recall.

11 A There were presentations by myself, by Hari Singh,
12 by Bill Bivins, by George Lear, by Lyman Heller.

13 Q What did Lyman Heller's presentation consist of?

14 A I don't recall.

15 Q Do you have any idea?

16 A I think he made a comparison between the settle-
17 ments that you initially predicted versus the settlements which
18 are now being recorded.

19 Q Do you remember what that comparison was?

20 A You mean the magnitude of the settlement comparison.

21 Q Yes.

22 A Half-inch to over seven inches.

WRB/wb10

1 Q Is there anything else you recall him saying?

2 A No.

3 Q Did he say anything more about that?

4 A I'm sure he said more than the words I've just told

5 you.

6 Q But you don't recall?

7 A I don't recall.

8 Q Tell me what you recall that Hari Singh said.

9 A Hari Singh addressed the underpinning, the remedial

10 measures for the service water structure, for the electrical

11 penetration area, the feedwater isolation valve pit area.

12 Q Do you remember what he said in addressing those

13 matters?

14 A He attempted to show what your plans were, and,

15 if I remember correctly, how those plans have changed with a

16 more recent submittal, and what the Corps foresaw were the

17 problems in the remedial action.

18 Q Do you remember what he said about what the Corps

19 foresaw as the problems with the remedial action?

20 A There are many details that he went into. One that

21 I can recall is the fact that the foundation now of the elec-

22 trical penetration area is now being a span between the in-

WRB/wb11

1 stalled caissons and the control tower, which is a significant
2 change from the original design.

3 Q Did he say anything more about that?

4 A He indicated the concerns with that change and what
5 was necessary to resolve whether it was going to be adequate
6 or not.

7 Q What do you recall him saying about that?

8 A Similar to what I have just said.

9 Q You don't recall any more detail?

10 A No.

11 Q Was he speaking from a geotechnical engineering
12 standpoint or structural engineering standpoint at that time?

13 A From a geotechnical engineering standpoint.

14 Q And were his comments limited to the geotechnical
15 aspects of the fixes?

16 A He touched on the area of overlap between geo-
17 technical engineering and structural engineering.

18 Q Are you aware of any conclusions that were ever
19 reached, or made at that meeting?

20 A As far as I can recall, no conclusions were
21 reached, but ultimately were culminated in the letter from
22 Tedesco.

B2

WRB/wb12

1 Q You're referring now to the November 10th letter
2 from Tedesco with regard to the borings?

3 A That's correct.

4 Q I see.

5 Was the main purpose of this meeting, then, in
6 October to discuss the borings appeal?

7 A The main purpose was to inform our management of
8 the review concerns and why the borings had been requested,
9 and why they were thought still to be necessary.

10 Q You mentioned before that one of the things you
11 discussed with Lyman Heller about was the difficulties you
12 could expect in the underpinning operation as to the electri-
13 cal penetration area and the effect it could have, or the
14 impact it could have on other structures. By that were you
15 referring to this ground support of the foundations of adjacent
16 structures?

17 A That is correct.

18 Q Was the change of borings from the operating pond
19 dike to the baffle dike discussed at that October meeting?

20 A No. There was indication at that meeting.

21 Q Did anyone else present any kind of prepared
22 documents, or an agenda such as you had for the meeting?

WRB/wbl3

- 1 A Do you mean my notes?
- 2 Q Yes.
- 3 A I think Hari Singh had notes. If I recall
- 4 correctly, Lyman had one Vugraph.
- 5 Q Was Lyman's Vugraph with regard to a comparison
- 6 of the predicted as opposed to experienced settlement?
- 7 A That's correct.
- 8 Q And you say Hari Singh had some notes, you believe?
- 9 A Yes.
- 10 Q --from which he spoke?
- 11 A Yes.
- 12 Q Did he distribute copies of his notes or copies
- 13 of anything?
- 14 A He made no distribution, as far as I know.
- 15 Q Did anyone at the meeting make any distribution
- 16 of anything?
- 17 A Other than showing Vugraphs, I know of no way of
- 18 informing the people that were there. There were no notes
- 19 given.
- 20 Q Did Hari Singh show any Vugraphs?
- 21 A Yes.
- 22 Q And what was the nature of the Vugraphs that Hari

WRB/wb14

1 Singh showed?

2 A Most of them were plates taken from the submitted
3 documents.

4 Q Submitted documents by Consumers?

5 A That's correct.

6 Q What documents do you recall that he showed plates
7 from?

8 A What documents?

9 Q Yes.

10 A There was the MCAR No. 6, I think, where there was
11 information on remedial measures. And I think there were also
12 documents from the 50.54(f) responses.

13 Q Do you remember what information from the 50.54(f)
14 responses he showed?

15 A I'm trying to recall 50.54(f)'s themselves, and
16 I don't.

17 Q Do you recall what information from the Management
18 Corrective Action Report No. 6 he showed?

19 A He showed the proposed remedial fixes for the
20 service water structure, which is the piles which are bolted
21 to the structure. And he showed the electrical penetration
22 area, and discussed the details of the caissons.

WRB/wb15

1 Q Do you recall any more about his discussion of the
2 caissons than just that he discussed them?

3 A He discussed what he understood were your con-
4 ceptual designs and the problems that have to be faced in doing
5 that work.

6 Q And are those problems the ones about shoring up
7 to make sure that you don't take away the lateral support
8 for foundations of adjacent buildings?

9 A That's part of it..

10 Q What's the rest of it, if you can recall?

11 A We've already touched on some of them this morning,
12 in the fact that you are now changing the foundation of the
13 electrical penetration area to other than what it was designed
14 for, and the stresses that will be induced because of those
15 changes, and what must be done to evaluate those changes.

16 Q All right. And what did he say had to be done to
17 evaluate those changes, if you recall?

18 A To have a better understanding of the pile and
19 caisson design; to have a better understanding of the actual
20 loads involved, and it being now imposed on the control tower
21 where it was not originally to be imposed. Those type of
22 considerations.

WRB/wbl6

1 Q Did anyone at that meeting express any criticism
2 of the intended designs?

3 A Criticism? No.

4 Q Did anyone at that meeting express any disagree-
5 ment with the intended remedial action by Consumers?

6 A I don't think "disagreement" would be the word I
7 would use. I would say there was concern now for the electri-
8 cal penetration area foundation, in that it wasn't designed to
9 do the bridging that it now is going to be apparently asked
10 to do, and whether it was capable of doing that.

11 Q Did anyone express doubts as to its capability of
12 doing it?

13 A Yes.

14 Q Who?

15 A Members of the Corps.

16 Q Do you recall who?

17 A One I particularly remember was Rixby Hardy.

18 Q Can you tell us, as closely as you recall, just what
19 he said about that?

20 A That it was difficult for him to understand how the
21 foundation, as originally designed to rest on the soil, would
22 not be acceptable to span the lengths that would be involved.

WRB/wb17

- 1 Q Was that difficult for you to understand?
- 2 A I haven't really given a lot of thought to it.
- 3 Q Do you know if he had given a lot of thought to it?
- 4 A You would have to ask him.
- 5 Q But you don't know whether he had or not?
- 6 A I do not know.
- 7 Q Is he a geotechnical engineer?
- 8 A Yes.
- 9 Q Is he competent, in your opinion?
- 10 A Yes.
- 11 Q Do you know what information had been provided him
- 12 with regard to the details of the original design of that
- 13 foundation, if any?
- 14 A It's my understanding his comment was prompted by
- 15 what was presented to him that day.
- 16 Q Okay. So he was simply making a comment based
- 17 upon the information that was available to him there at the
- 18 meeting?
- 19 A That is correct.
- 20 Q Was that the only incident, or item of comment
- 21 that suggested some kind of a disagreement or a criticism of
- 22 Consumers' intended remedial fixes?

WRB/wb18

1 A I think there are others who may have shared that
2 same concern.

3 Q How about with regard to any other concerns? Were
4 any others raised at the meeting?

5 A None other than what you have already been informed
6 of.

7 Q Well, tell me now what the others were. When you
8 say "informed of," I don't know what you're referring to. So
9 what I want to hear now is what they are.

10 A I would say it's the things we've been talking
11 about in my deposition for the last five days.

12 Q All right. I want to know what came out of that
13 meeting.

14 A Well that's not what you asked. You asked me what
15 was discussed.

16 Q That's right.

17 A And I'm saying many of the things that were dis-
18 cussed are things that we have already discussed, with concern
19 to such things as the cooling pond dike, the need for the
20 borings; what it is hoped to get from that information, and
21 what can be resolved from that information.

22 Q All of that was discussed at that October meeting?

WRB/wb19

1 A That's correct.

2 Q Were there any other disagreements or criticisms
3 of Consumers' remedial fix other than Rixby's comment about
4 the foundations?

5 A None that I can recall.

6 Q What did you talk to Lyman Heller about with
7 regard to the problems and how you can reach resolution of
8 problems on the fix for the diesel generator building?

9 A Could you put a time frame on that? At what
10 time when I was talking to Lyman?

11 Q Well, I'm going back. You told me there were
12 about four areas in which you had had conversations with
13 Lyman Heller where he had questioned certain aspects of the
14 Midland soils and remedial fix issue, although he hadn't done
15 any detailed review of what you were doing, and one of those
16 were difficulties we could expect in the underpinning operations
17 And we've gone through that.

18 One of the others was about problems and how we
19 can reach resolution of those problems on the fix for the
20 diesel generator building.

21 I want to know what the substance of those conversa-
22 tions with Lyman was.

WRB/wb20

1 A When I made the comment you're referring to, it
2 was essentially from the time I first became involved till
3 now, what conversations have I had with Lyman. So under that
4 time frame I would have to say we talked about the piezometric
5 behavior.

6 Q What did you say about piezometric behavior to
7 him?

8 A We discussed the behavior of the piezometers upon
9 surcharge removal.

10 Q And do you recall what he said to you and what you
11 said to him?

12 A What I said to him was essentially what I said to
13 you a few days of deposition ago, about the concern for not
14 being in secondary consolidation because of the drop after
15 removal.

16 Q And what did he say to that?

17 A I don't recall him expressing an opinion.

18 Q Did you ever show him any of the data or the graphs
19 of the piezometer behavior?

20 A Yes.

21 Q And he looked at them?

22 A When I showed them to him? Yes.

WRB/wb21

1 Q Did he say anything about them when he looked at
2 them?

3 A No.

4 Q Do you recall when that was that he looked at
5 them?

6 A No, I do not.

C2

7 Q Are you sure that you showed Lyman the piezometer
8 graph data?

9 A Yes.

10 Q What else did you discuss with Lyman about the
11 diesel generator building?

12 A I've had discussions with Lyman on the settlement,
13 behavior and having to do with the problem with the differences
14 of material and the differences in compressibility characteris-
15 tics.

16 I've had discussions with Lyman about settlement
17 behavior in recognition of cracks which had been termed macro
18 voids.

19 That's all I can recall.

20 Q What was the substance of your conversation with
21 Lyman about recognition of cracks which could be termed macro
22 voids?

WRB/jbnl

1 A. I think I had indicated yesterday that the first
2 time that it had been brought to my attention that the material
3 had been placed dry and cracks did exist was in the meeting
4 we had here at the end of July. And I had discussions with
5 Lyman of, Had he heard this before in his review, and what
6 the impact would be on the settlement behavior.

7 Q And what did he say?

8 A It was my understanding that he was not surprised
9 that it was being considered that the material was placed dry.
10 It was my understanding that, based on work that he had done
11 previously, that that was a possibility.

12 Q What work was that?

13 A His involvement in the review before November of
14 1979.

15 Q Do you recall anything else that you talked to him
16 about or that he said or you said with regard to that matter,
17 the matter of macro voids?

18 A I cannot recall what he said, but I know I had
19 indicated to him that if the cracks did exist then the settle-
20 ment behavior we could expect was not necessarily what was
21 recorded and the conclusion that we were in secondary compres-
22 sion.

WRB/jbn2

1 Q Secondary consolidation?

2 A Yes.

3 MR. ZAMARIN: Would you read back that answer,
4 please?

5 (Whereupon the Reporter read from the record as
6 requested.)

7 BY MR. ZAMARIN:

8 Q You told him because of the cracks that you couldn't
9 rely on the data that you had; is that what you're saying?

10 A I told him the same thing I've told you, and that
11 is, if the cracks existed then, to me, upon loading there would
12 be a period of settlement where those cracks would close.
13 Following closure of those cracks then he could expect the
14 more normal consolidation process of primary and secondary
15 consolidation.

16 Q And have you reviewed settlement data to see if
17 in fact this theory you have just expounded for us is being
18 borne out by field observations?

19 A What theory are you referring to?

20 Q That first you had a settlement attributable to
21 closing of cracks, then you had the primary and secondary
22 consolidation.

WRB/jbn3

1 A My concern for the cracking came because of con-
2 versations with your consultant, Dr. Peck. So that's not my
3 theory.

4 Q Well, you're the only one that I've ever heard
5 say that the closing of the cracks was an initial settlement,
6 and then the structure and the soil beneath it would proceed
7 into primary, and then eventually secondary, consolidation.

8 MR. PATON: He did say: if there were cracks there.

9 THE WITNESS: I did.

10 MR. ZAMARIN: All right.

11 BY MR. ZAMARIN:

12 Q So I consider that to be your theory, since you're
13 the only one who ever told me about that.

14 And what I'm asking you is whether that theory,
15 and the postulated cracks, is consistent with the observed
16 settlement data over the last -- what is it? -- two years,
17 nearly?

18 A Since surcharge removal?

19 Q Since the imposition in January of '79, wasn't it?

20 A But there has been an awful lot of settlement since
21 January of '79.

22 Q That's right. I'm talking about all the settlement

WRB/jbn4

1 data since January of '79.

2 We've got the settlement during the surcharge,
3 we had the surcharge removal in August, July and August of
4 '79, and then we also have settlement data from August of 1979
5 through the end of September 1980. And I assume you're famili-
6 ar with that settlement data.

7 A We had many conversations about this the last time.

8 Q We sure did.

9 A And you may have the settlement data in the form
10 that you find is convenient to review. I had indicated in my
11 past deposition that I had asked on prior occasions to be able
12 to look at that same data in the same form that you have it.

13 Q You say you have asked to look at it in the same
14 form that I have it? What form is it that you need it in that
15 you don't have it in and can't get it into?

16 A I've indicated it's settlement-versus-time data
17 that we do not have, except for one monument.

18 Q And do you have any quarrel with the statement
19 that that settlement data for that one monument is typical of
20 the curves for all of the monuments?

21 A I've indicated in the past that I prefer not to
22 look at typical data, but to look at the actual data.

WRB/jbn5

1 Q And didn't you also admit in your deposition in
2 one of the previous sessions that all of that data is available
3 to you if you wanted to take the time and make the effort to
4 just look at it?

5 A Hardly did I admit. I thought I had pointed out
6 to you the reasons why it was necessary to look at all the
7 data versus time.

8 Q Okay. I'm a lawyer, not a geotechnical engineer.
9 You told me, as you sit here now, that you wanted
10 to have access to the data, just as I did. Well, I went and
11 looked at it. And it's all in volumes that have been supplied
12 to the NRC. And I don't understand why you can't do that.

13 A Well, then answer my question: Have you seen
14 plots for each of the settlement markers since the time of
15 surcharge removal?

16 Q I'm asking you what you've seen. As soon as you
17 get your lawyer to take my deposition you can ask questions
18 and I'll answer them.

19 A You said you've seen all the data, and I'm question-
20 ing you as to what data you've seen.

21 Q I'm asking you what data is available to you with
22 regard to settlement? We'll go through this again. We did

WRB/jbn6

1 it in one of the previous sessions. But we'll go through it
2 if you can't recall.

3 What data is available to you with regard to
4 settlement of the markers at the diesel generator building?

5 A To my recollection, the data that is available are
6 settlement records for each of the markers from the time of
7 surcharge imposition until the period just after its removal
8 in August of 1979.

9 Then we have one settlement marker which took us
10 to, I think, June or July of 1980. And that's marker DG-3.

11 Then we have a plan view which has the maximum
12 settlement that had been recorded at each of the markers in
13 the submittal of September 14th.

14 I have attempted in my past depositions to indicate
15 to you that I don't feel that is adequate; that I have asked
16 for the plots of time-versus-settlement for all the markers.

17 In several meetings previously it has been indicated
18 that information would be submitted to us.

19 Q Okay.

20 You consider it very important for you to have all
21 of the settlement data; is that right?

22 A Yes.

WRB/jbn7

1 Q Okay.

2 And as you sit here now you say that that hasn't
3 been provided to you; is that right?

4 A Unless it has been in the recent submittal that
5 I have not reviewed, that is correct.

6 Q Okay.

7 And what you're saying is that even if it was
8 something that-- Strike that.

9 Then what you're saying is that, notwithstanding
10 what was in the recent submittal, or setting that aside, that
11 based upon the information that you've gone through, and that
12 is the area plan showing the total settlement and the predicted
13 settlement for all of the markers, and the plots for the
14 markers through August of '79, and the plot for DG-3 through
15 July of 1980, that you didn't have enough information?

16 A That's correct.

17 Q Do you think some other--

18 A One phase of the design that you're going through
19 is the temporary dewatering, and there's a question in my mind
20 what portion of the diesel generator building is being affected
21 by that dewatering and what the settlement markers show.
22 That data that I'm asking for would show that information.

WRB/jbn8

1 Q Okay.

2 We're now talking about -- and how we got onto
3 this was with regard to the curve for the settlement of the
4 diesel generator building from January of 1979 through
5 September of 1980. And now you've brought up temporary
6 dewatering for the first time.

7 What I'm simply talking about is the curve, the
8 settlement-versus-log-time curve. And you indicated that
9 with the information I just went through, that is available
10 to you, you didn't have enough information with regard to
11 settlement.

12 Do you know if any other geotechnical engineer
13 would have considered that to be enough information?

14 A I think you should ask any other geotechnical
15 engineer.

16 Q I'm asking you, sir.

17 A I've told you my feelings. Anyone else would have
18 to answer for themselves.

19 Q So you have no idea whether you are unique in the
20 field of geotechnical engineering in your inability to reach
21 any conclusions based upon that data?

22 MR. PATON: You mean because he doesn't know whether

WRB/jbn9

1 there is any other engineer in the world that shares that
2 view? Is that what you're asking him to answer?

3 MR. ZAMARIN: Would you read the question back,
4 please?

5 (Whereupon the Reporter read from the record
6 as requested.)

7 MR. PATON: I would ask you to clarify what you
8 mean by "inability to reach any conclusions." I think he
9 indicated that the data was not sufficient.

10 Are you equating "inability to reach any conclu-
11 sions" with his statement that he didn't have sufficient data?

12 MR. ZAMARIN: Yes; insufficient for him to reach
13 a conclusion.

14 BY MR. ZAMARIN:

15 Q Do you want to hear the question again?

16 A Yes.

17 (Whereupon the Reporter read from the record
18 as requested.)

19 A I have no idea whether I'm unique. It's my feeling
20 that a responsible geotechnical engineer, in trying to resolve
21 this concern, would ask for similar data.

22 Q Try to resolve what concern?

WRB/jbn10

1 A The concern whether we are in secondary compres-
2 sion, or consolidation.

3 Q And in your opinion would a responsible engineer
4 have done anything with the data that was available to him?

5 A The present data?

6 Q Yes, the present data.

7 A They would have evaluated it similar to the way I
8 have evaluated it.

9 Q Okay. And how did you evaluate the data that was
10 provided to you on September 14th, 1980?

11 A I reviewed it. I also questioned statements that
12 the final load had been applied, as I have previously indi-
13 cated, when the visit to the site showed excavations adjacent
14 to the footings.

15 I also indicated, as you have, in my notes, that
16 valuable information on settlement behavior with time would
17 come with observing the ehavior after temporary dewatering.
18 You would have that information: we would not.

19 Q Describe the investigation that you conducted with
20 regard to that excavation that you say you saw adjacent to
21 the footings. Did you say you saw that excavation?

22 A I saw that.

WRB/jbn11

1 Q Okay. Tell me about the excavation you conducted
2 with regard to that.

3 A I have not indicated any investigation. I indicated
4 the recognition that you have unloaded the area by that
5 excavation, and I would try and evaluate the impact of that
6 on settlement.

7 Q Would it be important to you to know the extent
8 of that excavation?

9 A Yes.

10 Q Would it be important for you to know the duration
11 of that excavation?

12 A Yes.

13 Q You didn't do any investigation to find out those
14 answers?

15 A No.

16 Q You didn't ask anybody at Consumers Power Company
17 those questions?

18 A I've asked them for the data, the settlement data,
19 as far back as July, and I've not received that.

20 Q Well I think you have.

21 I'm asking you about these questions. You didn't
22 ask anybody about -- questions about those excavations?

WRB/jbn12

1 A When I obtain the settlement data that I have
2 asked for I will try and see in the behavior any reflection
3 of a possible excavation. And at that time I will raise
4 those questions.

5 Q Did you ask anybody about those excavations,
6 questions about those excavations?

7 A No.

8 Q Did you ask anybody in Region 3 about those exca-
9 vations?

10 A I have indicated to you in the past that it was in-
11 dicated by the Region 3 inspector that there were excavations
12 within the building as well as the one I saw outside.

13 Q What did he tell you about the dimensions of those
14 excavations within the building?

15 A He did not go into the details.

16 Q What did he tell you about the duration of those
17 excavations within the building?

18 A He said nothing of the duration.

19 Q You didn't ask?

20 A I did not.

21 Q Wasn't it important to you?

22 A It's important if I see a reflection in the settle-

WRB/jbn13

1 ment data.

2 Q Does Region 3 ever give you any information from
3 the site?

4 A Me personally?

5 Q Well, information that ultimately comes to you
6 somehow.

7 A We now receive a great deal of information from
8 all our regions, our Inspection and Enforcement regions, on
9 non-conformance reports.

10 Q Is that all that you receive from them?

11 A There would be occasions when we would receive
12 information from them on some problem that would develop dur-
13 ing construction.

14 Q All right.

15 What have you received from Region 3 since November
16 of 1979 with regard to the soils issue at the site?

17 A I have seen non-conformance reports. I'm not
18 sure what is in the records that I assumed on Midland around
19 November of 1979 which is in there. I don't recall anything
20 other than non-conformance reports having been received from
21 Region 3.

22 Q I'm asking you what you've received since November

WRB/jbn14

1 of 1979.

2 A Other than non-conformance reports I cannot recall
3 anything.

4 Q What non-conformance reports were received from
5 Region 3 since November, 1979?

6 A Which ones?

7 Q Yes.

8 A A tremendous volume.

9 Q Tell me what the content of them was.

10 A It covers many aspects unrelated to my work.

11 Q Just tell me about the ones related to your work.

12 A I can only recall one or two having to do with
13 not meeting compaction criteria.

14 Q When were those NCR's written?

15 A I don't recall.

16 Q Do you know if they were written in 1980?

17 A I don't recall.

18 Q Do you know if they were written in 1979?

19 A I would guess they were 1980.

20 Q And do you know with respect to what area of the
21 plant they pertain?

22 A No. I recall having read them and not having

WRB/jbn15

1 felt it was necessary to pursue in my work.

2 Q When did you first request all of the settlement
3 data that you described to me a few moments ago that you
4 requested?

5 A At previous meetings with Consumers.

6 Q All right. Tell me when the first one was at
7 which you made that request.

8 A To my knowledge it would have been in July, the
9 end of July.

10 Q 1980?

11 A Yes.

12 Q Was there any written request made to Consumers
13 with regard to that information?

14 A No. It's now written in my transcript, which was
15 in October.

16 Q Oh, I see. So when we took your deposition you
17 said--

18 A (Interposing) I said the same thing.

19 Q So it's written in your transcript.

20 And that's when I was asking you questions?

21 A That's correct.

22 Q Who did you request that information from at that

WRB/jbn16

1 meeting in July?

2 A Dr. Afifi.

3 Q Was anybody else present during the conversation?

4 A I think everyone at the meeting was present.

5 Q During that conversation when you requested it?

6 A There was an exchange, after the presentations
7 were made, where I had indicated I thought that information
8 was important.

9 Q Okay.

10 Precisely what information did you request?

11 A Actually, I have given to Darl Hood a list of that
12 information. And it was felt through deposition we could
13 obtain that information.

14 That information includes a continuation of the
15 piezometer readings up to the present time; it includes a
16 continuation of the settlement readings up to this time.

17 I've also identified certain drawings, full-scale
18 working drawings that you had previously provided to Dan
19 Giller, which I had asked for additional information to be
20 added onto those drawings.

21 Q Are you aware that on August 4th, 1980 that a
22 request for information was sent to Consumers Power Company,

jbn18

1 Q Excuse me. That letter was the enclosure with the
2 August 4th letter from Schwencer?

3 A That's correct.

4 "A contour map showing the settlement
5 configuration of the diesel generator building
6 furnished by the applicant at the meeting of the
7 27th and 28th February 1980 indicates that the base
8 of the building has warped due to differential
9 settlement. Additional stresses will be induced
10 in the various components of the structures. The
11 applicant should evaluate these stresses due to
12 the differential settlement and furnish the compu-
13 tation and results for review."

14 My point is to make that evaluation you would have
15 had to use the most recent settlement values.

16 Q You're not trying to tell me that you interpret
17 that as a request for these graphs of the settlement data
18 that you just a moment ago said should have been provided to
19 you?

20 A I have indicated that that document does not
21 specifically identify those documents. I have indicated to
22 you that there was still a concern for settlement in that

jbn17

1 to Mr. Cook from Mr. Schwencer and that that request for
2 information is strikingly silent with regard to a request for
3 any settlement data?

4 A That document does not specifically ask for the
5 graphs that I have just identified, but I don't think the
6 document is silent about settlement.

7 Q All right.

8 I see at least 16 pages of information requested
9 in addition to Mr. Schwencer's letter. And I sure don't see
10 anything in here that asks for those graphs.

11 A May I see the report, please?

12 Q Sure.

13 (Document handed to the witness.)

14 A The point I would hope to make is you are correct
15 that this document does not specifically identify those
16 graphs. But I feel it does address the settlement of the
17 diesel generator building. And I'll read in here where I
18 feel it is addressed.

19 Q Okay. You do that.

20 A We're talking about the diesel generator building,
21 which is on page 4 of the Corps of Engineers' letter dated
22 7 July 1980, and it says--

jbn19

1 report.

2 Q Is it possible that at that meeting, I believe it
3 was at the end of July where you asked Dr. Afifi for infor-
4 mation, that you stated that you were planning to ask for
5 information as opposed to requesting information?

6 A It was my recollection it was at that meeting
7 where it was indicated that you had 54 or 56 additional
8 borings and were going to submit them some time in September.
9 And it was my recollection that I asked at that same time
10 that that information be submitted that you would update
11 these graphs.

12 Q Now so I understand you correctly, it is your
13 opinion as a geotechnical engineer that the settlement data
14 is very important in helping decide whether the soil beneath
15 the diesel generator building is in secondary consolidation.
16 Is that right?

17 A I think it is an important piece of information
18 to permit you to come to that conclusion, yes.

19 Q Okay.

20 Do you have any explanation why then that data
21 wasn't formally requested in the form which you wanted before
22 borings were requested in that area?

jbn20

1 A It seems to me that this data has been submitted
2 up to a certain time. That was after August 1979. And I
3 don't understand the difficulty and the formality of request-
4 ing an updating of that data, other than requesting at a
5 meeting such as I did that this information be updated and
6 submitted.

7 Q I think I understand why you can't understand that.
8 I think it's evident in the record.

9 You indicated that you gave something to Darl
10 Hood, some kind of a document or a list that you said you
11 thought you could get certain information through depositions.
12 Is that right?

13 A I gave Darl Hood a list of information which I was
14 going to have Consumers provide to us. When he had received
15 that information it was felt, rather than make it an inter-
16 rogatory for that information that we could ask for that
17 information in deposition.

18 Q Now was that information something that you had
19 decided was important for the purposes of the hearing?

B3

20 A Yes.

21 Q Why was that information important for purposes
22 of the hearing?

jbn21

1 A Because that information will help resolve the
2 issue whether the plant fill is in secondary consolidation.

3 Q Would it have helped to resolve that issue to the
4 same extent a month ago?

5 A I don't understand your question.

6 Q Well, you said that that information would help
7 resolve the issue of whether the plant fill is in secondary
8 consolidation. And would it have provided just as much
9 assistance in making that determination a month ago?

10 A It would be of assistance a month ago.

11 Q Would it have been of similar assistance four
12 months ago?

13 A It would have been of assistance but of less
14 assistance because of the four months of readings that were
15 not now there.

16 A Okay.

17 And why is it then that but for the fact of pre-
18 paring for the hearing that you didn't take the time to make
19 this list and present it to Consumers and ask for the infor-
20 mation?

21 A A portion of the information I had already asked
22 for in a meeting with Consumers.

jbn22

1 Q You're referring to the conversation with Sherif
2 Afifi at the end of July?

3 A That's correct.

4 Q And what about the rest of the information?

5 A It is information that is more related to analysis
6 of pipe deformation which would be helpful.

7 Q Were you concerned at all about pipe deformation
8 analysis three months ago?

9 A Yes.

10 Q Why didn't you ask for that information then?

11 A Which information? The information--

12 Q -- that you just gave to Darl Hood to ask for.

13 A I think that it was three months ago that I gave
14 it to Darl Hood.

15 Q What has he been doing with it for the last three
16 months, to your knowledge?

17 A I thought I had indicated that upon receiving that,
18 the decision was made not to make that request in interroga-
19 tory but to attempt to obtain that information in deposition.

20 Q Who made that decision?

21 A Could I speak to Counsel?

22 Q Surely.

jbn23

(Witness conferring with Mr. Paton.)

Q Do you recall what the last question was?

A Would you repeat it, please?

(Whereupon, the Reporter read from the record as requested.)

BY MR. ZAMARIN:

Q That was the decision to save it for deposition.

A To my knowledge it was a decision that was discussed between Darl Hood and Counsel and myself.

Q By Counsel you mean Mr. Paton?

A That's correct.

Q And you say this was information that you gave to Darl Hood several months ago?

A Yes.

Q And did you feel that it was appropriate to not request this information from Consumers at the time you felt that you needed it for part of your analysis or review?

A I had felt it appropriate to request it back in July, and I did. It was not provided, and I felt that in my deposition where we discussed this same issue, I have indicated the same information, that we would get it.

I have been wrong, and I have now come to the

jbn24

1 conclusion that the only way I'll get it is to formally write
2 and ask you for it.

3 Q You would stake your reputation on that. Right?

4 MR. PATON: You don't have to answer that question.

5 THE WITNESS: I do not answer the question.

6 BY MR. ZAMARIN:

7 Q You say you refuse to answer the question?

8 A Yes.

9 Q When you say you're certain, what do you mean by
10 that?

11 A Would you repeat my statement, please?

12 (Whereupon, the Reporter read from the record
13 as requested.)

14 THE WITNESS: I don't recall the word "certain"
15 being used in that.

16 BY MR. ZAMARIN:

17 Q Okay.

18 So when you come to conclusions you're not certain
19 about things. Is that what you're saying?

20 A When the conclusions involve other people I cannot
21 be certain.

22 Q Now you say that you made the request for this

jbn25

1 information at the end of the July meeting in a conversation
2 with Sherif Afifi. Right?

3 A That's correct.

4 Q And did he say he'd get that information to you?

5 A I understood that he understood that we had re-
6 quested it and that an attempt would be made to submit it
7 with the boring logs.

8 Q Did he tell you that he'd get that information to
9 you?

10 A He did not specifically say he would send it.

11 Q Did you ever see anybody from Bechtel or Consumers
12 again after July 1980?

13 A Yes.

14 Q When was the next time you saw anybody from
15 Consumers or Bechtel?

16 A Probably at the end of August.

17 Q Who did you see?

18 A The people that attended the meeting in Midland.

19 Q You mean the borings meeting?

20 A The appeal meeting.

21 Q Did you mention anything to anybody at that time
22 about where the information you requested at the end of July

jbn26 1 was, or how much longer it was going to take to get it?

2 A The format of the meeting was not suited for that
3 exchange. I did not.

4 Q Your answer is you did not ask anybody or mention
5 anything. Is that right?

6 A Right, plus what I've added.

7 Q Did you ever pick up the telephone and call any-
8 body and say, "Gee, whiz, did you forget about that informa-
9 tion you promised me, or that you were going to get to me,"
10 or "How much longer am I going to have to wait for it?"

11 MR. PATON: You mean subsequent to the time that
12 he has indicated he has asked for it in the past?

13 MR. ZAMARIN: I would assume so, yes. It was after
14 July of 1980.

15 THE WITNESS: I have discussed it in my deposition
16 hearings, the same type of information. That's the next time I
17 can recall, since the July meeting, of specifically talking
18 about it.

19 BY MR. ZAMARIN:

20 Q So you never picked up the telephone and called
21 anyone and said, "Gee, you said you were going to get me some
22 information," or "I asked for some information at the end of

jbn27

1 July and I still don't have it. Where is it?"

2 A That is correct.

3 Q There was a meeting on September 14th, 1980. Right?

4 A Not with Consumers.

5 Q Oh. Who was at that meeting?

6 A September 14th?

7 Q Wasn't it September 14th?

8 A I don't recall any meeting at that time.

9 Q Was there any meeting in September 1980 either with
10 NRC personnel or with Consumers?

11 A Not that I recall.

12 Q When was the next time you saw anybody from Consumer
13 or Bechtel after August 1980?

14 A Probably in my deposition in October.

15 Q Did you talk to anyone from Consumers or Bechtel
16 between August 1980 and your deposition in the middle of
17 October 1980?

18 A Would you repeat the question?

19 Q Did you talk to anybody from Consumers or Bechtel
20 between August of 1980 and the time of your deposition in the
21 middle of October of 1980?

22 A I have indicated in August we had a meeting where

jbn28 1 there was some discussion. If I recall correctly, I had no
2 additional contact with either Consumers or Bechtel.

3 Q Did you ever write anybody at Bechtel or Consumers
4 a letter or postcard and ask where the information was that
5 you requested at the end of July 1980?

6 A No.

7 Q Did you ever ask Darl Hood if he had discussed
8 information that was to be supplied by Consumers or Bechtel
9 and the schedule or any slippage in the schedule with regard
10 to it?

11 A On this matter? No.

12 Q Why didn't you do any of these things if you wanted
13 this information and considered it important?

14 A I thought by asking for it in July that I would
15 receive it. I thought in my own deposition when we had
16 similar discussions now that when I again raised it in the
17 presence of Bechtel and Consumers that it would be submitted.
18 I have indicated that my thoughts were wrong, and now my
19 conclusion is if I want it I would have to formally write for
20 it.

21 Q The time of your deposition was in the middle
22 of October, and you're saying that you requested this stuff in

jbn29

1 July, and I'm really asking, if this was so important to you,
2 why didn't you follow it up at all, a phone call, a word to
3 someone, a word to Darl Hood, or a letter, a postcard, or
4 anything between July and October 16th, 1980?

5 A Repeat your question, please.

6 (Whereupon, the Reporter read from the record
7 as requested.)

8 THE WITNESS: It is important information. I did
9 not formally request it. It was my intention to seek this
10 information in the deposition of Bechtel employees, and that
11 is how I had planned to follow it up.

12 BY MR. ZAMARIN:

13 Q In October of 1980 you planned to follow it up by
14 deposition of Bechtel employees?

15 A I think that decision to obtain it in deposition
16 was made before October.

17 Q In August of 1980 had you planned to obtain it by
18 following up in depositions of Bechtel employees?

19 A I think the decision was made at the end of
20 September. I'm not sure of the date.

21 Q Were you aware at the time you say you had this
22 conversation with Sherif Afifi in July of 1980 that there was

jbn30

1 a substantial amount of other information that was being re-
2 quested by the NRC and the Corps from Consumers and Bechtel?

3 A In July of 1980?

4 Q Yes.

5 A I am aware of information that had been requested
6 in a June 30th letter. I'm now referring to what I know in
7 Geotechnical Engineering.

8 Q I'm not referring to information that was specifical
9 requested in July of 1980. I'm talking about outstanding
10 requests for information.

11 You have already looked at one document of 16 pages,
12 that letter from--

13 A That's dated August 4th.

14 Q That's right. That was dated I believe July 27th
15 but the transmittal on it was August 4th.

16 A That's correct.

17 Q And you're aware that--

18 MR. PATON: July 7th.

19 MR. ZAMARIN: You're right.

20 BY MR. ZAMARIN:

21 Q But you're aware that there were other requests
22 for information from Consumers and Bechtel outstanding, aren't

eb1
ls jbn30

1 you?

2 A At what time frame are you referring to?

3 Q At the end of July 1980.

4 A I'm saying from my recollection, in July the out-
5 standing information was because of the June 30th letter.

6 They had not yet received the August 4th letter.

7 Q And those were the only requests for information
8 that you were aware of at that time?

9 A That's correct.

10 Q And when did you first become aware of that July
11 7th, 1980 Corps letter that was transmitted to Consumers on
12 August 4th, 1980?

13 A There were months prior to that where the Corps
14 efforts and my efforts to coordinate it were taking place
15 that ultimately resulted in that document.

16 Q You had input into that July 7th, 1980 letter?

17 A I did.

18 Q Was it an oversight that you didn't request the
19 boring or the settlement data in that letter?

20 A Yes.

21 Q Do you have a copy of the document that you gave
22 to Darl Hood with the information that you wanted to get from

eb2

1 Consumers or Bechtel witnesses during deposition?

2 A I should have in my files.

3 Q Was that something that you produced to us yester-
4 day?

5 A It was not.

6 Q Was that something that you produced to us at the
7 last taking of your deposition?

8 A It may have been. I don't recall.

9 Q Can you describe the document for us?

10 A It's a single piece of paper which I have listed
11 on it information that I had asked Consumers to submit.

12 (Brief recess.)

13 MR. ZAMARIN: Back on the record.

14 BY MR. ZAMARIN:

15 Q Who is B. L. Granier? G-r-a-n-i-e-r.

16 A May I see it, please?

17 Q Sure.

18 (Handing document to the witness.)

19 A B. L. Granier is an employee of NRC who has
20 responsibility with regard to contract administration.

21 Q I believe you said that you had indicated to some-
22 one the names of individuals that you thought ought to be

eb3

1 deposed for purposes of this hearing. Is that right?

2 A I don't recall having indicated that but yes, I
3 have given names that I felt were appropriate for deposition.

4 Q To whom did you give those names?

5 A To Mr. Paton.

6 Q And whom have you indicated that you thought
7 would be appropriate to depose?

8 A Dr. Afifi, Walter Ferris, B. Dahr, D-a-h-r, Thiru
9 Thiruvengadam.

10 Q Anyone else?

11 A Yes. Mr. Martinez, Dr. Peck, Dr. Hendron,
12 Dr. Davidson, Dr. Wood, Dr. Gould. That's all I can recall.

13 Q Why did you think Sherif Afifi's deposition should
14 be taken?

15 A Because of his position, to have knowledge of the
16 plant fill settling problem.

17 Q Anything in particular with regard to that know-
18 ledge that you thought should have been inquired into?

19 A To try and reach an understanding of what caused
20 the problem and to understand and be assured that it was
21 going to be safely resolved.

22 Q What did you learn about understanding or being

eb4

1 assured that it would be safely resolved by listening to his
2 deposition?

3 MR. PATON: Could I have the question again,
4 please?

5 (Whereupon, the Reporter read from the record
6 as requested.)

7 THE WITNESS: There are many aspects. I would have
8 to take his testimony and go thorough each of those aspects
9 to recall fully.

10 BY MR. ZAMARIN:

11 Q Can you recall as fully as you can just sitting
12 here, without going through that, for us?

13 A One important revelation to me was his understand-
14 ing of what had to be provided to the NRC with regard to
15 information on the remedial fixes. It was his understanding
16 because it was a 50.54(f) action that it was only necessary
17 to respond to direct questions from the NRC rather than
18 submit information that would cover the entire situation and
19 provide data that would assure the staff that it was safe.

20 Q Anything else?

21 A I would have to review my notes.

22 Q I am handing you what has been marked Consumers'

eb5

1 Group Exhibit Number 20 for identification which contains your
2 notes.

3 (Handing document to the witness.)

4 Do you want to take a minute and glance over those?

3.340

5 (Pause.)

6 A One issue that I recall was that Dr. Afifi at
7 first indicated computations of settlement before the sur-
8 charge was not made and then felt well, maybe they had been
9 made but he did not recall.

10 Q What's the significance of your telling me about
11 that?

12 A The significance of it is that it would be expected
13 in normal engineering practice to make those computations
14 and I was trying to determine whether the settlement range
15 indicated, that Dr. Peck had indicated in one of the meetings,
16 was based on those calculations.

17 Q Anything else?

18 A One piece of information that I thought was informa-
19 tive was to recognize that settlement calculations beneath
20 the caissons were now being made by Dr. Chen.

21 Q What's the significance of that?

22 A The timing of the computations, the question of

eb6

1 whether they were being done in response to our questions or
2 whether they were done because of the need to do that work
3 before you undertook that remedial measure.

4 Q And in what way is that important to you?

5 A The normal engineering practice would be to make
6 the computation before you went and did the work.

7 Q Would that affect your appraisal of the technical
8 adequacy of the fix if in fact it wasn't originally intended
9 to be done before they did the work but in fact it was going
10 to be done before they did the work?

11 A Would you repeat the question, please?

12 MR. ZAMARIN: Would you read it back, please?

13 (Whereupon, the Reporter read from the record
14 as requested.)

15 THE WITNESS: If it were going to be done before
16 the work, that would be acceptable except that as a reviewer
17 on the adequacy of a remedial fix I would feel it necessary
18 to know the information before I could make an evaluation.

C3

19 BY MR. ZAMARIN:

20 Q You see to indicate to me, however, that it was of
21 some particular interest to you to know whether that calcula-
22 tion was going to be done pursuant to a question that was

eb7

1 asked or was it going to be done in the normal course of
2 Bechtel doing their design for the fix.

3 And my question is as long as it's going to be
4 done, why does it matter to you what the motivation is?

3.420

5 A It's my understanding that in responding to the
6 question about those settlement computations it was indi-
7 cated by Dr. Afifi that it was being done in response to one
8 of our questions.

9 Q And of what significance to you as a technical
10 reviewer is that information?

11 A I guess I now have the question of myself, based
12 on information that I had been provided before, that prior
13 to December 6th, 1979, Consumers was all set to go out with
14 a contract to do the underpinning, and so I look at that
15 information and I look at a request in August of 1980 of
16 asking for settlement computations and being told that they
17 are now being done in response to one of our questions.

18 Q Did anyone ever tell you that they weren't going
19 to be done prior to the work being performed even if we
20 hadn't had the December 6th order?

21 A No one had told me.

22 Q Has anyone told you that to date?

eb8

1 A No.

2 Q I still want to know what the significance to you
3 as a technical reviewer is as to the motivation or the reason
4 why Bechtel was going to do the settlement calculation so
5 long as it was done.

6 A One of the issues in the Show Cause Order is to
7 indicate that we have not received all the information we
8 need to be able to agree on its acceptance. The magnitude
9 of settlement under the caissons to me is one of the pieces
10 of information that would be needed to be known.

11 Q How much work had been done out there that
12 shouldn't have been done before those calculations had been
13 made?

14 A I'm not aware.

15 Q Were you aware of any?

16 A Well, I know temporary dewatering has been done.

17 Q I'm talking about, in your opinion, how much work
18 has been done that you believe should not have been done
19 without first having the settlement calculations to which you
20 now refer?

21 A I would have hoped we could reach agreement on what
22 has been proposed for temporary dewatering before you went

eb9

1 ahead and performed it.

2 Q Do you recall what my question was?

3 A I do, partly.

4 Would you read it back, please?

5 (Whereupon, the Reporter read from the record
6 as requested.)

7 THE WITNESS: It is my understanding the temporary
8 dewatering that's being conducted to prepare the site of the
9 auxiliary building for the underpinning work.

10 BY MR. ZAMARIN:

11 Q Is that your complete answer?

12 A Yes.

13 Q Okay.

14 What I asked for is what work, if any, had been
15 done which, in your opinion as a geotechnical engineer,
16 should not have been done before that settlement data was
17 calculated. And are you saying that temporary dewatering
18 should not have been done as a matter of geotechnical en-
19 gineering prior to the calculation of settlement data?

20 MR. PATON: Those are two distinct questions.
21 You ask him one and then you say-- You know, you asked him
22 two fairly distinct questions.

eb10

1 MR. ZAMARIN: The reason for that is that I don't
2 think his answer was responsive to my question. I was asking
3 him if that answer applies to the question I asked him.

4 MR. PATON: Well, if he understands it completely
5 enough.

6 THE WITNESS: I feel it does tie to the question
7 that you've asked me in that the temporary dewatering is
8 intended to be done in the area where you're going to do your
9 underpinning.

10 BY MR. ZAMARIN:

11 Q Why is it being done there?

12 A Why is what being done there?

13 Q The temporary dewatering?

14 A To lower the water table in that area so that the
15 excavations can be conducted.

16 Q All right.

17 And what is wrong from the geotechnical engineering
18 viewpoint with doing that before having settlement data,
19 if anything?

20 MR. PATON: Let me ask for a clarification. You
21 mean from his viewpoint as a geotechnical engineer for the
22 NRC staff? I mean are you relating it to the Midland case

eb11

1 in this case?

2 MR. ZAMARIN: Sure.

3 MR. PATON: It's just not a generic question?

4 MR. ZAMARIN: No.

5 THE WITNESS: You used the words "what is wrong."
6 I don't know whether it is wrong or not in that I'm not fully
7 aware of all your plans for temporary dewatering.

8 The Corps has a question in their August 4th report
9 that went to you about temporary dewatering. The connection
10 is that dewatering is being done for the underpinning and
11 rather than run into the problem such as we've had with the
12 diesel generator building of having problems with the dewater-
13 ing, I said it would be a better position to have reached an
14 agreement on your plans for temporary dewatering.

15 BY MR. ZAMARIN:

16 Q So then in your opinion there is nothing wrong
17 from the viewpoint of geotechnical engineering or technical
18 review with having not done settlement calculations prior to
19 the start of temporary dewatering. Is that correct?

20 MR. PATON: I object to the form of the question
21 and your use of the word "wrong." It has all kinds of
22 implications. It could be legally wrong. Do you mean, for

m ebl2 1 example, wrong from your point of view, or wrong from his
2 point of view considering the requirements for his reviews
3 for all wrongs? Is there anything wrong under all concepts
4 of the word "wrong"?

5 MR. ZAMARIN: If he says "Yes" I'm going to ask
6 him for each one of them, and his basis for it.

7 THE WITNESS: I'd like to think about it for a
8 while.

9 (Pause.)

10 I don't think it is wrong. But what I do think
11 is if both of us have a real concern for the safety of the
12 structures then it is advantageous to reach agreement on the
13 steps that you will go through to complete the underpinning
14 operations before they are done.

15 BY MR. ZAMARIN:

16 Q Do you know what the purposes of the temporary
17 dewatering are?

18 A It's my understanding the purposes of it is to
19 prepare the area for the underpinning operation. That is one
20 part of it.

21 Q What's another part of it?

22 A I think it is being used to show the magnitude of

eb13

1 settlement we could expect under dewatering which would be
2 accomplished with the final dewatering system.

3 Q Would you like to know that in performing settle-
4 ment calculations?

5 A Yes.

6 Q Anything else?

7 A Anything else with regard to the temporary de-
8 watering?

9 Q Yes.

10 A That is all I can recall.

11 Q Now a moment ago you said that you didn't think
12 that temporary dewatering should have been done prior to
13 settlement calculations and now you've indicated or at least
14 recalled that one of the purposes of temporary dewatering
15 was to provide data for the settlement calculations.

16 A I don't recall having stated-- I don't recall
17 having said that the temporary dewatering should not have been
18 done until the settlement calculations had been made.

19 Q Earlier I understood you to say that you didn't
20 think temporary dewatering should have been done prior to the
21 settlement calculations with regard to the caissons. Is that
22 right?

eb14

1 A No, I did not. I think I have indicated that I
2 don't think the temporary dewatering should have been done
3 until there was an agreement on its adequacy with the staff.

4 Q I see.

5 So was there anything else that was done that you
6 feel might have been compromised or not done properly or
7 adequately because temporary dewatering was done without
8 having had this concurrence by the staff?

9 A Would you repeat your question, please?

10 MR. ZAMARIN: Would you read that back?

11 (Whereupon, the Reporter read from the record
12 as requested.)

13 THE WITNESS: I know of no other things that were
14 done.

15 BY MR. ZAMARIN:

16 Q Prior to the start of temporary dewatering, did
17 anyone for Consumers or Bechtel talk to the staff about it?

18 A There were discussions.

19 Q Did anyone from the staff, to your knowledge, ever
20 tell Consumers that there was any concern about the temporary
21 dewatering, about starting the temporary dewatering?

22 A I think the questions in the Corps report reflect

eb15

1 concern for certain information.

2 Q The question was whether anyone ever told Consumers
3 that there was any concern about starting temporary de-
4 watering.

5 A I repeat my answer in part in that I think
6 Consumers was told with the August 4th report that there was
7 concern with temporary dewatering, but no one has expressed,
8 to my knowledge, directly to Consumers a concern for the actual
9 starting of it.

B4

10 Q Do you recall or know when the temporary dewatering
11 was started by Consumers?

12 A I don't recall the exact date. I recall seeing a
13 notice to the ASLB Board that it was going to be implemented.

14 Q And that was some time well prior to August 4th,
15 1980, wasn't it?

16 A I think it was before August, yes.

17 Q You indicated a little earlier that you felt there
18 was some significance to the fact that Consumers was about
19 ready to let a contract in December 1979 or prior to December
20 6th, 1979, for the underpinning work, and that this was prior
21 to them having developed a complete design. Is that right?

22 A Would you repeat the question, please?

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(Whereupon, the Reporter read from the record
as requested.)

THE WITNESS: I think the concern I expressed was
to reach an agreement on the acceptability of the fix for
those structures, certain details would have to be known by
us, and so at that time those details were not known by us
and it was difficult to be in a position to say what was
going to be done was acceptable.

MR. ZAMARIN: Okay.

BY MR. ZAMARIN:

Q And what did this mean to you?

A It meant that we did not have enough information
to decide whether the proposed fix was going to be acceptable
or not.

Q Does it have any significance to you as you sit
here now?

A That problem still exists.

Q Did anyone ever tell you that the contract that
Consumers was going to let included not only actual per-
formance of the fix but the design as well?

A Would you repeat your question, please?

Q Did anyone ever tell you that the contract that

eb17

1 Consumers was going to let was to provide not only for per-
2 formance of the fix but for the design of the fix as well?

3 A Your words, if I remember them correctly, is "Did
4 anyone tell me." I do not remember anyone telling me.

5 Q Okay.

6 Did you ever come to learn that?

7 A I think I have seen it in documents obtained from
8 you, that that may have been your intention.

9 Q Okay.

10 So it would have been more than difficult to pro-
11 vide you with details of the fix before they let that contract
12 if in fact the fix hadn't been designed, wouldn't it?

13 A It would be difficult for you but it is also
14 difficult for us to say what you are now going to do in the
15 remedial fix without knowing if it is acceptable.

16 The normal way in engineering practice is to do
17 the design and then do the construction. If we are involved
18 in a review of that design such as at the CP stage, we would
19 have to know the details of that design.

20 Q Okay. Let me take you through this:

21 I seem to understand you to say that you thought
22 it was significant that Consumers was going to let a design --

eb18

1 let a contract before they gave you details of the fix.

2 What I'm saying is--

3 MR. PATON: I don't think he said that. You can
4 ask the question but I don't think that's what he said. You
5 can ask him if you want to but I don't think he said that.
6 That's a twist. That's different.

7 Ask him if you want to, or don't ask him, but I
8 don't think that's what he said.

9 THE WITNESS: I don't think it's what I said
10 either. I think I have indicated that it was indicated in
11 Dr. Afifi's deposition that the settlement computations
12 were now being made in response to our questions.

13 BY MR. ZAMARIN:

14 Q You told me that you considered it significant
15 that prior to December 6th, 1979, that Consumers was going
16 to let a contract for the remedial fix, and that at the time
17 they were going to let that contract that they had not pro-
18 vided you with details, the details were not known to you
19 with regard to that fix, and that you didn't think that that
20 was an acceptable way of doing things.

21 But yet now you tell me that you also know that
22 that contract that they were going to let was not only for

eb19

1 doing the fix but for designing it.

2 And so what I'm asking you is how in the world can
3 you criticize them for not giving you details before letting
4 the contract which was for the design of those details?

5 A I don't know whether anybody has criticized them
6 as much as they have faced the facts that we, NRC, are being
7 asked to approve a design that in fact has not been made yet.

8 Q You made a comment about this contract being let
9 prior to December 6th, 1979, and that's what I'm directing
10 your attention to now, and you said that had significance to
11 you because they were going to let a contract without having
12 first given you details of the design.

13 What I'm saying is if in fact that contract was
14 for someone to do the design, how in the world could they
15 have given you the details before the design was done, before
16 it was contracted to be done?

17 MR. PATON: He just answered the question.

18 MR. ZAMARIN: No, he didn't.

19 MR. PATON: He said the significance to him was
20 he is supposed to be appraising the design and by your own
21 statement -- on December 6th, '79 -- you are now telling him
22 that the design didn't exist. And he said the significance

eb20

1 was he's got to appraise the design to know whether it can
2 meet his approval. And the design doesn't exist. That's
3 exactly what his problem is.

4 MR. ZAMARIN: You're missing an element. He said
5 the contract shouldn't have been let before they reached
6 acceptance on the details of the fix. It will be borne out
7 in the record.

8 If you don't think that's what you said, that the
9 contract shouldn't have been let before the details of the
10 design had been provided and they were able to reach
11 acceptance on the details of the fix, are his words.

12 BY MR. ZAMARIN:

13 Q And my question is: If they didn't have the de-
14 sign yet and the contract was for provision of the design,
15 how in the world could there be any significance whatsoever
16 to the fact that they hadn't give you details of the design
17 prior to the letting of the contract for the design?

18 A You're going to have to repeat your question,
19 and I would ask if you would make it more specific.

20 Q I'll make it short and make it to the point.

21 How could there be any significance whatsoever
22 to Consumers' failure to give you details of a design before

eb21

1 letting a contract for that design?

3.091

2 A To Consumers, there may not be any significance
3 but the significance to me in my position is I'm being asked
4 to approve a design as being acceptable for the Midland pro-
5 ject when in fact it has not yet been submitted.

4.090

6 Q My question was-- I tried to keep it short.
7 Keep in mind the time frame.

8 You said that before December 6th, 1979, Consumers
9 was going to let a contract and that you thought it was
10 significant that they were going to let that contract before
11 they had given you details of the design. And I'm saying how
12 in the world could there be any significance to their failure
13 to have given you details of a design before they let the
14 contract for the design?

15 A I guess the significance that I'm indicating is
16 if a contract is given out for design and it's to the same
17 contractor who does the construction, would the construction
18 then be completed before we were given the design details?

19 I don't know the relationship that you had in your
20 contract. I have attempted to obtain that information.

21 Q Can you give me every fact or every rumor or every
22 suggestion that you have that would lead you to conclude

eb22

1 that the work would be done before you were provided with the
2 details and the opportunity to review the design?

3 A It was my understanding from a statement by
4 Mr. Keeley at one of the meetings that prior to December 6th --
5 I think the date he gave was December 5th -- there was a
6 contract to go to an underpinning contractor, and based on
7 that statement, it's my feeling that you were already pre-
8 pared to go and start the remedial fix for that area.

9 Q Have you since learned that that impression or
10 understanding that you have is wrong?

11 A It was wrong in the sense that it came to light
12 later on that design aspects for that work, to my understand-
13 ing, are going to be developed by the same underpinning
14 contractor.

15 Q And that the reference to that contract was with
16 regard to doing that design, too. Right?

17 A I don't know for sure because I've not been pro-
18 vided those details.

19 Q Have you asked anybody if that was the case?

20 A I've asked Dr. Afifi in his deposition.

21 Q And what did he say?

22 A He indicated that he knew construction

eb23

1 specifications existed for that work, but he was not aware
2 of whether construction plans existed.

3 Q All right.

4 Between the time of Dr. Afifi's deposition and
5 December 5th, 1979, when you first heard about that, who else
6 did you ask?

7 A We asked Consumers in the August 4th, 1980 report.

8 Q What did you ask them in that report?

9 A What are the plans for doing this work, what are
10 the design details?

11 Q What I'm saying-- My question is: Who else did
12 you ask whether that contract that was mentioned on December
13 5th, 1979, dealt with design or simply with going straight
14 into construction work?

15 A The only one that I've been able to attend in
16 deposition has been Dr. Afifi's. I would have asked Walter
17 Ferris if he had been made available at the time scheduled.
18 I would have asked Mr. Wanseck if he were available at the
19 time.

20 But I also feel the question has already been
21 asked on a more formal basis in the August 4th report.

22 Q Did it ever occur to you to ask Mr. Keeley about

eb24

1 that on December 5th, 1979?

2 A I've had very little contact with Mr. Keeley.

3 Q Well, wasn't that when you heard it from him?

4 A That was when I first heard it from him, yes.

5 Q It didn't occur to you to ask him about it, did
6 it?

7 A To ask him what?

8 Q Whether he was talking about a contract to start
9 right into construction or whether they were going to have
10 a design done first that you could look at.

11 A I feel the questions that have been subsequently
12 asked, particularly the August 4th letter, have asked for
13 that information.

14 Q The question was why didn't^{you} ask him anything
15 in December 1979?

16 A I wasn't speaking to Mr. Keeley in December of
17 1979.

18 Q To whom did he make the statement to which you
19 referred with regard to that contract?

20 A He made the statement, if I recall correctly,
21 in February of 1980, about-- I think you're misinterpreting
22 the statement of Mr. Keeley that he said on December 5th

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eb25

1 he was ready to go to contract.

2 Q I see.

3 So in February were you there when he made the
4 statement?

5 A Yes.

6 Q What did you ask him about it?

7 A Nothing.

8 Q What did you ask him in March?

9 A Nothing.

10 Q How about April, May or June? Did you ask him
11 anything about that?

12 A No.

13 Q And was it a concern to you during that time?

14 A It was a concern which was being formalized in a
15 question from the Corps during that period.

16 Q And you never picked up the telephone and asked
17 him whether that contract was going to provide for any design
18 before they went out and started throwing shovels in the
19 ground, starting construction?

20 A I feel it's somewhat cumbersome in the legal
21 aspects that surround this case to call anyone from Bechtel
22 directly.

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eb26

1 Q Apparently there wasn't that feeling back in
2 February, March, April and May, and I'm talking about some-
3 thing that was part of your normal review.

4 A I don't consider Midland a normal review.

5 Q I see.

6 So everything you're doing with regard to Midland
7 now and everything you've been doing since December 6th,
8 1979, has been within the context of an adversary legal pro-
9 ceeding. Is that correct?

10 A It's in recognition of the legal aspects that
11 surround this project, and in recognition that any contact
12 that I have has to be much more formal than it initially is.

13 Q I see.

14 Who is it now who is charged with the responsibility
15 on the part of the staff to be conducting the review and
16 the technical coordination of the review in the geotechnical
17 engineering area for the on-going review process?

18 A The review, the major portion of the review is
19 being conducted by the Corps of Engineers in the geotechnical
20 engineering aspect.

21 It is my function as contract monitor to co-
22 ordinate their efforts.

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eb27

1 Q Are your responsibilities only then with regard
2 to the hearing as opposed to the OL review?

3 A It encompasses both the Show Cause hearing and the
4 OL review.

5 Q And you are doing your job that way with that in
6 mind?

7 A I am.

8 Q If information were to come to the NRC that was
9 information which you considered important and which you had
10 been waiting for and had requested some time ago, how long
11 would it generally take you to get around to looking at it?

12 A Are we now talking about me, personally?

13 Q Yes, you.

14 A Or the Corps of Engineers?

15 Q No, I'm talking about you.

16 A It would vary with the work load at the time.

17 Q Okay.

18 For example, we were talking a little earlier
19 about that settlement data and the marker plots. Do you
20 recall that?

21 A With regard to the diesel generator building?

22 Q Yes, with regard to the diesel generator building.

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eb28

1 How long after that was delivered to the NRC would
2 you look at it?

3 A I've indicated it depends on my work load. It
4 depends on priorities being established by others, other than
5 myself.

6 Q If that had been laying around here for a week
7 already you'd know about it, wouldn't you?

8 A Not necessarily. I was out last week so I wouldn't
9 know how long it would be laying around.

10 Q I see.

11 So you don't have any idea whether that informa-
12 tion might not even be here right now, do you?

13 A I thought I had indicated to you yesterday that
14 Darl Hood had indicated to me that two volumes had come in
15 last Friday.

16 Q Do you have any idea what's in them?

17 A I have indicated that it's my understanding that
18 they are in response to the Corps' questions that were trans-
19 mitted to Consumers in the August 4th report.

20 Q Do you have any idea with any more specificity
21 what's in them?

22 A I do not.

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eb29

1 Q What else did you think was significant, if any-
2 thing, in Dr. Afifi's deposition?

3 A I think I have given you the significant items.

4 Q What information is it that you think ought to be
5 obtained from Mr. Ferris?

6 A Can I speak to my Counsel, please?

7 Q Sure.

8 (Witness conferring with Mr. Paton.)

9 Would you repeat the question, please?

10 (Whereupon, the Reporter read from the record
11 as requested.)

12 THE WITNESS: Information which would help to
13 understand why the problem developed with the Midland project,
14 and to try and understand when submittal of certain informa-
15 tion such as that identified in the Corps of Engineers'
16 report would be submitted to the NRC.

17 BY MR. ZAMARIN:

18 Q What kind of questions would you ask Mr. Ferris
19 in order to help understand why the problem developed at the
20 Midland project?

21 A The questions that pertain to those issues.

22 Q Tell me what they are in your mind.

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eb30

1 A Why not just wait a week and we'll find out?

2 Q Because I get to decide how things go here and I
3 want to do it this way.

4 A Well, if you permit me to conclude my deposition
5 I'll go start writing the questions and be better informed
6 to answer your question.

7 Q Can you tell me now what kind of questions you
8 would ask in order to get information from Mr. Ferris that
9 would help you understand why the problems developed at the
10 Midland project?

11 A Based on one conversation with Mr. Ferris where
12 he called me and I was unavailable and asked that I return
13 his call which I did, he was questioning the need for the
14 borings in the cooling pond dike. In that discussion with
15 Mr. Ferris, it was indicated that at one time there were
16 plans to do record sampling of material placed in the embank-
17 ment. It was indicated that that work was not completed.

18 So one of my questions to Mr. Ferris would be the
19 reasons for not completing that work.

20 Q Are there any other areas such as that or any
21 other areas of questions that you would want to know about
22 with regard to Mr. Ferris or from Mr. Ferris?

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eb31

1 A There are certain things in Mr. Afifi's deposition
2 which refer to "as being better understood by Mr. Ferris,"
3 particularly Bechtel's experience with preloading, Bechtel's
4 experience with embankment design and record sampling.

5 Q Anything else?

6 A Not that I recall.

7 Q Are there any other areas, questions, or items of
8 information that you think ought to be asked of Mr. Ferris?

9 A I'm not sure of Mr. Ferris' involvement in the
10 proposed remedial fixes for other structures but I would say
11 questions similar to what were asked of Mr. Afifi would be
12 asked of Mr. Ferris to ascertain what involvement he has in
13 those areas.

14 Q Have you provided any kind of a list of questions
15 or areas that ought to be covered with Mr. Ferris?

16 A Would you repeat the question, please?

17 Q Have you prepared any kind of a list of questions
18 or areas that ought to be covered with Mr. Ferris?

19 A Provided to whom?

20 Q I say "have you prepared."

21 A I have prepared some questions.

22 Q And have you, in what you have just given us,

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eb32

1 described the subject matter of all the questions that you
2 prepared?

3 A In general terms, yes.

4 Q In the ones you described in general terms, can
5 you describe them in some more specific terms for us?

6 A Not that I can recall until I would look at that
7 list.

8 Q Is there anything else that you can recall as you
9 sit here now or think of as you sit here now that you think
10 would or should be asked of Mr. Ferris in his deposition?

11 A In the past working relationship with Mr. Ferris
12 I felt there was a good working relationship between
13 Mr. Ferris and myself on other projects, and I am somewhat
14 puzzled why, in your conducting depositions, there have been
15 occasions where you appear to be challenging my professional
16 qualifications.

17 Q I don't understand the significance of that.

18 A I think I have the respect of Mr. Ferris and I
19 don't think you would share those same feelings.

20 Q Is there anything else with regard to Mr. Ferris
21 that you would expect to be inquired into?

22 A No, I do not know of any others.

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eb33

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1 Q What is it that you think ought to be asked of
2 Thiru?

3 A It was indicated in Dr. Afifi's deposition that
4 he suggested a compromise in some of the things that have
5 been requested in the way of additional borings and testing.
6 It appeared that suggestion of Dr. Afifi's was generally
7 accepted by everyone in Bechtel and when questioned why that
8 suggestion has not been carried out to reach an agreement
9 with the NRC, it was indicated that there were meetings with
10 Consumers where it was decided not to follow through on those
11 suggestions.

12 And so asking for Thiru Thiruvengadam's depo-
13 sition, I hope to understand their reasons for not following
14 through on that suggestion.

15 Q When you say "not to follow through on that sug-
16 gestion" you're referring to a suggestion of a compromise
17 with regard to additional borings and testing?

18 A Yes.

19 Q Can you tell me what your understanding of that
20 suggested compromise was?

21 A To do some of the additional borings and laboratory
22 testing, particularly those related to bearing capacity and

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eb34

1 design of the caissons and piles.

2 And I think there was also a suggestion of doing
3 some work in the cooling pond area. It was pointed out by
4 Dr. Afifi that they did not feel it necessary to do addi-
5 tional work with regard to settlement of the diesel generator
6 building.

7 Q In your opinion would such a compromise have been
8 acceptable to the NRC?

9 A We spoke in generalities about this suggestion.
10 I would have to know the details of the suggestion or recom-
11 mendation.

12 Q Well, what we're talking about would be the sug-
13 gestion that some borings be done to determine bearing
14 capacity and design of caissons and piles and perhaps some
15 of the cooling pond area, and no additional borings in the
16 diesel generator building area.

17 MR. PATON: I object to the form of the question.
18 Are you asking him to assume that that's what the offer was?

19 MR. ZAMARIN: I don't know that it was an offer.
20 We're talking about a suggestion.

21 MR. PATON: Are you asking him to assume that
22 that's what it was?

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1 MR. ZAMARIN: Yes. That's what I thought he told
2 me it was.

3 MR. PATON: Well, that's what I'm getting at.
4 Are you stating that as a fact or are you asking him to
5 assume that?

6 MR. ZAMARIN: I don't know anything as a fact.
7 He told me that and that's the first I had heard of that.

8 MR. PATON: That's your summary of what you thought
9 he said?

10 MR. ZAMARIN: That's right.

11 BY MR. ZAMARIN:

12 Q Was that inaccurate?

13 A I think it is inaccurate--

14 Q Okay. Correct it for me.

15 A -- in that I think in Dr. Afifi's suggestion it
16 included borings in the diesel generator building to help
17 establish shear strength for bearing capacity computations.

18 Q What did it omit, if anything, from the original
19 Corps request?

20 A I'm not sure of all the omissions. One omission
21 would be not to run the consolidation tests on the diesel
22 generator building.

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1 Q Can you recall any others?

2 A We didn't go into the details with every structure.
3 I think that was discussed enough to be able to say what
4 should or should not be omitted.

5 Q With regard to the suggested compromise or sug-
6 gestion of compromise that you just described, in your opinion
7 would that have been acceptable to the NRC?

8 MR. PATON: Can I inquire? "Acceptable." You
9 mean like resolving all problems or acceptable for what it's
10 worth?

11 MR. ZAMARIN: Acceptable.

12 MR. PATON: Or acceptable-- Just acceptable?

13 MR. ZAMARIN: You know, if you do this much that
14 will be good enough.

15 MR. PATON: I don't know if the witness knows
16 what "acceptable" is.

17 THE WITNESS: I think the point Counsel is making
18 is a very good point in that it would be acceptable in
19 resolving some issues. It is likely others would remain.

20 BY MR. ZAMARIN:

21 Q What others would likely remain?

22 A Well, for one, I would know for sure there would be

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eb37

1 a problem with the settlement of the diesel generator build-
2 ing.

3 Q Why would that problem remain?

4 A Because it still exists now.

5 Q What still exists now? The settlement or the
6 question about settlement?

7 A The full resolution of settlement of the diesel
8 generator building. And if the suggestion made no attempt to
9 cover that concern, then I don't think it would be fully
10 acceptable.

11 Q Okay.

12 So your opinion is that a suggestion that there
13 be shear strength tests but no consolidation tests with
14 regard to the diesel generator building would have left open
15 the question of settlement of the diesel generator building
16 and therefore have been unacceptable to the NRC?

17 A The portions that attempted to address our concerns
18 in other areas could, when the details were known, be found
19 acceptable.

20 What I have attempted to indicate is that there
21 was a portion that may still be unresolved.

22 Q I'm sorry, when you say there's a portion in other

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eb38

1 areas and there's a portion that may be unresolved, I just
2 really don't know what you're talking about. What do you
3 mean by a portion?

4 A Well, it seems to me we're asking whether a
5 suggestion which we don't know the details of would fully
6 resolve all the concerns identified to date by the Corps and
7 the NRC staff, and I can't come to that conclusion until I
8 know all the details of the suggestion, and I can't say
9 which portions would be resolved until I know that.

10 Q I guess really what I'm asking is if, in your
11 opinion, the staff would have agreed to a program for borings
12 that omitted consolidation tests in the diesel generator
13 building.

14 A If your question is directed to his suggestion
15 only with regard to omission of the sampling and testing
16 necessary for evaluating the settlement of the diesel
17 generator building, if that is your question, then I'd say
18 his suggestion did not address that concern, and so I would
19 feel that concern would still persist.

20 Q I see.

21 So I think what you told me was the only thing
22 you could think of off-hand that was omitted from the Corps --

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eb39

1 the original Corps request for borings was the consolidation
2 tests on the diesel generator building and that in your
3 opinion, the staff would not have accepted a resolution of
4 the boring question which omitted the consolidation of the
5 diesel generator building. Is that right?

6 A I don't think it's right. I don't think I said
7 it is the only concern. I think what I've said is that the
8 details of his suggestion were not discussed in great length
9 to know whether they would satisfy the concerns other than
10 the settlement of the diesel generator building.

11 I don't want to indicate that his suggestion said
12 they were going to do everything else. I don't think we got
13 into it in enough detail.

14 Q I'm not talking about "everything" right now.
15 I'm just really talking about with regard to the diesel
16 generator building.

17 A Well, then I'm confused by the question.

18 Q Okay.

19 What I had asked you was if, in your opinion, with
20 regard to the additional borings that were requested in the
21 area of the diesel generator building, would it have been
22 acceptable to the NRC to have just shear strength tests and

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eb40

1 to omit any consolidation tests with regard to the diesel
2 generator building?

3 A Your question is would it have been acceptable to
4 the NRC?

5 Q Yes, in your opinion.

6 A Based on the information that we have reviewed
7 right now, I would say no.

8 Q What else do you think should be asked of Thiru?

9 A At this time I have not given serious thought to
10 anything to ask of Thiru.

11 Q Tell me about your frivolous thoughts then, or un-
12 serious thoughts.

13 A I have given neither unserious or serious.

14 Q Okay.

15 When you came up with Thiru's name as one to
16 depose, did you have anything more in mind than simply asking
17 what his thoughts were with regard to the suggested compro-
18 mise on additional borings?

19 A If I recall correctly in my earlier deposition,
20 Thiru, by his questionings to you, indicated a knowledge of
21 geotechnical engineering or the problems with geotechnical
22 engineering which I did not think was in his background and

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eb41

1 therefore I would attempt to understand what input he has
2 had in the geotechnical engineering field in the decisions
3 that are being made on the Midland project.

4 Q Do you think that Thiru is qualified as a geo-
5 technical engineer?

6 A I would hope to find that out in deposition.

7 Q Is there anything else that you would hope to find
8 out through Thiru's deposition?

9 A Until I give both frivolous and serious thought,
10 I do not know of anything.

11 Q If you were to sit here for a minute or two to
12 think about it, could you think of anything?

13 A Under the present position of deposition, no.

14 Q Why is that?

15 MR. PATON: I'll interpret that: after four and
16 a half days.

17 BY MR. ZAMARIN:

18 Q Because you have too many other things on your
19 mind?

20 A That's correct.

21 MR. ZAMARIN: We'll take our luncheon recess now
22 and be back at 1:30.

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(Whereupon, at 12:30 p.m., the taking of the

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deposition was recessed to reconvene at 1:30 p.m.

End J3

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the same day.)

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AFTERNOON SESSION

(1:35 p.m.)

Whereupon,

JOSEPH D. KANE

resumed the stand and, having been previously duly sworn,
was examined and testified further as follows:

CROSS-EXAMINATION (Continued)

BY MR. ZAMARIN:

Q We were talking about questions that you thought
should be asked of Thiru at a deposition, and you had indicated that you'd like to know what input he has had in the geotechnical field and a little bit more about this compromise with regard to borings and what he knows about the decision that was made with Consumers on that.

Is there anything else that you think ought to be asked of Thiru or that Thiru should tell you?

A I can think of nothing else at this time.

Q All right.

What is it that you would like to know from Dhar?

A Pretty much the same, because at Dr. Afifi's deposition there were items which Dr. Afifi felt B. Dhar was better able to answer.

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eb2 1 Q So I don't have to muddle through Afifi's depo-
2 sition, can you tell me what those items are as best you can
3 recall?

4 A I'd have to go through his deposition.

5 Q Nothing comes to mind?

6 A No.

7 Q Would it help you to look at your notes?

8 A It would help me if I looked.

9 Q All right.

10 (Handing document to the witness.)

11 A It was indicated by Dr. Afifi that B. Dhar would
12 be able to discuss the connections of the piles to the
13 service water structure.

14 It was indicated that B. Dhar would also know
15 about grouting the gaps beneath footings.

16 It was also indicated that B. Dhar would know
17 what values of modulus of subgrade reaction were being used
18 in analyses being conducted by Bechtel.

19 Q What is the modulus of subgrade reaction?

20 A What is the modulus of subgrade reaction?

21 Q What is a modulus of subgrade reaction?

22 A It is a measure of the soil under a loading

eb3

1 intensity and the deformation that occurs under that loading.

2 Q Is there anything else you can recall or think
3 of that you believe B. Dhar ought to know or knows or should
4 tell you during the deposition?

5 A I have not given serious thought to questions to
6 be asked of B. Dhar.

7 Q Have you given any other thought, other than
8 serious thought, to it?

9 A I have not listed questions.

10 Q Do you have any that come to mind or any areas
11 that come to mind now as you sit here?

12 A I think the only list I have are the ones we just
13 covered.

14 Q All right.

15 What do you want to know from Mr. Martinez?

16 A Similar comments could be made on Mr. Martinez
17 that were made for B. Dhar in being referenced in Dr. Afifi's
18 deposition.

19 Q Would there be any in addition to those that you
20 mentioned for B. Dhar?

21 A The reasons would not be the same. It is just
22 that in his position as Project Engineer there are certain

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eb4

1 types of information that it is indicated the Project
2 Engineer would know.

3 Q What types of information are you referring to?

4 A I would have to go back through those notes.

5 Q As you're doing that, is there anything that
6 comes to mind, without reference to the notes, with regard
7 to the type of information you would expect Mr. Martinez,
8 as Project Engineer, to know?

9 A Well, one question I had was how Dr. Afifi
10 arrived at his understanding of what information should be
11 submitted under 50.54(f) action.

12 Q Of what significance is that question to you?'

13 A Part of my problem in the review has been -- is
14 to receive information which I feel a geotechnical engineer
15 would have to develop and use in his analysis to conclude
16 about safety of the different structures. I don't see a lot
17 of that information on the remedial fixes for the Midland
18 plant

19 I'm trying to understand why that information
20 is not normally submitted and how is it impacted by 50.54
21 questions.

22 Q You're aware, however, though that Darl Hood,

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1 the NRC Project Manager, had indicated that for information
2 to be supplied to the staff by Consumers that specific
3 requests would come to Consumers' attention and should be
4 made by the staff?

5 A I can remember a statement, I think it was in the
6 February 1980 meeting, where Darl Hood made that statement
7 but I don't think it was Darl Hood's intention, and you can
8 find out the next time you depose him, that it was his
9 intention that the normal engineering information that would
10 be developed in a design would not freely be submitted to us.

11 I think what he was indicating to us was if we
12 had specific problems to identify them and request that in-
13 formation. But I don't think he was setting the precedent
14 that that is the only way we are going to obtain information
15 from Consumers.

16 Q Is there anything else that you can think of
17 that you would want to find out from Martinez?

18 A Not that I can think of at this time.

19 Q Would anything else be actually identified in
20 your notes of Dr. Afifi's deposition?

21 A Dr. Afifi indicated it would be the Project
22 Engineer's position to determine what soil parameters were

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eb6

1 needed in the various methods of analysis that were being
2 conducted.

3 Q What soil parameters did you say?

4 A That's correct.

5 Q Anything else?

6 A It was also indicated that the Project Engineer
7 would know why a memorandum written by Dr. Afifi in 1974
8 addressing the confusion on the compaction criteria was never
9 realized by the construction personnel as being the proper
10 criteria.

11 Q Of what concern is that to you as a geotechnical
12 engineer?

13 A It seems to me the problem that we've gotten our-
14 selves into in Midland has been the poor compaction of the
15 plant fill and if the proper compaction had been carried out,
16 we would not have the problem that we now have.

17 Q Why is it, however, of concern to you why a memo
18 by Dr. Afifi in 1974, some six years ago, with regard to
19 compaction criteria confusion was never realized by construc-
20 tion personnel as proper criteria?

21 A Proper compaction criteria is an area of respon-
22 sibility under geotechnical engineering and it impacts on the

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1 safe foundation of any structure built on that type of
2 material. And in the interest of trying to understand what
3 caused the problem, whether that problem continues to exist
4 today, I would want to have the answers to the questions
5 that I've indicated to you I would like to ask of
6 Mr. Martinez.

7 Q Are there any others that you would like to ask
8 Martinez?

9 A None that I can think of.

B5

10 Q Going back to the front page of Exhibit Number 20,
11 that little partial piece of writing tablet that has your
12 handwriting on it, there's an item that says "Additional
13 guidance," and then caret in it says "if not covered by
14 Reg. Guide 1.132 on where undisturbed sampling is needed
15 (important to clarify)," and then caret "where undisturbed
16 sampling is still needed. Where SPT have been deleted."

17 Why was it important to clarify where the sampling
18 still needed?

19 MR. JONES: May I see that?

20 MR. ZAMARIN: Surely.

21 (Handing document to Mr. Jones.)

22 THE WITNESS: In recognition of the large cost

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1 estimated to complete this work by Consumers and in recogni-
2 tion of comments made by James Wanseck at the July 31st
3 meeting where he was indicating he felt undisturbed samples
4 were to be taken at a much more larger frequency than what
5 was intended in the Corps' letter, I felt, and I expressed
6 these opinions to Hari Singh that they should look at Reg.
7 Guide 1.132 and decide if the guidance in there was adequate
8 enough to give guidance on where undisturbed samples were
9 taken, if not, to give additional clarifying guidance.

10 Q Do you know whether Hari Singh or someone with
11 the Corps did look at Reg. Guide 1.132 and decide if the
12 guidance in there was adequate enough?

13 A It is my assumption he did.

14 Q And is it your opinion that he decided that the
15 guidance there was adequate and that it was not necessary
16 to provide any clarification?

17 A It's my understanding that is the case.

18 Subsequent to that handwritten note there we have
19 received the Corps of Engineers' draft letter that was tele-
20 copied to us and it reflects their ultimate decision.

21 Q And what is that ultimate decision?

22 A To refer to Reg. Guide 1.132.

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eb9

1 Q Was it ever your intention to clarify Note 3 to
2 Table 37-1?

3 A I'd have to look at Note 3.

4 Q It's the one that has the word "representative"
5 in there, and there were some questions as to what "repre-
6 sentative" meant.

7 (Handing document to the witness.)

8 A Are you talking about the handwritten note that
9 I have given you as deposition documents, and is that related
10 to "representative"?

11 Q Yes. In other words when you say "clarify,"
12 was it ever your intention to clarify the language in Note
13 3 of Table 37-1?

14 A I thought I had clarified the word "representative"
15 at the July 31st meeting.

16 Q I see.

17 You thought after the July 31st meeting that it
18 was clear, at least to Mr. Wanseck, that you were not looking
19 for the undisturbed samples at the locations of all of the
20 SPT's?

21 A I thought I had clarified it. Whether it was
22 clear to Mr. Wanseck or not I cannot answer.

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eb10

1 Q I see.

2 Did you have any feedback from Mr. Wanseck that
3 led you to believe one way or the other that he had under-
4 stood what you said?

5 A I had no feedback.

6 Q And I take it then that you made no follow-up
7 attempt to find out whether in fact he did understand what
8 was meant in Note 3 of Table 37-1?

9 A I think the follow-up attempt is exemplified in
10 my note to myself and my discussions with Hari Singh, that
11 we should again attempt to clarify it and either use Reg.
12 Guide 1.132 or add additional clarification.

13 Q I see.

14 So the handwritten note you have there on the
15 first sheet of Exhibit Number 20 where it says "Clarify"
16 also in your mind includes any possible clarification that
17 might be necessary in order to clear up Note 3 of Table 37-1?

18 A They are related.

19 Q Is it normal NRC practice to require all design
20 details to be provided in construction before granting a
21 construction permit?

22 A It is not normal practice to require all design

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eb11

1 details.

2 Q Is it your present practice now to require all de-
3 sign details for the fixes at the Midland site right now?

4 A It is not our practice to require all design de-
5 tails for the Midland site.

6 Q Have you anywhere indicated or referenced those
7 design details which you are requiring with regard to the
8 fixes at the Midland site?

9 A Could you explain what you intend by "referenced"
10 or "indicated"?

11 A Yes. In other words where would I go to find out
12 exactly what constitutes adequate design detail right now at
13 the Midland site?

14 A I would feel you would find guidance on the extent
15 of detail to be submitted in available Regulatory Guides
16 and Standard Review Plans.

17 Q What Regulatory Guide citations can you give me?

18 A Regulatory Guide 1.70, which is the standard
19 format, applicable portions of Sections 251 through 255 of
20 the Standard Review Plan.

21 Q Is that it?

22 A I'm sure it's not "it" but it's what I can recall

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eb12

1 at this time.

2 Q Can you tell me what your understanding of ade-
3 quate design detail that is required now would be, for
4 example with regard to the piling, the underpinning?

5 A I would like to refer to the August 4th, 1980
6 report where those details are identified.

7 Q Okay.

8 When you refer to the August 4th, 1980 report,
9 are you in fact referring to the July 7th, 1980 letter that
10 was enclosed with that?

11 A That is correct.

12 Q And what is contained therein is, in your opinion,
13 what is necessary for adequate design detail at the con-
14 struction stage of the Midland project right now?

15 A I don't consider what is in that report to be all
16 design details that would be necessary. What I consider it
17 to be is sufficient detail to address resolution of the
18 safety of those proposed fixes which could lead to other
19 questions, depending on the information that was submitted.

20 Q In your opinion, in order to provide adequate
21 design detail, would it be necessary to provide all of the
22 information that is contained in that August 4th, 1980 report?

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eb13

1 A The information that is requested pertains to many
2 structures. Some structures have had more information sub-
3 mitted than others, and so the August 4th letter cannot be
4 looked at as being the criteria containing all information
5 that's necessary.

6 Q That wasn't my question. It wasn't whether that
7 contained all. My question was whether, in your opinion, it
8 was necessary to provide all of that information in order
9 to have provided adequate design detail in accordance with
10 the Regulatory Guides and Standard Review Plan.

11 A I don't want to answer the question without
12 specifically going through each item of the August 4th re-
13 port to be able to answer that.

14 Q All right.
15 Do you want to do that?

16 A If you want to.

17 (Document handed to the witness.)

18 The question before me is whether all the informa-
19 tion identified in the enclosure which is dated 7 July 1980
20 to the August 4th transmittal to Consumers in my opinion is
21 necessary design details to be submitted. Is that correct?

22 Q Is necessary design details and required so as to

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eb14

1 constitute adequate design details in accordance with the
2 Regulatory Guides and Standard Review Plan to which you
3 referred earlier.

4 MR. JONES: I'm sorry. Is the question is it
5 necessary or is it adequate?

6 MR. ZAMARIN: Is it necessary that all of that
7 information be provided in order to constitute adequate de-
8 sign detail in accordance with the Regulatory Guides and
9 Standard Review Plan with regard to the construction permit
10 stage which he has referred to a moment ago.

11 THE WITNESS: I would like to frame my answer with
12 the understanding that these are being made with reference
13 to the Midland project.

14 BY MR. ZAMARIN:

15 Q Of course.

16 A Well, the Standard Review Plan and the Regulatory
17 Guides refer to more than just the Midland project.

18 Q I understand that we're talking about just as
19 applied to the Midland project.

20 A Okay.

21 The information requests that you have been asked
22 to furnish begin on page 2 of the enclosure. It asks for the

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eb15

1 basis for settlement consolidation of the reactor foundation
2 as discussed in the FSAR, and what it is attempting to do
3 is evaluate the impact of additional settlement on the reactor
4 building because of the dewatering.

5 It is my opinion this is needed information in
6 the design of the Midland structures.

7 Shall I go on?

8 Q Yes.

9 A The second item is with regard to bearing capacity
10 computations for the reactor building, and it indicates
11 certain information should be supplied. That information
12 would include the method used, the foundation design, design
13 assumptions, adopted soil properties and basis for selecting
14 ultimate bearing capacity and resulting factor of safety.

15 It is my opinion all that information should be
16 provided.

17 Q And when you say "should be provided" what you're
18 saying is, it is necessary in order to provide adequate design
19 detail as required by the Reg. Guides and Standard Review
20 Plans as applied to Midland. Is that right?

21 A That's correct.

22 Q All right. Go on.

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eb16

1 A Question Number 40 refers to the diesel generator
2 building.

3 In paragraph 40(1) it is asked to verify the pre-
4 load test settlement predictions, compute settlements based
5 on test results of samples from new borings which we have
6 requested in a separate memo, and present the results.

7 It is my opinion that information is required.

8 Q It is your opinion that the verification of pre-
9 load test settlement predictions is required as part of the
10 necessary design detail called for by the available Reg.
11 Guides and SRP. Right?

12 A I think it should be recognized that the Regulatory
13 Guides and Standard Review Plan are general guidelines and
14 do not cover every situation. I do not know that the Reg.
15 Guides specifically address preloading but what the Reg.
16 Guides and the Standard Review Plans attempt to do is to
17 make known what the staff will be looking for in the way of
18 information to be submitted to convince them on the safety.

19 Not all issues are addressed. Many references
20 are given in the Regulatory Guides where additional require-
21 ments, additional good engineering practice could be located
22 and employed in the resolution of any design.

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eb17

1 Q If I looked at the Reg. Guide or Standard Review
2 Plan would I see anything that said that there was a require-
3 ment to verify the preload test settlement predictions?

4 A No, you would not.

5 Q Could you go on, please?

6 A There's a statement with regards to Paragraph 40(1):

7 "Furnish the computation details for
8 evaluating amplitude of vibration for diesel
9 generator pedestals including magnitude of exciting
10 forces, whether they are constant or frequency
11 dependent."

12 Q In your opinion is that information required in
13 order to constitute part of adequate design detail?

14 A Yes.

15 Q Continue.

16 Why don't you continue reading through that July
17 7th, 1980 enclosure to the August 4th, 1980 transmittal to
18 Consumers Power Company and just stop and read to me anything
19 that you find which, in your opinion, is not required as part
20 of adequate design detail at the CP stage.

21 A Under those Guidelines I will.

22 Q I just think that would be easier than having to

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eb18

1 go through each one and having to tell me one way or the
2 other.

3 A I think I have indicated in my past deposition that
4 I do not share the concern for bearing capacity under the
5 diesel generator building. And those portions which refer
6 to taking new borings and testing new samples I would say
7 in my opinion are not highly important.

8 I recognize the differences of technical opinion
9 and on that basis recognize why it is in here.

10 Q But in your opinion, however, that is not re-
11 quired in order to constitute part of what would be adequate
12 design detail. Is that right?

13 A In this same paragraph there is additional infor-
14 mation having to do with bearing capacity and establishing
15 an adequate margin of safety. I agree with those portions.
16 It's just that I feel it is not necessary to develop new
17 information.

18 I would like to point out on page 8 with regard
19 to underground utilities, with regard to Question Number 45
20 that inspection of the interior of the water circulation
21 piping with video cameras and sensing devices to show pipe
22 cross-sections, possible areas of crackings and openings

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eb19

1 and slopes of piping following consolidation of plant fill
2 beneath the imposed surcharge loading, is a condition that is
3 unique to Midland and would not normally be required by the
4 Standard Review Plans and the Regulatory Guides.

5 Q Anything else?

6 A I think many of the questions that flow in recogni-
7 tion of the settlement problem of the Category I piping
8 would not normally be required by the Standard Review Plans
9 but, because of the problem which has been exhibited at
10 Midland, is necessary.

11 I think the statement I've just said about being
12 specific to Midland is true for all conditions in Question
13 45.

14 I think in Paragraph 46, too, page 11, relative
15 to operating the cooling pond, the work that is being asked
16 with regard to the operating cooling pond -- that work I
17 am referring to is "endanger public health and probably
18 result in an assault on environment, impair needed emergency
19 access," are things that may not be covered by the Standard
20 Review Plans and Reg. Guides but in recognition of the
21 settlement problem and the potential for inadequately com-
22 pacted embankment fill, I think in recognition of

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1 responsibilities that NRC is assuming with regard to dam
2 safety that these issues are being raised now.

3 Q And you therefore consider them to be necessary
4 so as to constitute the adequate design detail that is re-
5 quired at the CP stage as it exists now with respect to the
6 Midland fixes?

7 A Yes.

8 Q You may continue.

9 A I say Yes in that I recognize that this particular
10 issue could be postponed to the OL stage but it would appear
11 to me to be more prudent and efficient to address it at this
12 time.

13 Q When you say that that matter with the operating
14 cooling pond is something that could be postponed to the
15 operating license stage but that you feel it is more effi-
16 cient and prudent to handle it now, at whose bidding could
17 it be postponed to the operatin. license stage? The
18 licensee's? The staff's? Either one or both?

19 A I'm not sure what you mean by "whose bidding."

20 Q Who could make that choice? If the licensee
21 wanted to postpone it, could it be postponed?

22 A I would assume the licensee could suggest that.

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eb21

1 Whether it would be accepted I would not be the one deciding.

2 Q Who would?

3 A I would assume the Board would.

4 Q By the "Board" you're talking about the OL Board?

5 A The ASLB Board.

6 Q You're talking about the ASLB that is constituted
7 for the OM proceeding right now?

8 A Yes.

9 Q Assuming that we were not in the soils hearing,
10 that there was no hearing, is this something that would have
11 been deferred until the OL?

12 A It's my opinion it would have been.

13 Q Will you continue.

14 A Question Number 47, beginning with page 11 and
15 extending to page 14, has to do with site dewatering ade-
16 quacy. Dewatering is not a normal fix that's employed in
17 nuclear power plant projects. There is little guidance in
18 the Standard Review Plans and the Regulatory Guides. There
19 is guidance in the Staff Position on Dewatering. It would
20 contain a great deal of the information that's been requested
21 here, but even that would not cover all the details which
22 have not been identified in these questions.

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eb22

1 And so because of its uniqueness, the fact that
2 it's not covered in the Standard Review Plans and Reg. Guides,
3 we would be heavily dependent on good engineering practice
4 to identify the information that's needed for that system.

5 Q But in your opinion does that Question 47 ask for
6 more detail than that which is necessary for adequate design
7 detail at the CP stage with regard to a site dewatering
8 system?

9 A With regard to a site dewatering system, no.
10 It asks for what I think is important information.

11 Q Not important; that's not the question. I asked
12 for whether it contained more than just those details which
13 would be required in order to provide adequate design detail
14 at a CP stage.

15 A You're using the word "required" and what I have
16 just indicated to you, because of its uniqueness, the
17 Standard Review Plans or Regulatory Guides do not address it
18 and so there is no one that I know I can go to and say "What
19 is required?" And I'm having trouble with that word.

20 Q Okay.

21 What I'm looking at and what I'm focusing on is
22 the detail that is asked for, the amount of design detail,

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1 not necessarily the substance of the item we're looking at.
2 And you say there is some guidance that the staff has with
3 regard to site dewatering.

4 A That's right.

5 Q And my question to you:

6 In your opinion is there more detail requested
7 in Question 47 than that which would be minimally required
8 in order to provide adequate design detail at a CP stage
9 such as exists at Midland?

10 A You have introduced the word "minimally." When
11 this document was prepared, it wasn't prepared in the approach
12 that we would just ask for minimal information. It was
13 prepared in what we thought was important information.

14 Q What I'm asking you is not whether you think that
15 the information in there is important or not, or whether
16 it's something you would like to know or not, but whether
17 it is -- everything that is in there is required in order to
18 comprise or constitute enough or sufficient design detail
19 for a CP stage such as we have at Midland right now.

20 A And I will go back to my original statement of
21 who is doing the requiring.

22 I'm indicating to you, because of the uniqueness

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1 of the dewatering, there is no set requirements or no set
2 guidance in Regulatory Guides or Standard Review Plans and
3 so the information that is being identified in here is being
4 identified as being required information because of its
5 importance.

6 Q Has site dewatering been used on other nuclear
7 sites?

8 A Yes.

9 Q Was the same amount of design detail required at
10 the CP stage on those other sites as is being required here?

11 A It is unlikely that it was. One of the reasons
12 was that there was no staff position when those projects were
13 being reviewed.

14 Q So are you saying that the Staff Position now
15 directs the amount of design detail that is being required
16 here?

17 A Some portion of the design details the Staff Posi-
18 tion does, yes.

19 Q Okay.

20 And are there then some portions of the design
21 detail that are being required here that are not directed by
22 the Staff Position?

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eb25

1 A I would say yes, because of known site-specific
2 conditions.

3 Q Okay.

4 What are they?

5 A I would have to go through this and identify them.

6 We talk about, you know, specific elevations that
7 fit in Midland, in this information, about being drawn down to
8 certain levels. That's the type of specific information
9 inherent in Midland.

10 Q You mean that's not the kind of detail that the
11 Staff Position would require of any site dewatering?

12 A The Staff Position has to be generic and can't
13 be detailed.

14 Q Well, when I'm talking about detail I'm talking
15 about, that's not a kind of detail that is required under
16 the Staff Position?

17 A I would have to take each of these items and
18 attempt to understand whether it's required by the Staff
19 Position or is now being required just for Midland.

20 Q I'm asking you about one. You said the level to
21 which the level will be drawn down.

22 A You're just asking me about one?

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1 Q Yes.

2 Is that the kind of detail that would be required
3 of any dewatering plan?

4 A That would normally be a detail required of any
5 one, but I think there's specific problems with Midland with
6 regard to the layering, the heterogeneous nature of it that
7 has more detail in here than you would find in our Staff
8 Position.

9 Q Okay.

10 And I asked you to point out some of those details.
11 And you have mentioned the level to which it was drawn down
12 but apparently that's something that would be required as a
13 detail on any dewatering plan according to the Staff Position.
14 Right?

15 A Yes.

16 Q All right.

17 Can you point some out, that is, information that
18 wouldn't be required simply by the Staff Position?

5.640

19 A I think on page 12, a portion of Question 47,
20 Paragraph (1)(c), a statement which I will read:

21 "In view of the heterogeneity of the
22 fill, the likely variation of its permeability, and

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1 the necessity of making several assumptions in the
2 analysis which was presented in the applicant's
3 response to Question 24(a), a full-scale test should
4 give more reliable information on the available
5 time."

6 And then it goes on to give additional guidance
7 on what can be done in that full-scale test.

8 In my opinion there would be sites that would have
9 a dewatering system that would not have this problem of
10 heterogeneous materials where this kind of request would not
11 be given.

6 12 There is a paragraph on page 14 identified as
13 Paragraph J, "A Liquefaction Potential," which is an evalua-
14 tion of information that is site-specific to Midland. This
15 type of information and statement would not appear with other
16 projects.

17 Q In your opinion does it request more detail than
18 would normally be requested at a CP stage?

19 A It does not request more details. It actually
20 indicates to you the results of a liquefaction analysis on
21 the basis of certain assumed seismic input.

22 Q All right. Go on.

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eb28 — 1

A I think another condition that is unique to Midland is the re-analysis of the structure because of changed conditions due to the fill from what it was originally believed would be developed.

The information that is included in Paragraph 48, page 15, in my estimation is needed to address that concern.

Q And is that requesting more detail than would normally be required for a CP stage review?

A No, it is requesting the detail that, in my estimation, would be required at a CP review.

That completes my comments.

Q Is it normal at the CP stage to request copies of contracts for the work to be done?

A What contracts are you referring to?

Q Contracts for the work to be done.

A What work?

Q The construction work.

A Are we referring to the construction of the entire plant?

Q For example, there has been a request for contracts with regard to remedial work to be done on Midland. Would it be customary to make that type of a request at the

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1 CP stage review?

2 A No, because at the CP stage review you would not
3 anticipate remedial work.

4 Q You'd anticipate some work at some time, wouldn't
5 you?

6 A Not remedial work.

7 Q You would anticipate some construction work,
8 wouldn't you? I mean isn't that what it's all about, the
9 construction permit?

10 A Your words were "remedial."

11 Q I'm talking about-- You asked me what type of
12 contracts. I'm saying contracts similar to those for remedial
13 work at Midland, contracts which relate to construction.
14 Okay?

15 Now it's not customary to request copies of con-
16 tracts for the construction of a project at the CP review
17 stage, is it?

18 A It is customary to have submitted in the PSAR at
19 the CP stage certain design information which is then taken
20 and used in construction design and plans and specifications.

21 It is not normal practice to require at the CP
22 stage those construction drawings by our group, "our group"

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1 being the Geotechnical Engineering Section.

2 I'm not sure what is required by the Inspection
3 and Enforcement group with regard to construction plans and
4 specifications.

5 Q What about entire contracts?

6 A With regard to our work, it is not normal practice
7 to require entire contracts.

8 Q Do you know if it's normal practice with regard
9 to anybody's work within the staff to require complete con-
10 struction contracts at the CP stage?

11 A It would seem to me, and I don't know this as a
12 fact, but it would seem to me that our Inspection and Enforce-
13 ment people would be looking at entire contracts, construction
14 plans and specifications.

15 Q Do you know whether they in fact do that at the
16 CP review stage?

17 A I do not know what they do at the CP review stage.

18 Q Do you know why the contracts for remedial work
19 at Midland were requested?

20 A You've just introduced the word "remedial" again.

21 Q Yes.

22 A We have been talking about general construction.

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1 I'm just trying to make sure that I'm addressing my response
2 to those questions.

3 Q I asked you if you know why the contracts for the
4 remedial work at Midland have been requested.

5 A I think I have a very good reason, based on our
6 conversation this morning, in that it is being indicated
7 that some of the contracts for the remedial work include the
8 design work as well.

9 Q Is there any other reason, other than to get design
10 work, to your knowledge, that the contracts for remedial
11 work of the fixes at Midland have been requested?

12 A I would have to understand what contracts
13 have been requested, to be able to answer that.

14 Q Well, do you know of any that have been requested?

15 A Specifically requested, other than for the under-
16 pinning? Is that your question?

17 Q Any? Do you know of any that have been requested?

18 A I know there was a discussion in Dr. Afifi's depo-
19 sition where contract plans and specifications could help
20 distinguish the work completed by Canonie and Bechtel and
21 so that's being asked for.

22 Q Do you have any need for copies of any contracts

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1 for the remedial fixes or contracts to do the work for the
2 remedial fixes?

3 A I do, if you are counting on me to understand the
4 design of the remedial fixes and the design is in those
5 contracts.

6 Q Okay.

7 Are you talking about if the design document is
8 part of the contract?

9 A That's correct.

10 Q Okay.

11 Other than the design documents, and by that I
12 assume you mean like the drawings and the specifications--

13 A -- and design details, actually methods that
14 evaluate the structure and show that it is safe.

15 Q Is there anything other than the design document
16 portions of the contracts that you would need or require?

17 A For the remedial fixes?

18 Q Yes.

19 A And we are talking about the actual contracts?

20 Q Yes.

21 A If those contracts contain information which had
22 been identified in that enclosure and that is the only place

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1 where that information is going to be provided, then I
2 would say -- then I would want to see the contracts.

3 Q You referred to information in the enclosure,
4 referring to the July 7th, 1980 letter from the Corps that
5 was enclosed with the August 4th letter?

6 A That is correct.

7 Q And as you sit here now, can you think of anything
8 that would be included in that July 7th enclosure that might
9 be found in a contract and in some place in a contract for
10 one of the fixes other than in a design document section of
11 a contract?

12 C5 A If given time to give serious thought, I can think
13 of several. I can think of one.

14 Q Tell me that.

15 A The one is it is my understanding that in con-
16 structing the cooling pond embankment dike that your contract
17 potentially would have recovered -- excuse me, would have
18 6.130 required what is necessary for record sampling. It's my
19 understanding that a contract with Bechtel and the con-
20 struction firm would have identified what was required in the
21 way of record sampling and I could get an answer to my ques-
22 tion which we talked about this morning.

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1 Q Shouldn't you be more interested in what record
2 sampling was done rather than what might have been required
3 in the contract?

4 A It's my understanding, based on the conversation
5 with Walter Ferris, that that program was eliminated.

6 Q Of what concern then is that to you as geo-
7 technical engineer now?

8 A The concern is whether the dike is stable. The
9 record samples, if taken and tested after the embankment
10 was constructed, would show us the strength parameters of the
11 material in the dike and it would eliminate our request for
12 the additional borings and testing of the cooling pond.

13 Q Listen carefully to my question.

14 You said that you would want to see a copy of the
15 contract because Walt Ferris indicated in a telephone con-
16 versation that there had been a provision calling for record
17 sampling during construction and that provision had been
18 eliminated. And finding out whether or not there had been
19 a provision that was eliminated or whether there never was
20 a provision to begin with really wouldn't give you any in-
21 formation about record samples, would it?

22 A It wouldn't give us any information about record

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1 samples, recognizing that the program was not completed, but
2 it would give us an understanding of what was initially
3 required and comparing that to what we're now asking you in
4 the way of additional borings and testing.

5 Q What possible relevance or importance could it
6 have to know what might have been required if you know that
7 it wasn't done? What are you looking for? What are you
8 after?

9 A The fact that in normal engineering practice the
10 taking of record samples to do what our requested borings
11 and testings is attempting to do is what you had anticipated
12 in your contract for record sampling.

13 Q What I want to know is what the connection is
14 between your work as a technical reviewer and a geotechnical
15 engineer and whether or not there was a provision in a con-
16 tract calling for record samples.

17 Do you understand my question? I could understand
18 it if you were looking to see Well, gee, whiz, if there was
19 a provision calling for them then I will know to look for
20 record samples.

21 If you know that record samples weren't taken, of
22 what earthly importance could it be to know whether the

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1 contract had originally called for it and then it was elimi-
2 nated or never called for it? What do you want to know for?

3 A I don't think that's really that difficult to
4 understand. I think you can conclude, after looking at a
5 contract that has a certain amount of record sampling, that
6 a certain program was required and on the other hand, we are
7 now asking for pretty near the equivalent by our borings and
8 testing and you'd be able to show the reasonableness of our
9 request. I don't think that's too difficult to understand.

10 Q I see.

11 What you're saying is if it was in the original
12 contract and you're asking for it now, that would demonstrate
13 the reasonableness of your request?

14 A It would help to demonstrate it.

15 Q So you are curious about that information for
16 purposes of preparing for the hearing as opposed to just
17 reviewing the adequacy of the remedial fixes?

18 A We're now talking about the contracts and my answer
19 to that would be yes.

20 Q Yes, it's for the purpose of the hearing and not
21 for your review. Is that right?

22 A That's correct.

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1 Q Have you requested copies of those contracts?

2 A I was away last week and had not worked on
3 Midland at all. It's my understanding a representative of
4 the Corps of Engineers visited the Bechtel office last week
5 and was to identify documents. It is our hope that they have
6 been able to identify those documents.

7 Q Okay.

8 Had you ever requested to see those contracts of
9 anyone at Consumers or Bechtel?

10 A Until this action now, no.

11 Q You say "this action now." Other than the visit
12 to Ann Arbor last week to look at documents that were pro-
13 vided, had you ever asked anyone to see any contracts?

14 A Not to my recollection.

15 Let me clarify that. I think I have indicated
16 in Dr. Afifi's deposition the discussions on contracts came
17 up and we were asking what contracts were available in certain
18 areas, and so I would say that occurred prior to last week.

19 Q Okay.

20 Have you read any transcripts of any other depo-
21 sitions in this proceeding?

22 A Yes.

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eb38 1

Q Whose?

2

A My own, Dr. Heller's, the first day of Darl Hood,

3

Dr. Afifi. That is all at this time.

4

Q Did you see anything in the first day of Darl

5

Hood's that you disagreed with?

6

A Yes. There were some misspelled words.

7

Q Did you see anything of substance in the first day

8

of Darl Hood's that you disagreed with?

9

A Not of substance.

10

Q Did you see anything of substance in the first day

11

of Darl Hood's that you thought he answered incorrectly?

12

A No.

13

Q Did you see anything in Lyman Heller's of sub-

14

stance that you disagreed with?

15

A No.

16

Q Did you see anything in Lyman Heller's of substance

17

that you thought he answered incorrectly?

18

A Of substance, no.

19

Q When I say "of substance" I'm referring to other

20

than scrivener's errors, spelling and transcription. That's

21

what you're talking about also when you say substance?

22

A Yes.

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eb39

1 Q To your recollection, had you been asked each
2 of the questions Lyman Heller was asked, would you have
3 answered them in substantially the same fashion as he did?

4 A I would have to be asked the same questions.

5 Q Do you know who, if anyone, has read your trans-
6 cript beside yourself and perhaps me?

7 A I would like to know who of Consumers and Bechtel
8 and their consultants have read mine.

9 Q I bet you would. But what I want to know is who
10 you know of who read yours.

11 Do you know whether Darl Hood read yours?

12 A I think he has read portions. I don't know whether
13 he has read it entirely.

14 Q Do you know whether Lyman Heller read yours?

15 A I think the same statement is true. I know he has
16 read portions. I don't know if he's read it entirely.

17 Q Do you know whether anyone in the Corps has read
18 your deposition?

19 A They have been provided a copy. I have not had
20 discussions with them.

21 Q Do you know if Hari Singh has read any of it?

22 A I think he has read some of it.

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eb40 . 1

Q Do you know if Otto has read any of it?

2

A I do not know.

3

Q Do you know if Erickson has read any of it?

4

A I do not know.

5

Q Have you provided anyone in the Corps with any

6

information as to what they can expect in their depositions?

7

A Well, I would have to say giving them everyone's

8

transcript would be helpful in that regard.

9

Q Did you do anything else?

10

A I think after the first day of my deposition I

11

gave them I think two words of advice. One of them was be

12

honest, and the other one is you are questioning whether

13

they have provided all deposition documents and I said when

14

you are deposed to make sure you bring all deposition docu-

15

ments.

16

Q Any other advice or information that you gave

17

anyone at the Corps with regard to depositions?

18

A I probably conveyed to them my feelings of depo-

19

sitions.

20

Q What's that?

21

A That it is a distasteful process.

22

Q We've gone through the August 4th report and you

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1 have indicated in there certain things which were asking for
2 more detail than that which would be required to provide
3 sufficient design detail at the CP stage. You've also indi-
4 cated some information that would not be called for by the
5 available Reg. Guides or Standard Review Plans for one reason
6 or another.

7 A Or the Staff Position.

8 Q Or the Staff Position; that's right.

9 So I take it then that you would agree that in
10 simply referring to the Standard Review Plan and the available
11 Reg. Guides and the Staff Position that one would not neces-
12 sarily know just what information you consider necessary or
13 important to have with regard to the fixes at Midland. Is
14 that right?

15 A Would you repeat the question?

16 (Whereupon, the Reporter read from the record
17 as requested.)

18 THE WITNESS: I would like to address the words
19 "not necessarily know."

20 BY MR. ZAMARIN:

21 Q Keep in mind that I said by only referring to the
22 Reg. Guides and the Standard Review Plan and the Staff

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eb42

1 Position.

.310

2 A It is my opinion that a geotechnical engineer
3 working on the proposed remedial fixes and the problems that
4 are connected with the Midland site would necessarily know
5 what is important to come to a conclusion on the safety. It
6 is acknowledged that not all information is in the Standard
7 Review Plans, the Reg. Guides and the Staff Position, but I
8 think an experienced geotechnical engineer would necessarily
9 know what information is important.

10 Q But you did indicate that there was even some
11 disagreement among geotechnical engineers with regard to
12 some of the things that were required or not required in
13 going through that August 4th memo.

14 A I indicated there was a difference whether addi-
15 tional borings and samplings were necessary. I don't recall
16 indicating any difference with the information that was being
17 required.

18 Q If I understood you to say then that with respect
19 to certain of that information that was called for or re-
20 quested in that August 6th memo that there were some technical
21 people or engineers who would disagree as to the need for
22 that information, then I misunderstood you. Is that right?

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1 A I don't recall discussions about geotechnical
2 engineers disagreeing on the information. I do recall dis-
3 cussions about site dewatering or dewatering itself being
4 a problem-- I'm sorry, I don't understand your question.

5 Q Well, first of all, did you review that August 4th
6 memo in detail before it was-- Strike that.

7 Did you review that July 7th, 1980 memo in detail
8 before it was transmitted to Consumers Power Company on
9 August 4th?

10 A Yes.

11 Q And did you agree that all the information re-
12 'quested in there was necessary to be submitted by Consumers
13 Power Company?

14 A Yes.

15 Q And did you agree that all the information that
16 was required in that memo was necessary to be submitted by
17 Consumers Power Company in order to satisfy concerns that
18 you had about the fixes?

19 A I think I have already indicated that I do not
20 have the same concern for the bearing capacity of the diesel
21 generator building, and I have accepted that.

22 Q So wouldn't that be an example of one item of

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eb44

1 information that some people would believe is required and
2 other people believe shouldn't have to be required?

3 A I think I see a distinction and evidently haven't
4 conveyed it to you. There is a distinction between getting
5 the information, and that is the boring and the laboratory
6 testing, and then using that in an analysis. And I'm saying
7 I think the first part, the additional borings and the test-
8 ing, is not necessary for the analysis of the bearing capa-
9 city.

10 The information that is being requested on bear-
11 ing capacity I agree with. The need for additional borings
12 and testing I don't feel is necessary.

13 Q Okay.

14 But there are people, I take it, in the NRC that
15 do feel the information is necessary. Right?

16 A I'm not sure it's correct to say within the NRC.
17 I think if you include the Corps of Engineers that would be
18 correct.

19 Q So going back then to one of my earlier questions,
20 there are some areas, even within the information requested
21 in that July 7th, 1980 memo, upon which engineers disagree
22 as to whether it is required or not?

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eb45

1 A I'm sure, given a group of geotechnical engineers,
2 there would be disagreements.

3 Q Okay.

4 We were talking a while ago about conversations
5 that you had with Lyman Heller in which he questioned certain
6 aspects of Midland, and you had indicated that with regard to
7 questions about how you can reach resolution on the fix for
8 the diesel generator building that you discussed with him the
9 different materials and compressibility characteristics of
10 the fill beneath the diesel generator building. Do you recall
11 that?

12 A Vaguely.

13 Q Did you ever discuss with him whether there were
14 fat clays under the diesel generator building?

15 A No.

16 Q Did he ever say to you that he thought that there
17 were fat clays beneath the diesel generator building?

18 A Not that I recall.

19 Q Did he ever discuss with you any feeling that he
20 had that in determining the amount of time necessary to reach
21 secondary consolidation that one must base that estimation
22 on the fattest clay that might exist beneath the diesel

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eb46

1 generator building?

2 A I do not recall having any discussion with Lyman
3 Heller on the fattest clay at Midland.

4 Q Okay.

5 In your opinion are there fat clays beneath the
6 diesel generator building?

7 A In my understanding of a fat clay, no.

8 Q You indicated you had some discussions with Lyman
9 Heller about what is trying to be done on cooling pond dikes.
10 Do you recall what the nature of those conversations with
11 Lyman was?

12 A Would you repeat the question, please?

13 (Whereupon, the Reporter read from the record
14 as requested.)

15 THE WITNESS: I've had conversations with Lyman on
16 the additional borings and the testing that's required for
17 the cooling pond, the concern that those materials were not
18 properly compacted.

19 I think Lyman has expressed an opinion in the past
20 that those same borings in the cooling pond would also help
21 us to understand the plant fill better.

22 BY MR. ZAMARIN:

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1 Q Do you agree with that?

2 A Only to a limited degree.

3 Q To what limited degree do you agree?

4 A I think the materials are so heterogeneous that
5 borings would not provide real useful information from the
6 dikes to the plant fill area.

7 Q What did you talk to Lyman Heller about with regard
8 to what is needed for preparation of testimony?

9 A We talked about the Show Cause order, what we
10 understood the major parts are, the problems of identifying
11 when information has been submitted by Consumers.

12 Q Tell me all that you recall about your discussion
13 with him about problems of identifying when information has
14 been submitted by Consumers.

15 A One of the problems that I have is when an amend-
16 ment is submitted, that amendment will supercede previous
17 pages and it is -- I'm not sure as of this date how I'm going
18 to overcome the problem to include identifying when the in-
19 formation was submitted.

20 Q I don't understand what you mean, "identifying
21 when the information was submitted." You don't mean you
22 throw away previous pages, do you?

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1 A In the documents that I have, only the last amend-
2 ment page is there. I think there are others within NRC who
3 may have all editions.

6.530

4 Q What did you discuss with regard to your under-
5 standing of the major parts of the Show Cause order with
6 Lyman?

7 A How we perceived the Show Cause order is broken
8 down.

9 Q How do you perceive that?

10 A Very carefully.

11 Q Can you describe it for me?

12 A That it's broken down into the two parts, the
13 part before December 6th, 1979, and the part afterwards.

14 Q And what's the part afterwards?

15 A The part that we're in now, whether adequate in-
16 formation has been submitted on the remedial fixes.

17 Q And do you look to December 6th, 1979, as the date
18 upon which the determination was made as to whether adequate
19 information had been submitted, or do you look at today's
20 date in the context of the order?

21 A We're looking at both dates.

22 Q Why is that?

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1 A Do you want us to evaluate only the information
2 submitted before December 6th?

3 Q No.

4 A That's why we're looking at both parts.

5 Q Okay.

6 You're looking at both parts though in the context
7 of the hearing?

8 A In being able to apprise the Board of where we
9 are today.

10 Q You're looking at both parts in the context of
11 the hearing?

12 A With regard to where we are today in apprising
13 the Board, yes.

14 Q Was there anything else that you discussed with
15 Lyman with regard to what's needed for preparation of testi-
16 mony?

17 A Not specifically that I can recall.

18 Q In your opinion as you sit here today, does the
19 staff have a stronger or weaker technical case than you
20 thought they had on December 6th, 1979?

21 A If you remember correctly, I had indicated to you
22 that I did not come on board until November 1979 and I really

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1 didn't get involved until 1980, so I was not making any judg-
2 ment about how strong the case was.

3 Q Okay.

4 Whether you were making one or not, do you have an
5 opinion as you sit here now as to whether the staff's case
6 today is stronger or weaker technically than it was at some
7 time in the past?

8 A I have no opinion.

9 Q Do you have any impression as to whether it's
10 stronger or weaker than at any time in the past?

11 A I think a lot of the information which we felt
12 was not provided as of December 6th, 1979, a lot of that
13 information has been submitted. If we'd stop these deposi-
14 tion hearings maybe we'd get an opportunity to review it.

15 Q And maybe I'd get an opportunity to spend a little
16 time at home.

17 Were you aware that questions had been asked in
18 November of 1979 with regard to which Consumers Power Company
19 had not had an opportunity to respond by December 6th, 1979?

20 A Will you put a time frame of when I was aware
21 of it?

22 Q Are you aware of that as you sit here now?

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1 A I'm aware of it now.

2 Q Do you know why the order was issued on December
3 6th, 1979, while there were still questions outstanding for
4 which time had not been made available to respond?

5 A Because the people involved in the project at that
6 time felt there was a need, and those needs are identified
7 in the Show Cause order, of taking that action.

8 Q And what is your understanding what those needs
9 were?

10 A I think there are several problems, the problem
11 with QA, the problem with the false statement in the FSAR,
12 I think the problem with having adequate information to be,
13 able to accept the remedial fixes.

14 Q Really what I'm asking is what was the rush to
15 submit the order on December 6th, 1979, while requests for
16 information that the order complained had not been provided
17 were still outstanding and some of which were still fresh?

18 MR. JONES: I'll object as to form.

19 THE WITNESS: Would you repeat the question, please?

20 (Whereupon, the Reporter read from the record
21 as requested.)

22 THE WITNESS: I cannot answer the question because

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1 I was not aware of the rush, nor was I aware of the thoughts
2 of the people who were making the decision to issue the Show
3 Cause order.

4 BY MR. ZAMARIN:

5 Q Are you so aware now?

6 A Of the rush?

7 Q Yes.

8 A I am not aware, no, of what they felt.

9 Q Do you have any idea why on November 19th, 1979,
10 a letter was sent by Lester Rubenstein, Acting Chief of the
11 Light Water Reactors Branch Number 4 to the Vice President
12 of Consumers Power Company, indicating that responses to
13 previous 50.54(f)'s had been reviewed and that there were
14 some additional questions that were included in this November
15 19th, 1979 letter, and advising that additionally, the NRC
16 has recently acquired the services of consultants and yet less
17 than three weeks later, on December 6th, 1979, the order
18 came down? Do you have any idea why there was that short
19 time period?

20 A The short time period between his letter and the
21 issuance of the Show Cause order? No, I have no idea.

22 Q Did you ever hear anybody opine as to why the

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1 Show Cause order was issued while all these other matters
2 were pending and even before the NRC consultants were in a
3 position to start reviewing any of the material that had al-
4 ready been submitted?

5 A I've heard opinions that the order was issued be-
6 cause the progress in resolving the safety concerns was not
7 satisfactory and a decision had been made to issue the order.

8 Q Who did you hear opine in that regard.

B7

9 A Darl Hood and Lyman Heller.

10 Q How recently did you hear Lymand Heller say some-
11 thing like that?

12 A Not recently.

13 Q How recently did you hear Darl Hood say something
14 like that?

15 A I think those opinions were expressed to me as I
16 was coming on board in November of 1979.

17 Q Did you ever factor into your consideration of
18 the settlement of the diesel generator building to date--

19 A Would you repeat the question, please?

20 Q Wait. I haven't finished it. Do you want me to
21 start again?

22 A Yes.

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1 Q Have you ever factored into your consideration of
2 the settlement of the diesel generator building up to the
3 date of the surcharge the maximum pond level in April of
4 1979 of 627 feet two inches, the depth of the mud mat under
5 the diesel generator building, and the capillary tension of
6 water in the soil underneath the diesel generator building?

7 A I'm not sure of what you're asking. The relation-
8 ship between elevation 627 and those details that you're
9 bringing up?

10 Q There's a disagreement between you and Dr. Peck
11 apparently as to how many feet of fill underneath the diesel
12 generator building may not have been saturated. I think you
13 have indicated that it might be as much as six or seven feet.

14 A That's correct.

15 Q And I believe that Dr. Peck doesn't believe it
16 could be more than about two feet.

17 And in arriving at the six or seven foot figure,
18 did you take into consideration the depth of the mud mat
19 underneath the diesel generator building?

20 A No.

21 Q Would that have an effect on the level to which
22 saturation would have occurred in your opinion?

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1 A It would not have an effect on the level of satura-
2 tion that would have occurred. It would have an effect on
3 the zone that is unsaturated.

4 Q Okay.

5 And what effect would it have on the zone that is
6 unsaturated?

7 A It would reduce that thickness.

8 Q Okay.

9 Do you have any idea of the extent to which it
10 would reduce the thickness of the zone?

11 A The thickness of the mud mat.

12 Q And do you know how thick the mud mat is?

13 A No.

14 Q In arriving at the thickness of the zone that
15 you've estimated of unsaturated material beneath the diesel
16 generator building, did you take into account capillary
17 tension or capillary action?

18 A No.

19 Q In your opinion would that have some effect on the
20 thickness of the zone of unsaturated material beneath the
21 diesel generator building?

22 A It could have an effect. Whether it does have an

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1 effect is at what moisture content, either under the develop-
2 ment of seepage or capillary action, what moisture content
3 causes the soil to exhibit the settlement behavior that was
4 concerned when the problem was raised.

5 Q So you're saying you don't have sufficient infor-
6 mation to know whether capillary tension has had an effect
7 in reducing the thickness of the layer of unsaturated fill?

8 A That's correct.

9 Q Do you know what a swelling test is?

10 A Yes.

11 Q Would a swelling test provide you with information
12 about whether the upper several feet of the soil beneath
13 the diesel generator building had been placed dry of optimum?

14 A I would have to think how we could-- The question
15 is would a swelling test help me establish to what moisture
16 content the material was placed dry of optimum?

17 Q If you're concerned about the upper several feet
18 of the soil having been placed dry of optimum and being in
19 a zone that has not been saturated, would a swelling test
20 provide you with some information in that regard?

21 A It would provide some information.

22 Q What kind of information would it provide?

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el07 - 1 A I would have to think out.

2 Q Do you know whether it would tell you whether in
3 fact certain levels beneath the diesel generator building,
4 that is, the upper several feet, were in fact unsaturated
5 and were placed dry of optimum, or do you know as you sit here
6 now?

7 A By giving me time to think it out, perhaps I could
8 come to a conclusion.

9 Q I see.

10 Do you know what the maximum volume change would
11 be that you would predict, based upon your estimation of the
12 thickness of the layer of unsaturated fill beneath the diesel
13 generator building?

14 A Would you repeat the question, please?

15 MR. ZAMARIN: Read it back, please.

16 (Whereupon, the Reporter read from the record
17 as requested.)

18 THE WITNESS: I have not made an estimate of that
19 volume change.

20 BY MR. ZAMARIN:

21 Q Can you estimate at all what that volume change
22 or what the settlement, additional settlement in that soil

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1 might be?

2 A An estimate could be made, making certain assump-
3 tions but that's only part of the concern, that zone, and
4 there is a concern for the other depth of the compressible
5 materials, all of which would go into looking at the potential
6 future settlement.

7 Q Right now I'm just talking about that which would
8 be associated with the possible lack of saturation of the
9 soils in that zone.

10 A I have indicated I have not made an estimate.

11 Q Okay.

12 And as you sit here now, could you give some kind
13 of a ballpark estimate as to what it could be?

14 A Well, I do not wish to.

15 Q Well, whether you wish to or not, is it possible?
16 Is there some rule of thumb you could use to make a ballpark
17 estimate?

18 A You could assume highly conservative assumptions
19 and make that estimate, but I'm not prepared to do that now.

20 Q Can you tell us what the highly conservative
21 assumptions would be?

22 A To assume the change upon saturation is going to

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1 be significant and allow for a high level of compressibility.

2 Q I see.

3 So these assumptions you're talking about are
4 quantitative assumptions? In other words you could assume
5 X percent or something like that?

6 A You could assume a loose density now and a maximum
7 density after consolidation and work out a change in volume
8 on that basis.

9 MR. ZAMARIN: We will adjourn now, and simply
10 resume at some future date to be agreed upon.

11 (Whereupon, at 3:30 p.m., the taking of the
12 deposition was recessed sine die.)

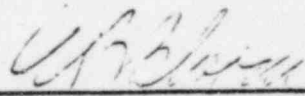
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CERTIFICATE OF NOTARY PUBLIC AND REPORTER

I, William R. Bloom, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition had been previously duly sworn; that the testimony of said witness was taken by me by Stenomask and thereafter reduced to typewriting by me or under my direction; that said deposition is a true record of the testimony given by said witness; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken; and, further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of the action.


W. R. Bloom
Notary Public in and for
the District of Columbia

My commission expires 14 August 1985