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STATE OF MICHIGAN

2

IN THE CIRCUIT COURT FOR THE COUNTY OF MIDLAND

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THE DOW CHEMICAL COMPANY,

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Plaintiff,

6

-vs-

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CONSUMERS POWER COMPANY,

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Defendant.

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 11 W I T N E S S I N D E X

12 Witness: JOSEPH DAMIEN KANE

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1 Washington, D. C.

2 Monday, April 15, 1985

3 At About 9:15 a.m.

4 - - -

5 VIDEO OPERATOR: Okay. One minute, please.
6 We are now rolling and recording.

7 MR. JENTES: This deposition is being taken
8 pursuant to the Michigan Court Rules at the offices of
9 Kirkland & Ellis in Washington, D. C.. It's proceeding
10 on the morning of April 15, 1985 at 9:15 a.m., Eastern
11 Standard Time.

12 The deposition is being taken in the case of the
13 Dow Chemical Company versus Consumers Power Company,
14 file number 83-002232-CK-D, pending in the Circuit Court
15 for the County of Midland. A Notice to the effect of
16 the deposition being taken this morning has been duly
17 served on the witness, Mr. Joseph Kane, an employee of
18 the United States Nuclear Regulatory Commission and on
19 counsel for Consumers Power Company.

20 At this juncture, counsel appearing need to
21 identify themselves.

22 My name is William Jentes, J-e-n-t-e-s. And along
23 with me is my associate, Carol Rice. Appearing on
24 behalf of the Plaintiff the Dow Chemical Company.

1 MR. LIBBY: And my name is John Libby and I'm
2 appearing on behalf of Consumers Power Company. And
3 with me is my associate, Ellen Hearing.

4 MR. JENSEN: And my name is Neil Jensen,
5 appearing on behalf of the NRC. And with me is my
6 associate, Chuck Mullins.

7 MR. JENTES: At this juncture it is
8 appropriate, I believe, to have the witness sworn.

9 J O S E P H D A M I E N K A N E,
10 was thereupon called as a witness herein, and after having
11 been first duly sworn to tell the truth, the whole truth,
12 and nothing but the truth, was questioned and testified
13 as follows:

14 DIRECT EXAMINATION

15 BY MR. JENTES:

16 Q Mr. Kane, would you please state your full name for the
17 record?

18 A Joseph Damien Kane.

19 Q Where do you reside?

20 A At 7421 Miller Fall Road, Derwood, Maryland.

21 Q And that's here in the adjacent to Washington, is that
22 correct?

23 A Probably twenty-five miles from here; yes.

24 Q All right. And by whom are you currently employed, Mr.

1 Kane?

2 A I'm employed with the U.S. Nuclear Regulatory
3 Commission.

4 Q And what is your title at the present time?

5 A My title at the present time is Senior Geotechnical
6 Engineer.

7 Q Broad strokes: What are your duties in that job?

8 A They are varied. When an Applicant wishes to obtain a
9 construction or a operating license with the NRC they
10 submit documents demonstrating that the plant or other
11 facility has been properly designed. I have one aspect
12 to review of that plant design -- excuse me, and that is
13 with respect to geotechnical engineering which is maybe
14 more commonly understood to be soils and foundation
15 engineering. It would be my normal work responsibility
16 to review the foundation design of nuclear power plant
17 facilities.

18 Q I've placed before you and given counsel for Consumers a
19 copy of a document that's been marked as Plaintiff's
20 Exhibit NRC 279. It's entitled: NRC Staff Motion for
21 Summary Disposition on the Issue of Quality Assurance
22 Implementation Prior to December 6th, 1979. And it was
23 a document filed by the NRC Staff Before the Atomic
24 Safety and Licensing Board back in April or 1981.

1 Attached to it is an affidavit; which is an affidavit of
2 yourself, Mr. Kane. The affidavit appears at Bates
3 Number 14181 and continues after that.

4 (Exhibit NRC 279; NRC Staff Motion for
5 Summary Disposition on the Issue of
6 Quality Assurance Implementation Prior
7 to December 6, 1979.)

8 BY MR. JENTES:

9 Q Have you had a chance to look over that affidavit again in
10 preparation for your testimony here?

11 A Yes, I have.

12 Q And it is an affidavit that you prepared and signed back
13 in 1981, is that correct?

14 A That is correct.

15 Q Over on page 186 of the Bates Number is a review of your
16 professional qualifications and experience. And I'd
17 like to ask you to use -- using that, review briefly
18 your educational background.

19 A I attended Villanova University and received a Degree in
20 Bachelor of ~~Science~~ in Civil Engineering in 1961. I
21 then went to work and proceeded to obtain my Master's
22 Degree attending at night Villanova University. And I
23 received my Master's ~~of Science~~ in Civil Engineering in
24 1973. While with the Army Corps of Engineers I was

1 required to attend an accelerated course in soil
2 mechanics. It was a very intensive course for eight
3 weeks, at the University of California. That was in
4 1972. And I have taken graduate studies at the
5 University of Maryland in 1978.

6 Q I notice, as is indicated on your resume, that you are a
7 Registered Professional Engineer in Pennsylvania, is
8 that correct?

9 A That is correct.

10 Q And a member of the American Society of Civil Engineers?

11 A That is correct.

12 Q Over on the third page of your resume it indicates that
13 in 1962 to 1963 you apparently worked for a private
14 consulting firm. What was that firm?

15 A The name of the firm was McCormick and Taylor and was
16 located in Philadelphia, Pennsylvania.

17 Q Did you join them immediately after attending at
18 Villanova?

19 A No, I did not.

20 Q What work, if any, did you do between the time you had
21 graduated and when you went to work for the firm?

22 A Upon graduation from Villanova University in 1961, I was
23 employed by the California Division of Highways for a
24 period of five months.

1 Q What kind of work did you do with the California
2 Division of Highways?

3 A It was as a Junior Engineer training in highway design.

4 Q And then what did you do for the Taylor firm?

5 A I was hired in 1962 and within the several months I was
6 given the position as Project Manager of several
7 projects. It was in highway design and other aspects.
8 It was in drainage for the Liberty Bell Racetrack in
9 Pennsylvania. And I also worked on the design of a
10 marina in Pennsylvania.

11 Q I noticed from pages 187 and 188 of your resume that
12 apparently in 1963 you went to work for the U.S. Army
13 Corps of Engineers and remained with them until 1975.
14 Is that correct?

15 A That is correct.

16 Q Ultimately did you work up to being Chief of the Soils
17 Design Section, Foundations and Materials Branch, as is
18 indicated in your resume?

19 A Yes. That occurred in 1973.

20 Q In broad strokes: What were your responsibilities in
21 that position?

22 A As Chief of the Soils Design Section, I was to supervise
23 a group of engineers and technicians in the soils and
24 foundation work for the Philadelphia District. It had

1 primarily to do with the design and the construction of
2 large dams, but it also involved a lot of other work
3 with respect to disposal of dredge material,
4 construction of facilities along rivers, such as the
5 Delaware River in Philadelphia, where we would be
6 getting into the placing of sheet pile walls and the
7 like.

8 Q How many people did you have working for you in your
9 role as Chief of the Soils Design Section?

10 A To my memory it was about five engineers and two or
11 three technicians.

12 Q Why is the U.S. Army Corps of Engineers involved in
13 these kinds of projects?

14 A The projects that I mentioned with respect to when I
15 worked for them?

16 Q Yes. And more broadly: Why does the Corps of Engineers
17 get involved in so much soils related work?

18 MR. LIBBY: Objection: Lack of foundation.

19 BY MR. JENTES:

20 Q Please answer.

21 MR. JENSEN: You may answer.

22 A The Branch work that I was with the Corps was the
23 civilian aspect of it, and the Corps does a lot of civil
24 works, design and construction. What we were doing in

1 the Philadelphia District was building several public
2 works, notably dams and recreational areas for -- for
3 several reasons besides recreation; it would be for
4 water supply. And the Corps itself is an organization
5 throughout the Nation and even overseas that does those
6 type of works.

7 Going back to your specific question about soils,
8 the Corps -- and I think a lot of people would agree
9 with this, is probably the forerunner in -- in the
10 research that has been done in soils and foundations at
11 their Waterways Experimental Station in Vicksburg,
12 Mississippi. So, the Corps has a good deal of
13 experience in soils and foundation, has published many,
14 many research projects that have advanced the
15 state-of-the-art, and it's published many engineering
16 manuals on that subject.

17 Q According to your resume, I take it that in 1975 you
18 left the Corps and went to work for the NRC, is that
19 correct?

20 A Yes.

21 Q Could you trace the work that you have done with the NRC
22 since 1975, please?

23 A I will trace it by highlighting the type of work, but I
24 would not remember all the projects that I have worked

1 on.

2 Essentially the work of a geotechnical engineer
3 with respect to projects in the NRC is ^{to review} ~~documents~~ ^{that} ~~were~~ X
4 submitted by the Applicants and the Licensee that
5 develop the foundation design of a specific plant. Our
6 work is not just restricted to nuclear power plants, we
7 get into other aspects of nuclear facilities, but the
8 majority of my work has been with nuclear power plants.
9 And what we would do would be to review the foundation
10 design of the Applicants' and Licensees' submittals to
11 show that they have adequately designed the foundation,
12 have an acceptable margin of safety with respect to that
13 design, and meet NRC Regulations and Regulatory Guides.

14 Q If you're able to say: On how many nuclear projects
15 have you been involved in advisory capacity or in
16 connection with working on analyses of soils and
17 geotechnical matters?

18 A There are probably fifteen nuclear power plants that I
19 have been involved in. And probably ten to fifteen
20 tailings waste disposal systems that I have been
21 involved in.

22 Q In looking at page 4187 of the resume, there's a
23 description of your duties with the NRC there in the
24 first two-thirds of the page. And one of the items is

1 item D says serving as an instructor for the Office of
2 State Programs. What has been involved in that aspect
3 of your duties?

4 A NRC has an Office of States Program, and what it is
5 intended to do is to assist the States in their
6 licensing of certain nuclear facilities. One of them is
7 the milling of uranium. There are actually two broad
8 classifications of State work. And, that is, there are
9 what is called Agreement States. And that is where the
10 States have agreed to accept the responsibility of
11 licensing certain aspects of radiation type facilities.
12 Agreement States would not be involved with nuclear
13 power plants, but they can if they demonstrate their
14 organization and their criteria is equivalent to the
15 NRC, can license certain facilities. And so certain
16 States, I think now there's twenty-six or twenty-seven
17 States, are what are called Agreement States where they
18 have accepted the responsibility of that licensing
19 action.

20 And my involvement as an instructor was with
21 respect to uranium mill tailings retention dams was to
22 explain what NRC did in their review of the foundation
23 and soils work, explain to them our Guidelines, and try
24 and assist them wherever we could.

1 Q Did there come a point in 1979 when you got involved
2 with the Midland Nuclear Project of Consumers Power
3 Company?

4 A I became involved with the Midland Project on the latter
5 part of 1979, yes.

6 Q Was that the first time when you had any involvement
7 with the Midland Project?

8 A Yes.

9 Q I'd like to ask you if you could fold up the document
10 that I asked you to look at first, although I'll return
11 to that document later, but you can put it to the side
12 for the moment. And let me hand you a document which
13 has been marked as NRC 280. Could you identify what NRC
14 280 is, please.

15 (Exhibit NRC 280; Interagency Agreement
16 dated 9-21-79 between NRC and the
17 U. S. Army Corps of Engineers.)

18 A It is a copy of the NRC Agreement between the NRC and
19 the U.S. Army Corps of Engineer which was signed as an
20 NRC Agreement in September of 1979.

21 What this Agreement completed was the arrangements
22 between the NRC and the Corps of Engineers to receive
23 technical assistance in the field of geotechnical
24 engineering for the review of the Midland Project and

1 also the Bailly Project.

2 BY MR. JENTES:

3 Q Perhaps I should have backed up a little bit. How did
4 it come about that you became involved with the Midland
5 Project in the latter part of 1979?

6 A Prior to the end of 1979, there was a reviewer for the
7 Midland Project whose name was Dan Gillen. Mr. Gillen
8 was involved in the review of the Final Safety Analysis
9 Review, the FSAR, for Midland, and had developed several
10 questions in his ^{safety} review ~~projection~~ for the FSAR. At
11 this time Mr. Gillen had chosen to move to another
12 office within NRC and so the -- the reviewer for Midland
13 was leaving and there was ^{an} ~~no~~ opening. At that time our
14 work schedule was very heavy, ^{It} was becoming recognized
15 that the extent of the problem of Midland was very
16 extensive, and it was felt by the Management of NRC to
17 go and obtain independent assistance, such as the Corps
18 of Engineers, in the review of the Midland Project.

19 Q Was it felt that because of your past dealings with the
20 Corps, when you'd actually worked for them, that that
21 would assist in working with the Corps?

22 A I think that was one of several considerations; yes.

23 Q What was your role in connection with the interface that
24 developed with the Corps?

1 A The interface did change and did develop through the
2 course of the review. In the latter part of 1979 I was
3 mainly concerned with working out the arrangements of
4 the Interagency Agreement, making sure the Corps had
5 been given the documents for the Midland Project, and
6 also meeting with the Corps to explain what Standard
7 Review Plans, what Regulatory Guides they would need to
8 complete this assignment that they were undertaking with
9 the NRC. At the beginning it was perceived that the
10 Corps would do the major part of the geotechnical
11 engineering review. As things developed and we got into
12 the Hearing process, I became more involved than I think
13 was originally anticipated.

14 Q I noticed in looking at NRC 280 that it is dated
15 September 21, 1979. And that if you look over to the
16 next to the last page of the document down near the
17 bottom, under Specific Work Requirements, there's a
18 reference to a Technical Monitor and your name appears.
19 Was it anticipated when the Agreement was ~~re~~ered back
20 in September, 21, 1979 that you would be ~~as~~ the
21 Technical Monitor on behalf of the NRC?

22 A At the time of the Agreement was assigned, it was
23 recognized that I would ^{be} the Technical Monitor; yes.

24 Q And when did you actually take up your duties in that

1 regard?

2 A I would say when the contract was signed in September
3 1979 and that -- and the aspects or duties that I
4 undertook at that time was to assure that the Corps was
5 receiving the proper documents.

6 Q You said that as the relationship with the Corps
7 developed your role became a little bit more than maybe
8 was originally anticipated. Could you explain in a
9 little bit more detail what your working relationship
10 was with the Corps and how it evolved in the period
11 after the Fall of 1979 when you first became involved?

12 Q Well, I have already indicated that my initial work with
13 the Corps was to make sure that they had the proper
14 documents, the Midland documents and the NRC Regulatory
15 Guides and Standard Review Plans. That was the initial
16 one.

17 Then it was shortly after that that the December
18 6th Order was issued and Consumers then appealed that in
19 late December 1979. So, our Interagency Agreement did
20 not anticipate the extensive Hearing that we got into on
21 the Midland Project. And so as we got into that, as we
22 got in to trying to understand the extent of the
23 problem, what was needed as an acceptable fix to the
24 different problems that were developing, until that all

1 became clear, I found myself spending more time on the
2 Midland Project than had originally been anticipated;
3 and we got into a series of depositions, both of
4 ourselves and of the members of the Utility Company,
5 Consumers Power Company, and Bechtel.

6 Q I'm going to come back and trace in a little bit more
7 detail what you first got involved with at the Midland
8 Project; when you looked at the documents and then some
9 of the later stages. But for the moment I wanted to
10 explore a little bit sort of how deeply you got into
11 reviewing the entire soil situation at Midland in the
12 course of your work. Did you get quite deeply involved
13 in it or not?

14 A Initially, no. And there I'm referring to what are
15 called the 50.54 (1) documents. And they were the
16 responses of the Applicant to the NRC's questions.
17 Initially I was not heavily involved in those, that was
18 being left up to the Corps. But as the Corps developed
19 their questions in response to their review of those
20 documents, I became more involved because of the
21 differences that were developing between the questions
22 that were being asked and the responses that were being
23 given. And so by the -- I'd say by 1981 I was
24 essentially reviewing the same documents as the Corps of

1 Engineers.

2 Q And as the situation progressed, did you get into a
3 situation where you actually met on a reasonably regular
4 basis with the people from Consumers and reached to
5 discuss the proposed remedial fixes for the Midland
6 Project?

7 A We didn't meet quite often with Consumers with respect
8 to the fixes. I would say what was triggering those
9 meetings was the ASLB Hearing that was going on and the
10 recognition that they were developing fixes and
11 presenting them as testimony in the ASLB Hearings. And
12 we were reviewing that work and during the course of
13 that process we met with them many times.

14 Q Let me back -- well, I guess I should have touched a
15 little bit on one other item before I come back to sort
16 of what you did when you first came on-board on the
17 project.

18 I take it from your testimony here today that you
19 became involved in testifying in the course of the NRC
20 Hearings. Did you prepare testimony from time to time
21 in connection with those ASLB Hearings?

22 A Yes.

23 Q In that regard, let me hand you a document which has
24 been marked in this case as NRC 301.1. I'm going to

1 come back and refer to this document from time to time.

2 (Exhibit HRC 301.1; Prepared testimony
3 given during ASLB Hearings in
4 December 1981.)

5 BY MR. JENTES:

6 Q Is this some prepared testimony on behalf of yourself,
7 Mr. Hood, and Mr. Singh, that's S-i-n-g-h, with regard
8 to the remedial underpinning of the auxiliary building
9 area that was given during the ASLB Hearings in December
10 or 1981?

11 A The only thing I'm not sure of with respect to what you
12 have asked is whether the auxiliary building Hearings
13 were in December 1981. Other than that, yes.

14 Q All right. The cover sheet of the document which you've
15 turned over there is the actual transcript, you'll
16 notice it's a little obscured, but the date is December
17 3, 1981. And that's when the actual testimony was given
18 at the Hearings.

19 A Yes.

20 Q Did you work with Mr. Hood and Mr. Singh in putting
21 together this, if you will, combined set of testimony?

22 A I did.

23 Q Let me now sort of back-up to when you came on-board to
24 the Midland Project in the fall of 1979. And in

1 connection with that I'll hand you a couple of
2 documents, the first of which has been marked as NRC 68.

3 MR. LIBBY: Thank you.

4 BY MR. JENTES:

5 Q Which has been previously identified in this case as a
6 letter from Mr. Keppler to Mr. Howell of Consumers Power
7 of March 22nd, 1979 sending along the final version of
8 the investigative report on the Midland soil situation
9 that had been prepared by Messrs. Gallagher, and
10 Phillip, and Maxwell.

11 The second document has been marked as NRC 204.

12 MR. LIBBY: Thank you.

13 BY MR. JENTES:

14 Q And it has previously been identified as a letter from
15 Mr. Denton of the NRC to Mr. Howell of March 21, 1979
16 sending along a so-called 50.54 request for additional
17 information.

18 Are you acquainted with these two documents in a
19 general way?

20 A I did not have input to -- into either of these
21 documents. I'm acquainted with them in the sense that
22 I'm sure in the course of my review for the Midland
23 Project I have read them at one time or another, and I
24 also am aware that these are documents that you had

1 identified for this deposition.

2 Q You mentioned a little bit earlier in your testimony
3 here today that you were aware, I believe, when you got
4 involved in the Fall of 1979 that the NRC was concerned
5 about the soils problems at the Midland site. What did
6 you learn about that concern when you got into the
7 project in the Fall of 1979?

8 MR. LIBBY: I object. I think the question is
9 ambiguous and calls for a narrative.

10 BY MR. JENTES:

11 Q Please go ahead and answer.

12 A As I understand your question, you're asking me to put
13 myself in the timeframe of late 1979 and to identify
14 what I understood was the status of the Midland Project.
15 Is that correct?

16 Q Very close to it. The only modification I'd make is I'm
17 interested not so much in just the status of the
18 project, but what you understood to be the NRC concerns
19 with the soil situation at the project and, obviously,
20 going on from that, what was the role that you and the
21 Corps were to play in addressing those problems. So I'm
22 sort of looking at what you understood the problems were
23 and what was the nature of the undertaking that the
24 Corps and you were to set out on at that stage.

1 MR. LIBBY: Same objection.

2 A July -- excuse me, 1978, the settlement of the diesel
3 generator building had been large and I think at that
4 time, or it was either in August of 1978, it was larger
5 than had been predicted for the forty year planned life.
6 Consumers had notified the NRC of this information.
7 What developed after that was -- was a series of
8 questions from the NRC that were attempting to identify
9 what had caused that problem and how wide-spread that
10 problem was. And so there was a series of questions.
11 The Staff, and at that time in my area would have been
12 Mr. Gillen and Mr. Heller, who had been meeting and who
13 had been developing the questions trying to understand
14 how bad was the problem at Midland.

15 A series of questions were asked with respect to
16 the diesel generator building and later on, but before
17 December of 1979, asking what were the other structures
18 that were built on plant fill, were they affected by
19 this fill problem; and, if they were, what plans was the
20 Applicant going to develop to demonstrate that these
21 structures would be safe and equal to what had been
22 documented and provided in previous documents submitted
23 to the PSAR.

24 At this time in late 1979, the Corps was then being

1 asked to pick up on the Midland Project recognizing that
2 other structures because of subsurface explorations that
3 were being conducted in late 1978 were indicating other
4 structures were affected by the plant fill fill problem.
5 And so the Corps was asked to review the FSAR documents
6 and the 50.54 (f) documents and satisfy themselves that
7 the Category I structures and piping were stable and
8 properly designed for their foundation. And to do that,
9 in recognition of the new information that was coming
10 in, the Corps would ask certain questions attempting to
11 satisfy themselves that it was safe.

12 Q When you came on-board for the project, as it were, in
13 the Fall of 1979, do you recall having reviewed Mr.
14 Gallagher's report that is NRC 68?

15 A I'm fairly certain I did not review this document in
16 1979. I think I reviewed it during the course of the
17 ASLB Hearings.

18 Q All right. And when did you become involved with Mr.
19 Gallagher's report as they pertained to the ASLB
20 Hearings; approximately what was the timeframe?

21 A One of the earlier documents you provided to me was the
22 Summary Disposition; I think it was at that time that my
23 efforts were being coordinated with Mr. Gallagher.

24 Q And that was in April of 1981 as the document you're

1 referring to?

2 A Yes. But there was a period before then where the
3 problem was becoming better known what the cause of the
4 problem was; and that was the fill and its compaction.
5 That information was being known and at that time our
6 design review efforts were then being coordinated with
7 Mr. Gallagher and resulted in that summary -- excuse me,
8 deposition.

9 Q Turning to NRC 204 for a moment, which is the 50.54
10 request. You've referred several times during your
11 testimony here today to that request and some of the
12 responses. When you started in the Fall of 1979, did
13 you review the request that had been made by the NRC for
14 data under 50.54 and the responses that had come in from
15 Consumers Power as of that time?

16 A Yes.

17 Q Were they among the documents that you referred to
18 earlier as having been assembled by you and gotten to
19 the -- to the Corps for their review?

20 A Yes.

21 Q When you started in the Fall of 1979 on this project,
22 did you also examine what fixes, if you will, had been
23 proposed by Consumers Power and its architect/engineer,
24 Bechtel Corporation, to take care of the soils problem?

1 A We're talking of the timeframe of late 1979?

2 Q That's correct.

3 A Yes.

4 Q In that connection let me hand you a couple more
5 documents. Which first I'll hand you what has been
6 marked as CPC 2044. This is a transmittal letter from
7 Mr. Howell to Mr. Keppler of June 25, 1979. And it
8 sends along, as you'll see at the third page of the
9 document, the Interim Report Number Six on MCAR 24.
10 That particular Interim Report being dated June 11,
11 1979. This report also happens to include an early
12 proposal for dealing with problems at the auxiliary
13 building.

14 Was this one of the fixes that you reviewed in the
15 Fall of 1979?

16 A I would have to say in the Fall of 1979 that I had not
17 reviewed this and the reason for that. It was at this
18 time that we were still looking to the Corps as the
19 major geotechnical engineering reviewer.

20 Q Let me hand you then the next document which is CPC 386.
21 This has been previously identified as a transmittal
22 letter from Mr. Howell, it's actually signed by Mr.
23 Margaglio to Mr. Keppler of August 10, 1979. And
24 attached to it are some meeting notes and the actual

1 presentation made by Consumers and its consultants, et
2 cetera, to the NRC on July 18, 1979. And this contains
3 also some remedial proposals relating to the auxiliary
4 building. Have you had -- or did you review this
5 document?

6 A In late 1979, I would say my answer would be the same as
7 previously on that, in that this document had been given
8 to the Corps for their review; I had not yet gotten into
9 its contents. But it was shortly in 1980 that I felt
10 like that was the timeframe where I did become involved.

11 Q When you got involved in late 1979 and then into the
12 early part of 1980, what did you understand was the
13 remedial measure that was proposed by Consumers Power to
14 deal with the soils problems associated with the
15 auxiliary building?

16 A To my recollection, there was an initial conceptual
17 design to remove the poor fill under the auxiliary
18 building and then that was subsequently changed to put
19 caissons at the end of the EPA, the electrical
20 penetration areas. And it's my recollection that that's
21 what is proposed in this document.

22 Q And the document that you're referring to is the one
23 that's CPC 386, the presentation that was made to the
24 NRC on July 18 or 1979?

1 A Yes. In answer to your question, I recall we saw the
2 document now and reviewed that.

3 Q Actually you're very correct. That is when the proposal
4 was made.

5 When you started into this project in the Fall of
6 1979, had the people at the NRC formed any views one way
7 or another with regard to whether or not this caisson
8 proposal was a workable proposal or not?

9 A In the timeframe of late 1979, I would say no one at NRC
10 had looked at it in-depth and that's why -- and that was
11 because they were relying on the Corps to now pick up
12 the review and to review that aspect of it. I'd say in
13 late 1979 the people that were involved, and that would
14 be the people that preceded me, had asked questions
15 about the different structures, the auxiliary building
16 being one of those. And up until December 6th, 1979 had
17 felt the questions that had been asked had not been
18 satisfactorily answered.

19 Q Was one of the reasons that the Corps had been brought
20 in in September of 1979 was to assess this remedial
21 soils proposal with regard to the caissons at the
22 auxiliary building?

23 A That was one of the anticipated duties; yes.

24 Q Was the Corps also brought in to look at other of the

1 remedial proposals that were being put forward by
2 Consumers Power to deal with the soils problems at
3 Midland?

4 A At the time the Corps was being brought on-board, they
5 were being asked to look at all the remedial measures.

6 Q By taking a look over at the third page of CPC 386,
7 you'll see some meeting notes there. And under item 3.0
8 there's a reference to Remedial Work in Progress or
9 Planned. As you understood it, was this listing here of
10 the items 3.1 through 3.8 the remedial work that was
11 being planned or that was actually in progress as of the
12 Fall of 1979 when you came on-board?

13 A I think in fairness to answer that question I would have
14 to re-read what is in this document to those aspects. I
15 guess what I'm saying is it's my understanding of this
16 page that they are identifying the remedial work that's
17 going to be done for these structures; but what's in
18 following pages and to what depth they got into, I'd
19 have to look at these documents.

20 Q I understand, Mr. Kane. I was not getting into the
21 details. What I was just sort of looking at for the
22 moment was for broad strokes is what's listed here as
23 the eight items of remedial work, were those the eight
24 items that you understood were needed to be addressed to

1 deal with the soils problems as of the Fall of 1979?

2 A I would say, not having read this document in detail in
3 late 1979, I would say no to your answer. But I also
4 feel that what we were relying on the Corps of Engineers
5 to do was to make an independent review and to assess
6 for themselves what structures were involved. So this
7 list may or may not be correct depending on what the
8 Corps' findings were.

9 Q Did you ultimately become involved in reviewing the
10 remedial proposals with regard to each of the eight
11 items that are listed here? And I'm now not addressing
12 just into the Fall of 1979, but as your work with the
13 Corps proceeded did you become involved in reviewing the
14 remedial proposals as to each of these eight items?

15 A Yes.

16 Q And did you become quite well-acquainted with the
17 remedial proposals?

18 A Yes, I did.

19 Q From time to time this morning you've referred to an
20 Order that was issued on December 6th, of 1979. I'd
21 like to hand you a copy of that Order, as I understand
22 it, and we make certain that we're talking about the
23 same document. This document has been marked as NRC
24 473.

1 MR. LIBBY: Thank you.

2 BY MR. JENTES:

3 Q And it's a letter from Mr. Case and Mr. Stello, S-t-e
4 double l-o, to Mr. Howell of Consumers Power of December
5 6th, 1979 sending along the order modifying construction
6 permits.

7 Is the Order that begins here at Bates page 1944,
8 and continues on for a number of pages after that, the
9 Order that you've referred to from time to time?

10 A Yes, sir.

11 Q In the course of the Order itself there's a reference to
12 some factual predicates for the action taken by the NRC
13 in this Order. To what extent, if at all, were you
14 involved in the matters that are related in here?

15 A With respect to how was I involved in the development of
16 this Order, my answer would be that I was not involved
17 at all.

18 Q All right. Let me explore that a little bit more in
19 this regard. That if you look at page 1944, there's a
20 reference to the investigation that had been made and
21 that according to the Order revealed a breakdown in
22 quality assurance related to soil construction
23 activities; and then there's a listing of that breakdown
24 on pages one and over through the first half of the

1 second page. Had you been involved at all in the
2 investigation of the quality assurance breakdown as of
3 the time the Order issued?

4 A I was not.

5 Q If you look over to page two there's a second factual
6 predicate stated in the second full paragraph there. It
7 talks about items of noncompliance that are described in
8 Appendix A to the Order. Had you been involved at all
9 in investigating those items of noncompliance?

10 A You're referring to page two and that's item two, three,
11 and four, and five?

12 Q No. I'm sorry. I'm starting in the first full
13 paragraph after the materials you just referred to down
14 there where it says: The items of noncompliance
15 resulting from the NRC investigation are described in
16 Appendix A to this Order. Do you see that?

17 A Yes, sir.

18 Q Were you involved at all in investigating those items of
19 noncompliance?

20 A I was not involved in investigating these
21 noncompliances. I became involved in the ASLB Hearing
22 on testifying on this matter.

23 Q All right. But that came later than the Order?

24 A That is correct.

1 Q There's also a reference a little bit further on in that
2 same paragraph to a material false statement that's
3 described more fully in Appendix B. Had you been
4 involved at all in investigating that false statement or
5 the materiality of it?

6 A At this time of the Order, no.

7 Q All right. Then if you turn over to page three there's
8 a description of the information that had been requested
9 under the 50.54; and then there's a discussion of what
10 was felt by the NRC to be insufficiencies in the
11 information that had been supplied. This was stated as
12 another factual predicate for the Order. By the time
13 the Order entered -- was entered in December of 1979,
14 had you made any review of the adequacy or not of the
15 information that had been supplied by Consumers Power in
16 response to these various 50.54 requests?

17 A By the end of 1979, no. But I did become involved
18 later.

19 Q Okay. I'd like to ask you a little bit more about one
20 specific request for information if I can find it here.
21 Here we are. I'll hand you what has been marked as NRC
22 281.

23 (Exhibit NRC 281; Letter from

24 L. Rubenstein to S. Howell dated

9-11-79.)

BY MR. JENTES:

Q This is a letter from Mr. Rubenstein of the NRC to Mr. Howell dated September 11, 1979 on the subject of request for additional quality assurance information. This gets a little bit closer into the timeframe when you actually became involved here. Did you play any part in the issuance of this request for additional quality assurance information?

A At this time, no.

Q If you turn over to the attachment, which is Enclosure One, there's a reference to a supplemental request here and it's denominated question twenty-three; and there's some later references on a number of occasions to this question and to the response that Consumers Power made to the question.

Did you later have occasion to review the information supplied by Consumers Power to this question seeking additional information concerning quality assurance matters?

A I am sure that I have read it. The question was not generated by our Branch and, therefore, I did not review it or evaluate it in detail; but I'm sure I have read it.

1 Q All right. In the set of materials on the page you're
2 looking at at 1964, it talks about an earlier response
3 that Consumers Power had made which they had listed some
4 thirteen deficiencies in Q/A. And the full text said:
5 "In order to determine the acceptability of the
6 corrective actions for the thirteen deficiencies
7 considering the possibility that these deficiencies are
8 of a generic nature that could affect other areas of the
9 facility, a more complete understanding of the root
10 cause of each deficiency is necessary."

11 When you began your work in the Fall of 1979 and
12 became more involved into the early part of 1980, did
13 you have any understanding as to whether or not the NRC
14 was concerned about generic quality assurance
15 deficiencies at the Midland Plant with regard to soils?

16 MR. LIBBY: Objection: Lack of foundation.
17 Also as to reading of the document.

18 A I became aware through my interrelationship with other
19 Reviewers and the Project Manager that there was
20 questions with respect to a breakdown in Q/A; yes.

21 Q Did you have any understanding as to how that related,
22 if at all, to this December 6th, 1979 Order, that is NRC
23 473, and that I've showed you earlier? You've touched
24 on a couple of times.

1 A I would say this is -- this document is related in the
2 sense that NRC is trying to understand what went wrong,
3 why do we have the problem with the plant fill, and
4 trying to trace it down, and some people concluding that
5 it was a breakdown in Q/A. And in that sense those same
6 people were the ones that were being spoken to with
7 respect to the December 6th Order.

8 Q What was your understanding as to the effect of the
9 December 6th, 1979 Order? What was it designed to do as
10 you understood it?

11 A As I understood it, the two Offices, Office of
12 Inspection and Enforcement and the Office of NRR, had
13 made a judgment on December 6th, 1979 that there were
14 problems, which responses from the Applicant were not
15 adequate, that it required them to stop construction in
16 the area of earthwork and that is the placement of fill
17 and the excavation. And so ~~that~~ my understanding ^{is that} ~~or~~
18 there are several reasons for the Order, and one of the
19 major ones was to stop construction, stop earthwork
20 construction. There were other conditions of the Order.

21 Q With regard to the stopping the earthwork, did that
22 involve, as you understood, all of the remedial soils
23 activities?

24 A Yes.

1 Q After the remedial soils activities were halted by the
2 NRC by this Order, what happened with regard to the
3 activities of the Corps and yourself in terms of
4 investigating the remedial soils activities and, in
5 effect, deciding whether or not they could go forward or
6 not?

7 A The Order was a determination by the people that had
8 been most involved with the Midland Project up till that
9 time. The Corps' coming on-board and I'm coming
10 on-board and what we're trying to do is to assess what
11 caused the problem, how extensive is it and what is
12 being proposed to fix it. And so we are aware of when
13 we're doing that review that the Order is in existence
14 and we are also aware that Consumers appealed the Order.

15 The Order itself didn't affect our work, in the
16 sense that we still had the main objective of reviewing
17 the foundation design and assuring that what was going
18 to be proposed and carried out in construction was
19 adequate. And so it really didn't affect our work to a
20 significant degree.

21 Q At the time that you were getting involved in this
22 review process with the Corps, were you principally
23 looking at the auxiliary building or were you looking at
24 all of the aspects of the remedial soils activities?

1 A We were looking at all aspects.

2 Q And, as you understood it, would you describe all those
3 activities; what is involved in the remedial soils
4 activities that you were looking at?

5 A Well, first of all, there was the question of what
6 structures and conduits are affected by the problem.
7 And we were looking at the explorations and testing that
8 the Applicant had done in the latter part of 1978 and
9 what they were indicating with respect to the other
10 structures. So at that time we were assessing what
11 structures are affected, to what extent, and now what
12 can be done to rectify that situation and make ^{them} ~~the item~~
13 stable.

14 Q I take it that one of the structures that you were
15 looking at was various aspects of the auxiliary
16 building?

17 A That is correct.

18 Q And in particular what parts of the auxiliary building
19 were you looking at?

20 A The auxiliary building itself has major portions at
21 different foundation elevations. The deeper portion of
22 the main auxiliary building is down on the natural
23 lacustrine clay and glacial till materials. There is a
24 portion, and that is the control tower and electrical

1 penetration areas, which extend off the south end of the
2 auxiliary building which are rounded on the plant fill.
3 And so our efforts, since we are now focusing on the
4 project, the plant fill, we're looking predominantly at
5 the control tower and the EPA, but also looking at what
6 had happened on the part that was on the deeper natural
7 soils.

8 Q There's been testimony earlier that the electrical
9 penetration area is almost like wings reaching out over
10 the fill. Is that a fair description of the EPA?

11 MR. LIBBY: Objection: Leading.

12 A I've heard the EPA referred to as wings. But it's my
13 understanding that the control tower, which is connected
14 to the deeper portion of the main auxiliary building is
15 structurally connected to the main auxiliary building
16 and extends out, and then the two EPAs are connected to
17 the control tower and extend out both in east and west
18 directions.

19 Q Okay. In addition to the auxiliary building there's
20 been references from time to time about the isolation
21 valve pits. How did they interrelate with the auxiliary
22 building?

23 A The feedwater isolation valve pits, and there are two of
24 them at the two extremities of the EPAs, are structures

1 that are not structurally connected to any other
2 structure although they do have piping connections, but
3 they are independent structures which also were founded
4 on the backfill or the plant fill.

5 Q And for that reason you were also reviewing them?

6 A That is correct.

7 Q Were you also investigating the service water pump
8 structure?

9 A Yes.

10 Q And what about the diesel generator building? I
11 understand that by the time you came on-board they were
12 already certain remedial programs underway with regard
13 to a surcharge. To what extent were you involved in
14 continuing review of the DGB?

15 A We were looking at the fix that had been completed on
16 the DGB, which was the surcharging. What we were
17 attempting to do was to satisfy ourselves that the
18 surcharging did cause the foundation soils to
19 consolidate and to look at the effect that the
20 surcharging program had brought onto the DGB.

21 Q In short, and laymen's terms, were you looking to make
22 certain that the surcharge had, in fact, gotten the soil
23 sufficiently compacted after the fact so that you were
24 and could be confident of the future safety of that

1 structure?

2 A Yes. We were looking to make sure that the foundation
3 of the DGB would not result in large settlements during
4 years of plant operation. But one of our main concerns
5 was also recognizing that the DGB had just settled quite
6 a large amount of settlement and to try and evaluate
7 that fact of that settlement on an already completed
8 structure.

9 Q What, if any, review, did you understand to the tank
10 farm and why was that a matter of concern, if at all?

11 A I think you're referring to the borated water storage
12 tanks, and there are two of them, one for unit one and
13 one for unit two, and they also had settled larger than
14 anticipated. Unit two had settled considerably more
15 than unit one. And we were trying to understand the
16 impact of the settlement that had occurred and also
17 understand what future settlement we could expect and
18 what could that do to the structures.

19 Q What other set of structures? Are the diesel oil fuel
20 tanks, was this also a set of structures or a structure,
21 if you will, or a group of structures that was under
22 review by you and the Corps?

23 A Yes, sir. They are not part of the tank farm area, they
24 are, I think in the southeast portion of the plant and

1 it's a series of tanks. And, yes, we were looking at
2 their settlement behavior and what future settlement
3 could it ~~be~~ experienced.

4 Q I've been looking for this listing at the presentation
5 that was made in July of 1979 to the NRC by Consumers
6 Power that's in CPC 386. They also listed the
7 underground facilities for potential remedial activity.
8 What, as you understood it, was involved in that aspect
9 of the problem?

10 A I would interpret the underground facilities to be the
11 underground piping which would include the electrical
12 duct banks and safety related conduits such as for
13 service water -- piping that would carry service water.
14 And so it would be any -- any piping or conduit that is
15 safety related.

16 Q And why was this a matter of concern from a soils and
17 geotechnics standpoint?

18 A It had been indicated based on the information that was
19 being evolved that the fill was settling under its own
20 weight and there was a concern ~~that~~ whether the pipe
21 that had been buried in that fill was being uniformly or
22 differentially settled to where it could be imposing
23 stresses on the piping.

24 Q There's also been some testimony about the need for

1 dewatering of the plant site in connection with the
2 remedial activities. Why was dewatering something that
3 was involved in this whole process?

4 A The explorations that had been completed, the majority
5 of them being in late 1978, had indicated some zones of
6 loose sands in the fill that had been placed at the
7 site. The loose sands fill under strong ^{earthquake} ~~earthwork~~
8 loading could potentially liquefy. So the dewatering
9 was the Applicant's proposed remedial treatment to
10 address those loose sands. And the purpose of the
11 dewatering was to remove the water from the fill at the
12 locations where we had the problem with loose sands so
13 that those sands would not be susceptible to
14 liquefaction.

15 Q Ultimately did this dewatering program involve the
16 construction of the so-called freeze wall around the
17 site to provide a barrier from water?

18 MR. LIBBY: Objection: Leading.

19 A The freeze wall is not part of the permanent dewatering
20 system. The freeze wall is a construction dewatering
21 system that was installed to handle water during the
22 excavation for the underpinning for the auxiliary
23 building.

24 BY MR. JENTES:

1 Q How, as you understood it, was the dewatering on a
2 permanent basis to be handled?

3 A There were a series of wells located at the plant site
4 which would draw down the water in those areas critical
5 to the loose sands. And there was a demonstration by
6 the Applicant that this could be done. And there was
7 actually a large-scale field test by the Applicant to
8 demonstrate the adequacy of the permanent dewatering
9 system.

10 Q Now, I've asked you a number of questions about the
11 various structures that were under review in late 1979
12 and the early part of 1980 by you and the Corps. Was
13 there a request by the NRC for additional information to
14 permit the Corps and the NRC to assess these various
15 remedial soils activities?

16 A To my recollection there was several series of requests
17 that the Corps provided to us which we forwarded to the
18 Applicant seeking additional information on those
19 proposed fixes.

20 Q And what was your role in developing or in carrying out
21 those requests for information?

22 A As the Technical Monitor for the NRC Agreement with the
23 Corps, it was my job to have the Corps address each of
24 the structures by providing us with their questions on

1 what information they felt was necessary to demonstrate
2 the fixes there adequate. And so I closely corresponded
3 and talked on the telephone with the Corps in the
4 development of those questions, which was ultimately
5 forwarded to us, and then ultimately forwarded to the
6 Applicant.

7 Q Now, in developing these questions and requests for
8 additional data, were these data that the Corps and you,
9 as the Geotechnic Monitor at the NRC, felt were
10 important to the assessment of the safety aspects or
11 these remedial efforts?

12 A Yes.

13 Q Let me hand you a document which has been been marked as
14 NRC 215. Could you identify this document for the
15 record, please.

16 A The date is -- it's very difficult to read, but I
17 understand it as June 30th, 1980.

18 Q Yes. That's correct.

19 A And it is a document from A. Schwencer of the NRC to J.
20 W. Cook of Consumers Power Company. The subject is
21 request for additional information regarding plant fill.
22 And what it is is one of the earlier requests of the
23 Corps of Engineers that is being transmitted to
24 Consumers asking for information so that they could

1 proceed with their safety review.

2 Q And what part did you play in developing the information
3 that's contained in this request?

4 A The major part of the request is the additional
5 explorations that are -- additional borings that are
6 being asked by the Corps. The part that I played in
7 that was to recognize the Corps was asking for this
8 information, ^{and} in my own mind, to review the basis for the
9 Corps request and ^{to} look at, in a general way, the
10 explorations that had already been completed and to
11 determine for my own self whether I felt the Corps'
12 request was reasonable. And I did that and I supported
13 the Corps' request. But essentially the information
14 that is asked for predominantly came from the Corps of
15 Engineers.

16 Q In the opening line of the letter it talks about earlier
17 requests from November 19, 1979. Had there been
18 requests by the Corps through the NRC to Consumers for
19 information that dated back into November, 1979?

20 A To my knowledge, the Corps had not asked for information
21 as of November 19th, 1979. I think it was other
22 Divisions within NRC.

23 Q I understand.

24 In the second paragraph, it says: "As noted in our

1 Request 37 of Enclosure 1, your position in previous
2 responses to Request 5 and 35 not to complete additional
3 explorations, sampling and laboratory testing after
4 preloading continues to be unacceptable to us."

5 As you understood it, had Consumers taken the
6 position that additional testing, explorations and
7 sampling was not necessary?

8 MR. LIBBY: Objection: Leading.

9 A It was my understanding, based on having read previous
10 NRC questions that we're trying to have the Applicant
11 demonstrate the -- to what extent the problem existed
12 and the remedial fixes. Previous NRC Reviewers had
13 asked for that information and it was not being complied
14 with by the Applicant.

15 Q Did Mr. -- excuse me.

16 Did Consumers oppose the request for -- let me
17 strike that and let me start again.

18 What position did Consumers take in response to the
19 requests for additional information that's reflected in
20 NRC 215?

21 A The Applicant appealed to NRC's Management this request
22 for additional information, which included taking of the
23 borings and performing laboratory testing.

24 Q And in connection with that appeal did Consumers take

1 the position that the additional explorations and
2 borings, et cetera, should or should not be taken?

3 A They indicated that they felt the borings and testing
4 need not be completed, and did not plan to do so.

5 Q Let me hand you what has been marked as NRC 313. Can
6 you identify this document for the record?

7 A The document is a summary of an Appeals Meeting that
8 took place on August 29, 1980 at the Midland, Michigan
9 office of Consumers Power Company. What it was, it was
10 a meeting between the Staff, Consumers, and NRC
11 Management where NRC Management listened to the bases
12 for Consumers' appeal or not taking the borings. The
13 document, as I understand, had been written by Darl Hood
14 Hood, the Project Manager.

15 Q Were you present at this meeting or the series of
16 meetings of the so-called Appeals Meetings?

17 A Yes, I was.

18 Q And did you have -- have you previously reviewed Mr.
19 Hood's summary of what happened at the meeting?

20 A Yes.

21 Q And does it accurately reflect what you recall happening
22 during those meetings?

23 A It does.

24 Q I'd like to ask you a couple of questions about some or

1 the things that did happen. Turning first to the first
2 page, I wonder if you could explain a little bit more
3 what was involved in the appeal. There seems to be a
4 reference here to an appeal to the Director of
5 Engineering and the Assistant Director of Components and
6 Structures Engineering.

7 What was the nature of the appeal process?

8 A Well, the Staff in the previous document, which is
9 identified as NRC 215, had gotten to where they had
10 specifically located borings for the Applicant to
11 complete, and had indicated that they would be providing
12 info -- additional information ^{on} ~~of~~ the testing of those
13 sample^s that would be ^{required} ~~re-offered~~ in those borings. So
14 the Staff had taken the position that additional borings
15 are required. The Applicant after receipt of this
16 document appealed to the NRC ~~that~~ not to do this work.
17 And this meeting on August 29th was the the further
18 attempt by NRC's Management to understand the reasons
19 for not doing that work.

20 Q It's a little bit out of order apparently as to what
21 happened during the meeting, but let me ask you to turn
22 over to page three of the document. There's a reference
23 here to the Staff presentation and the description
24 starts out with Doctor Heller apparently making a sort

1 of an overview presentation on behalf of the Staff. Is
2 that correct?

3 A That is correct.

4 Q What exactly was Mr. -- or Doctor Heller's position and
5 how did he interrelate with you?

6 A Doctor Heller is my Supervisor. Doctor Heller is the
7 Section Leader of the Geotechnical Engineering Section.

8 Q After he made his overview presentation apparently you
9 made a presentation in which I gather you explained why
10 you felt that various explorations and borings had to be
11 undertaken. Is that correct?

12 A It would have to be recognized that it was a very brief
13 presentation. I think the earlier page identified the
14 limits that was given to the Staff and to the Applicant,
15 and the presentation is being taken to NRR Management
16 and also the public that was there. But it was agreed
17 to beforehand that our presentation would be very
18 limited since we did have access to our Management after
19 this meeting. And so our presentation was very brief.

20 Q Had you had a set of meetings with the Consumers Power
21 people in advance of this to explain your position? I'm
22 speaking about Mr. Kane's position about these -- the
23 need for these borings?

24 A Yes. I'm not sure if it's a set of meetings. I think

1 there was only one formal meeting, I think, which was in
2 July.

3 Q Without getting into too much detail, I'm wondering if
4 you could explain for the record here why you were
5 interested in additional borings and explorations in
6 conjunction with the auxiliary building and the service
7 water pump structure building?

8 A The proposal at this time for the auxiliary building, to
9 my understanding, was still the caissons at the
10 extremities of the EPA. The Corps and myself had looked
11 at the information that was available at the depths that
12 these caissons would be extending to and it was felt we
13 needed additional information to demonstrate the
14 adequacy of the caisson design; there you would be
15 looking for such things ^{as} ~~at~~ the bearing capacity of the
16 caissons and the anticipated settlements. And so those
17 borings -- those boring locations chosen by the Corps
18 were intended to give us the information for the caisson
19 design of the auxiliary building.

20 With respect to the service water pump structure,
21 there were some borings that were identified as being
22 needed there in recognition of the remedial fix that was
23 being proposed by the Applicant in that area.

24 Q By the time of the Summer of 1980, had you and the Corps

1 begun to develop any concerns about the caisson
2 proposal?

3 A The concerns that were being developed ^{were} ~~was~~ to look at
4 what information had been provided with respect to the
5 caisson design. And it was our understanding it was
6 more of the conceptual nature that they were going to
7 put caisson in, and we were attempting to get the more
8 specific foundation design aspects or, you know, what
9 are you using in the way of bearing capacity design,
10 what settlements are you expecting.

11 So our questions, the requests for the borings were
12 all going after more specific design information.

13 Q We've been going for about an hour and a half now, would
14 it be well to take a break?

15 A It's fine with me.

16 MR. JENTES: Okay. Why don't we go off the
17 record.

18 VIDEO OPERATOR: Stopping both tapes.

19 (Brief recess taken.)

20 VIDEO OPERATOR: Okay. Starting the recorders
21 now. And we are now recording.

22 BY MR. JENTES:

23 Q Mr. Kane, back on the record, and referring to NRC 313,
24 the summary of the Appeals Meeting: Once again, let me

1 ask you, if you will, to turn over to the fourth page
2 where there's a reference to some questions being asked
3 by Messrs. Vollmer and Knight up near the top. And, on,
4 about halfway through the second paragraph it states
5 that Mr. Vollmer noted "that the Staff's requests were
6 intended to provide for expedient resolution of the
7 problems". Let me stop there for a moment.

8 As you understood it, were the Staff's requests
9 intended to provide for expedient resolution of the
10 problems as Mr. Vollmer indicated?

11 A Yes, sir.

12 Q Had you received any general instructions from your
13 superiors that you were to proceed expeditiously with
14 the review of the entire remedial effort?

15 A Not specific to me. I think what is being recognized is
16 that the Midland Plant is under construction, there is
17 presently an Order stopping certain aspects of
18 construction, and we were being encouraged to know what
19 the problems were and to work for a resolution to
20 provide a safe structure. That is the intent of the
21 expedient, I think.

22 Q Are you able to state on your experience and working on
23 the Midland Project, whether you and the Corps proceeded
24 expeditiously to review with your review and the

1 analysis of the data that you received?

2 A I think we did. And perhaps more than for other
3 structures. I know the Corps and myself have spent a
4 lot of time trying to accommodate the Applicant's
5 schedule; particularly during the ASLB Hearings where
6 there were several times where it was indicated that a
7 certain structure would be covered in the ASLB Hearing
8 and because something would come up that conflicted with
9 the construction schedule, the Staff would accommodate
10 Consumers' rescheduling of the hearing. And we were
11 attempting to work for an expedient and safe resolution.

12 Q Referring once again to Mr. Vollmer's comments that I
13 asked you about a moment ago, the report goes on to
14 state that Mr. Vollmer "noted that he was somewhat
15 surprised at Consumers' attitude toward not supplying
16 additional technical information".

17 Were you somewhat surprised at Consumers' attitude
18 in this regard?

19 A Yes, sir.

20 Q And why?

21 A Because what was being asked for, in my estimation, was
22 reasonable, normal information which when it would be
23 obtained and developed and evaluated could -- could lead
24 to a full resolution. And it was difficult to

1 understand why there were objections to this particular
2 program that was being asked.

3 Q If you'll turn back to page two of the memorandum,
4 there's a reference to a presentation on behalf of
5 Consumers Power and various of its consultants; and one
6 of those is Doctor Hendron. Had you had any dealings
7 with Doctor Hendron prior to this particular occasion?

8 A With respect to the Midland Project?

9 Q Yes.

10 A No.

11 Q Excuse me. Go ahead.

12 A I said, no, but we're now talking about the August 29th
13 meeting and I'm not sure Doctor Hendron was not at the
14 appeals or a meeting that preceded this one on July
15 31st. So I may have been -- it was either July 31st or
16 this meeting that I first recall being related to the
17 Midland Project with Doctor Hendron.

18 Q Did you have subsequent meetings with Doctor Hendron
19 about the Midland Project?

20 A Yes, sir.

21 Q And on how many occasions roughly?

22 A Most of it was related to the Hearing process to where
23 he would provide testimony and present it at the Hearing
24 and NRC would be responding to that testimony.

1 Q Did you ever have any dealings with the Woodward-Clyde --
2 that's C-I-Y-D-E -- Consultants group that had been
3 retained by -- well, I'm not sure whether it was
4 Consumers or Bechtel, in connection with the Midland
5 Project.

6 A After Consumers made the decision to go ahead with the
7 borings, they had retained Woodward-Clyde as the firm
8 who would do the laboratory testing. I became involved
9 with Woodward-Clyde at that time.

10 Q Did you ever meet a Mr. H. M. Horn of that organization
11 as the Woodward-Clyde organization?

12 A The name is not familiar.

13 Q Let me hand you a document which has been marked as WCL
14 3. Did you see this document back at the time it was
15 prepared in March of 1981?

16 A I did not.

17 Q Did you see it at any time prior to the time that a copy
18 of the document was supplied to you in anticipation of
19 your testimony here today?

20 A I did not.

21 Q Did you have a chance to read through this memorandum in
22 anticipation of your testimony here today?

23 A I did read it, yes.

24 Q This refers to some -- a conversation or more than --

1 more than one, possibly, between Mr. Horn and Doctor
2 Hendron with regard to the sampling and borings that
3 were being taken or proposed to be taken at the Midland
4 Project. And up on the second paragraph, it says: "I
5 also told Skip" -- referring to Hendron -- "that we did
6 not want to derine the stratigraphy --

7 A Stratigraphy.

8 Q -- with standard penetration test for fear that the NRC
9 would then beat us to death with the results of these
10 tests, period. He agreed and indicated that they
11 already have trouble with the N-values determined in the
12 earlier set of borings."

13 Were you ever advised that there had been a
14 conversation between Mr. Hendron and Mr. Horn along the
15 lines of what's reflected in this particular report?

16 MR. LIBBY: Objection: Leading. And also
17 again reading the document into the record.

18 A I was not aware prior to having received this document.
19 And I think I read it for the first time this Saturday --
20 this past Saturday. I was not aware that this
21 conversation took place.

22 BY MR. JENTES:

23 Q Whether in regard to reading the document or
24 independently of the document, had you been advised that

1 Woodward-Clyde was having trouble with the N-values
2 determined in the borings?

3 MR. LIBBY: Objection: Misleading. It's also
4 leading.

5 A I -- I do not understand this letter to say that
6 Woodward-Clyde was having trouble with the N-values. In
7 that what I would interpret this to be that perhaps
8 Doctor Hendron, based on his experience with the Midland
9 Project, is indicating they have had troubles with the
10 N-values in the past.

11 I would like to say a few comments about this.

12 What is being indicated here is that -- that there
13 is a fear of providing results to the NRC with respect
14 to a standard test, a standard penetration test. The
15 test is widely accepted by the engineering profession.
16 The test was widely used by Consumers throughout the
17 design of Midland. The test is one of the major bases
18 Consumers uses to demonstrate adequacy about
19 liquefaction. So it's data engineers widely use, it's
20 not something the NRC has devised. And now it is being
21 questioned as NRC would beat someone to death with it.
22 I think it reflects a very bad attitude on the person
23 who would indicate this; in the sense that what NRC
24 would be looking for would be factual data using a

1 standard test and, based on those test results, making
2 certain decisions. I don't understand why anyone would
3 not want to run the standard tests and be faced with the
4 results.

5 Q The reference here to N-values, what, as you understand
6 it, is an N-value?

7 A In the standard penetration test, a standard size spoon
8 sampler, which is an open tube with a shoe that fits on
9 the bottom of the tube, is driven into the ground and
10 while it is being driven the blow counts of a standard
11 hammer as it forces this spoon sampler to penetrate the
12 soil is counted. The blow counts are counted for a foot
13 of penetration, then that blow count for that foot of
14 penetration has a significance to soils and foundation
15 engineers in that it is a measure of the strength and
16 the compressability of the soil. It is a rough
17 approximation but it is an indicator which you would use
18 to decide what further testing would be necessary.

19 Q Returning to the Appeals Meeting that occurred of August
20 29, 1980 and turning over to the fourth and fifth pages
21 of that memorandum that's NRC 313, there's a reference
22 to the decision down near the bottom of page four.

23 Does the report here in Mr. Hood's memorandum
24 accurately reflect the decision that was announced at

1 least as of the conclusion of the meeting on the 29th of
2 August?

3 A To my recollection, it does accurately reflect that
4 decision.

5 Q After the meeting, did the NRC continue to press for the
6 additional soils boring data and other exploration
7 activities or not?

8 A The Minutes of the meeting indicate that one development
9 that occurred at the Appeals Meeting was an indication
10 by Consumers that they had additional borings in the
11 areas that we were asking for additional borings; and so
12 those boring logs were presented to the Corps and to
13 myself. And they ^{were} ~~se~~ reviewed and on the basis of the
14 information there was a decision made to revise the
15 original proposed boring plan. And so it's my
16 recollection that that development occurred after this
17 meeting -- August 29th, meeting.

18 Q Let me hand you what has been marked as NRC 291 and
19 maybe it will help refresh your recollection as to the
20 timing on this later development.

21 (Exhibit NRC 291; Letter from
22 R. Tedesco to J.W. Cook dated
23 1-8-81.)

24 BY MR. JENTES:

1 Q This appears to be a letter from Mr. Tedesco of the NRC
2 to Mr. J. W. Cook of January 8th, 1981. Are you
3 familiar with this letter and the attachment?

4 A Yes. I am familiar with it.

5 Q And does this help refresh your recollection with regard
6 to what happened in terms of the position taken by the
7 NRC concerning additional soils borings and testing?

8 A It does refresh my memory. And what I understand it to
9 be is the decision that was made by NRC Management
10 following the appeal meeting of what additional borings
11 and testing had to be performed. And so this is the one
12 that was ultimately reflecting the decision of NRC
13 Management and, to my knowledge, the one that was
14 ultimately accepted by Consumers.

15 Q In that regard did Consumers ultimately decide to go
16 ahead with the borings, at least in the modified format
17 that are reflected in Mr. Tedesco's letter that is NRC
18 291?

19 A To my knowledge, it is the program that Consumers
20 followed. I also recall that there may be modifications
21 that were acceptable to the Staff -- to the Staff that
22 were ultimately proposed by Consumers on this program.

23 Q Okay. Let me hand you what has been marked as NRC 306,
24 which appears to be a memorandum prepared by Mr. Hood on

1 March 13, 1981. Have you ever seen this document
2 before? Well, I guess you're shown as a carbon copy.
3 Did you get a carbon copy of it?

4 A Yes.

5 Q And were you advised by this memorandum that there had
6 been a telephone conversation between Consumers Power
7 and Mr. Hood and others at the NRC in which Mr. Cook had
8 authorized or notified the NRC that he had authorized
9 the various borings and exploration and testing plans to
10 go forward as is indicated in the opening paragraph,
11 numbered one, of this memorandum?

12 A This document is the formal way that I came to know that
13 Consumers had agreed to do the borings; yes.

14 Q And were those borings ultimately done?

15 A Yes.

16 Q And did you and the Corps have an opportunity ultimately
17 to review the borings?

18 A I did not personally. We made arrangements with
19 Consumers to have a representative from the Corps of
20 Engineers at the site while these borings were being
21 made.

22 Q And ultimately did you have -- have an opportunity to
23 review the results of the various analyses of those
24 borings?

1 A Yes.

2 Q Did there come a time when Consumers ultimately decided
3 that it would -- well, let me withdraw that question.

4 Sometime after the borings were authorized to go --
5 to go forward, in the early part of 1981, did Consumers
6 take any action with regard to the caisson proposal for
7 the fix of the auxiliary building?

8 A Do I understand your question to say did they do
9 anything with respect to the caisson design prior to
10 March 1981?

11 Q No. My question was what ultimately happened to the
12 caisson fix?

13 A Consumers changed their design to where instead of
14 caissons they went to a underpinning wall which was
15 under the entire EPAs and control tower.

16 MR. JENTES: Let me go off the record for a
17 moment at this point.

18 VIDEO OPERATOR: Stopping the tapes.

19 (Brief discussion held off the record.)

20 VIDEO OPERATOR: Now recording.

21 BY MR. JENTES:

22 Q Mr. Kane, let me ask you to take a look once again to
23 NRC 301.1. That's the testimony that you and Mr. Hood
24 and Mr. Singh gave back in December of 1981. I referred

1 you to it early on and I'd like to direct your attention
2 over to page eleven of that, only to help refresh your
3 recollection a little bit, perhaps, about some dates.

4 By looking at page eleven and twelve, are you able
5 to state when Consumers decided to drop the caisson fix
6 for the auxiliary building?

7 A From the document that I have it would appear that it
8 was being indicated in a meeting on May 5th, 1981 that
9 the caissons were being dropped and a new remedial
10 method for the EPA was being proposed.

11 Q Prior to May of 1981, had you, and along with the Corps
12 of Engineers, conveyed to Consumers various problems
13 that you saw with the caisson proposal and had you done
14 that through actual reports that were issued on behalf
15 of the Corps of Engineers?

16 A Yes. In the sense that the problems that you might be
17 referring to are design considerations that you would
18 need to face for the caisson proposed scheme. And so
19 the Corps did identify questions, and I'm fairly certain
20 there were meetings where the Corps conveyed to the
21 Applicant concerns about the design as proposed for the
22 caissons.

23 Q Were these concerns that were expressed to Consumers
24 done in the course of this review process that the Corps

1 was going on with, I guess, roughly from the end of 1979
2 and on into 1980, and into the early part of 1981?

3 A Yes. It was part of that process.

4 Q Let me hand you what has been marked as NRC 303 -- and
5 you might want to keep that other testimony handy -- and
6 COE 10.1, and ask you whether you can identify these as
7 two of the written reports that were prepared by the
8 Corps of Engineers setting forth their concerns and
9 additional inquiries concerning the caisson fix
10 proposal.

11 MR. LIBBY: Objection. Misleading and
12 mischaracterization.

13 MR. JENTES: Let me try to cure that
14 objection.

15 BY MR. JENTES:

16 Q Let me address first NRC 303. Can you identify what
17 that document is?

18 (Exhibit COE 10.1; Document from
19 A. Schwencer to J. Cook dated
20 8-4-80.)

21 A It is a document from the NRC, A. Schwencer, to J. W.
22 Cook of Consumers dated August 4th, 1980. And the
23 subject is transmittal of the Corps of Engineers report
24 and the request for additional information on plant

1 rill. What the enclosure is is a copy of a letter that
2 NRC had received from the Corps of Engineers with
3 respect to their review efforts for the Midland Project.
4 This -- these questions were being passed on to the
5 Applicant for response and resolution.

6 BY MR. JENTES:

7 Q Earlier you mentioned that there were meetings between
8 the Corps, and the NRC, and the Applicant, namely,
9 Consumers, to discuss these various concerns. Did you
10 participate in these meetings when the Corps got
11 together with the CP people?

12 A Yes.

13 Q Directing your attention over to the attachment to NRC
14 303, which is this memorandum from the Corps that's
15 dated July 7, 1980. I noticed that if you look down on
16 the first page of the report, that starts in paragraph
17 three, talks about a listing of specific problems in
18 review of Midland Units one and two follows for Category
19 I structures. The issues are unresolved in many
20 instances because of inadequate or missing information.
21 And then there's a listing of items A, B, C, D, et
22 cetera, about various concerns.

23 During the meetings that you attended, were these
24 lack of information or discrepancies or what are

1 described here as inadequate presentation, were those
2 gone over with Consumers Power and its consultants?

3 MR. LIBBY: Objection: Leading.

4 A In the meetings, the Corps would -- would express their
5 findings of their review as of that time. And I know
6 the Corps on several occasions had raised concern with
7 the propping up the EPA with the caissons and had asked
8 questions such as have you looked at what the additional
9 load on the control tower is going to do. And so the
10 Corps had expressed these, but not to the conciseness or
11 the completeness that are in these -- these Exhibits
12 that you have given me. This is the formalization of
13 the Corps' review.

14 Q Okay. You mentioned as one example the problem of the
15 placing, I take it, added burdens on the control tower
16 in connection with the caisson proposal. Could you
17 explain in a little more detail what was involved, or
18 why was this a matter of concern?

19 A The caisson proposed design was putting added support at
20 the extremities of the EPA, because of the plant fill
21 problem that had been shown to exist by the borings
22 under the EPA. Well, it was recognized that when this
23 support was placed at the extremities it was reasonable
24 that additional support would then be transferred to the

1 control tower. There was one boring in the control
2 tower that had shown a void which had been taken in late
3 1978, and the question was developing: If you're
4 putting additional load on the control tower, have you
5 looked at whether that additional load can be safely
6 carried by the control tower?

7 Q I was trying to find quickly -- and I'm not going to be
8 able to do it -- the presentation that had been made to
9 the NRC back in July of 1979. And I showed it to you
10 earlier. Attached to that presentation was a graph that
11 showed the results of various borings in the control
12 area and analyzed various deficiencies one way or
13 another in those borings. By the middle of 1980 had you
14 and the members of the Corps begun to evaluate and look
15 more carefully at some of the borings with regard to the
16 control tower?

17 A Yes.

18 Q And had you, as a result of that analysis, come up with
19 any concerns about the adequacy of the soils under the
20 control tower?

21 MR. LIBBY: Objection: Ambiguous.

22 A Yes. To the extent that I had previously mentioned, in
23 that we were now aware of the borings that were taken in
24 late 1978 that had indicated loose sands, soft clays and

1 the void under the auxiliary -- excuse me, under the
2 control tower. And so in recognition of the foundation
3 information that had been presented by the Applicant, we
4 were now concerned how these were going to be addressed
5 by the remedial fixes that we were attempting to reach
6 agreement on.

7 Q Let me next ask you to turn to COE 10.1, which I handed
8 you a moment ago. I'm wondering if you could identify
9 that document for the record.

10 A The document is dated 16, April, 1981. And it is a
11 document from the Corps of Engineers to George Lear of
12 the NRC. And what it is is a follow-up by the Corps to
13 questions that still exist with respect to the different
14 structures that the Corps is presently reviewing at this
15 time.

16 Q Was this another one of the reports that had been issued
17 by the Corps and that was transmitted to Consumers Power
18 and discussed with it?

19 A Yes.

20 Q If you look over -- let's see if I can find the right
21 page. I believe it's page seven of the report and Bates
22 Number 1428. Does that contain the discussion of some
23 of the problems that the Corps recognized with regard to
24 the auxiliary building, the electrical penetration areas

1 and the feedwater isolation valve pits? I guess that
2 discussion continues then on over through a couple of
3 pages -- and I now realize page nine is apparently
4 missing.

5 Is it missing from your copy as well?

6 A It is. Yes.

7 Q Okay. Well, we'll undertake to get the full set of
8 documents in here before we get this thing finalized.

9 But, in any event, does the materials that begin at
10 page seven, do those contain the more detailed analysis
11 of the Corps regarding the auxiliary building and EPA
12 fix?

13 A It does contain the Corps of Engineers' evaluation of
14 the fixes as they exist at this time and the Corps'
15 questions with respect to those fixes, yes.

16 Q I noticed that there's a reference in the opening line
17 of the Corps' report to Amendment 85 to the operating
18 license request. And in that regard let me hand you
19 what has been marked as CPC 1106.1. Is that the
20 Amendment 85 that's referred to?

21 A I would like to take time to look at this document

22 Q All right. Why don't we go off the record and let you
23 have a chance to look at it.

24 VIDEO OPERATOR: Stopping the tapes. I'm

1 sorry. Let me just go back on a second. This would be
2 a good time to change the tape and we simply need to
3 announce this is the end of tape one for this
4 deposition.

5 (Brief recess taken.)

6 (Exhibit CPC 1106.1; Amendment 85
7 transmitted by letter of J. Cook
8 to D. Eisenhower dated 11-21-80.)

9 MR. JENTES: Okay. Ready to get back on?

10 A Yes.

11 VIDEO OPERATOR: We are now recording. This
12 is the beginning of tape two.

13 BY MR. JENTES:

14 Q While we've been off the record, Mr. Kane, have you had
15 a chance to review CPC 1106.1 and can you now identify
16 that as the Amendment 85 that's referred to in the
17 Corps' report?

18 A Yes. I can indicate that CPC 1106.1 is Amendment 85
19 which is referred to in the Corps' report.

20 Q It's referred to as an Amendment to the Company's
21 application for construction permits and operating
22 licenses. Why was it necessary for the Applicant, CP,
23 to prepare such an Amendment?

24 A The reason we are getting Amendments are the design is

1 changing with respect to -- to previous documents
2 furnished by the Applicant to the NRC. And what the
3 Applicant is attempting to do with these Amendments is
4 update the required documents at NRC with the latest
5 information.

6 Q And then moving to COE 10.1, which you identified
7 earlier as the Corps' report of April 16, 1981, was that
8 the Corps' analysis of this latest Amendment 85?

9 A I don't feel the Corps' letter dated 16th of April would
10 be restricted just to Amendment 85, but it would
11 encompass Amendment 85.

12 Q Now, directing your attention back to the prepared
13 testimony that you, and Mr. Hood, and Mr. Singh gave in
14 December of 1981, that's NRC 301.1. And, in particular,
15 looking over at pages thirteen and fourteen, to save
16 some time, in the set of materials that are contained on
17 those pages under paragraph one: Does that summarize
18 accurately the comments that the Corps had on the
19 caisson proposal that had been first put forward by CP
20 in July of 1979?

21 MR. LIBBY: Excuse me. Can you give me a page
22 number? I'm lost.

23 MR. JENTES: Yes. It's pages thirteen and
24 fourteen.

1 MR. LIBBY: Thank you.

2 A Pages thirteen and fourteen do summarize the Corps'
3 efforts with respect to the auxiliary building designs
4 at the time that this testimony was prepared. It's my
5 recollection that these specific answers have been
6 prepared by the Corps or Engineers for input into this
7 testimony.

8 BY MR. JENTES:

9 Q I'd like to ask you a couple of questions about the
10 comments here. Under Item One, C, there's talk about
11 the ability of the control tower to safely carry the
12 additional load, et cetera. Is that the concern that
13 you talked about a little bit earlier today in your
14 testimony?

15 A Yes, it is.

16 Q In Item B, the prior one, there's discussion about the
17 soil parameters, and a reference to shear strength of
18 fill materials and glacial till. In laymen's terms,
19 what's the problem there?

20 A In the design of the caissons, the caissons get their
21 support ability from bearing on the glacial till
22 materials, and what the Corps is indicating here is that
23 the properties that you would need for proper design of
24 the caissons was not furnished.

1 Q Turning back even further to Item One A, there's a
2 reference to "the design information about caissons was
3 inadequate". And then it discusses certain items that
4 were not provided.

5 Was an explanation given to the NRC as to why this
6 information was not provided that's referred to in One
7 A, and also in One B?

8 A To my knowledge no explanation was given. What the
9 Corps was doing was responding to the information that
10 had been given in identifying the part that was not yet
11 given.

12 Q Now, earlier you testified that on May 15 of '81
13 Consumers decided to come up with a -- another proposed
14 fix. Was there an explanation given to the NRC at that
15 time as to why N -- the Consumers Power people had
16 decided to drop the caisson fix?

17 A I don't think there was a detailed explanation given.
18 There may have been general statements about in the
19 development of the design it was necessary to make this
20 change, but I don't recall any formal explanation being
21 given.

22 Q Was there any indication one way or the other by the
23 Consumers Power people that they had come to agree or to
24 accept some of the concerns that had been stated to them

1 by the Corps and by the NRC?

2 A I do not recall any such statements from Consumers where
3 they had concluded they had come to agree with the
4 Corps' concerns.

5 Q Were you present when Consumers came forward with
6 alternate proposals for dealing with the auxiliary
7 building in May of 1981?

8 A I was involved in these meetings and the process of the
9 revisions; yes.

10 Q Okay. Let me hand you what has been marked as CPC 11
11 and ask you if you can identify this document.

12 Maybe I should back-up first. And, that is, did
13 you ever see this particular document which appears to
14 be a set of Minute notes prepared by Mr. Thiruvengadam
15 concerning meetings on May 5, 6 and 7, 1981? Did you
16 ever have a chance to see those back at the time they
17 were prepared?

18 A I'm not certain whether I saw all this document. I may
19 have, but I do not recall.

20 Q All right. In any event, by looking at that document
21 and also by referring over to the prepared testimony
22 that I asked you to look at on a couple of occasions,
23 pages eleven and twelve, can you describe what your
24 understanding was of the fix that was proposed for the

1 auxiliary building in May or 1981?

2 A The recollection that I would have would come from the
3 indication on page eleven of the NRC testimony that's
4 saying: On May 5th, 1981, in a meeting with the NRC
5 Staff and the Corps, Consumers presented another
6 remedial action plan. That that plan consisted of
7 providing mass concrete support at the extremities of
8 the -- both the EPAs instead of the previously proposed
9 caissons.

10 Q Did you ever have a chance -- and I'm referring to you
11 in terms of the NRC and the Corps -- ever have a chance
12 to look into and evaluate this third of the proposals to
13 fix the auxiliary building soils problems?

14 A To my recollection, we did not; because that plan was
15 changed within a few months.

16 Q And did Consumers ultimately come up with a still fourth
17 plan?

18 A Yes. And that was placing the walls that extended down
19 to the glacial till around the EPA and control tower.

20 Q And if you'll look over to page twelve of the prepared
21 testimony, that indicates that there was a meeting on
22 October 1, 1981 where a fourth proposal was presented.
23 Was the October 1, 1981 the meeting where this fourth
24 proposal was put forward by Consumers?

1 A Yes.

2 Q And were you present at that meeting?

3 A I think I was.

4 Q Okay. I'm going to come back to that meeting in a
5 little bit more detail sometime later here. I'd like
6 to, in effect, stop in the progression of the auxiliary
7 building remedial fixes and turn to a slightly different
8 subject.

9 Earlier I gave you a copy of a document which was
10 NRC 279, which is the Staff Motion that was prepared
11 back in April 1981, along with some affidavits, one of
12 which was by you. Let me get that document back in
13 front of you here if I may.

14 By way of background, what was the occasion for
15 preparation of this document that's NRC 279?

16 A Exhibit 279 is entitled: NRC Staff Motion for Summary
17 Disposition on the Issue of Quality Assurance
18 Implementation Prior to December 6th, 1979.

19 It's my recollection that this document was
20 initiated by NRC attorneys, in recognition at the time
21 that it was developed that what they had heard from the
22 Staff and what they had obtained in depositions of the
23 Utility's witnesses, that there was clearly a breakdown
24 in Q/A prior to December 6th, 1979. And this Summary

1 Disposition was an attempt by NRC's attorney to have
2 everyone reach agreement that this did, in fact, occur,
3 and so reduced the extent of the ASLB Hearing on
4 coverage of this particular concern; the Q/A breakdown.

5 I was asked by NRC attorneys to provide the
6 testimony with respect to -- to what I knew about the
7 improper compaction that was coming to light through --
8 through our reviews and through our depositions. And
9 that -- that is how I became involved in this document.

10 Q And as indicated earlier in your testimony, you
11 ultimately prepared an affidavit and signed that
12 affidavit. And that's the affidavit that's enclosed in
13 here, is that correct?

14 A That is correct.

15 Q Now, there's also a couple of other affidavits that are
16 part of this document; and one of these affidavits is
17 from Mr. Gallagher. And I notice that there's a
18 cross-reference to Mr. Gallagher's affidavit in your own
19 affidavit. And I'm just wondering how you saw the
20 interrelationship between the two affidavits in
21 preparing them?

22 A The interrelationship was coming about because the Q/A
23 breakdown, which was -- which is essentially being
24 evaluated by the Region of which Mr. Gallagher was a

1 member at this time, was now being carried into the work
2 of NRR, which I was a part of. And so it was an attempt
3 of NRC's ELD Office to tie the two -- the field
4 inspection with the design together. And that's what
5 was attempted in this document.

6 I was aware that Mr. Gallagher was preparing
7 testimony. And I think I had met once or twice with the
8 attorney from NRC, recognizing what he was preparing,
9 and we were attempting to coordinate our effort so that
10 we would not both be writing on the same thing. And I
11 was attempting to put into this document those aspects
12 which would normally fall within the review of our
13 Office.

14 Q Let me ask you to turn over to page 14182 of the
15 document that's NRC 279. And there's a reference there
16 to question four and the answer. Do you have that?

17 A Yes.

18 Q There it says: "In response to question 32, Mr.
19 Gallagher stated that quality assurance deficiencies
20 resulted in the plant fill being insufficiently
21 compacted. My affidavit demonstrates that if the
22 original compaction control requirements set forth in
23 the PSAR had been followed, the plant fill settlement
24 problem would not have occurred."

1 Does that accurately set forth the overall purpose
2 of the affidavit which you gave at that time?

3 A Yes. But I think my affidavit also had other
4 intentions, in that we had recently completed
5 depositions of witnesses from Consumers who, upon our
6 questioning, in my estimation, supported our position
7 that we would not have had this problem if we had had
8 proper compaction.

9 Q There's been considerable testimony already in this case
10 with regard to compaction requirements and I don't want
11 to unduly elaborate on that subject during your
12 testimony here today. But I would like to have you
13 express for the record your own views as to why
14 compaction in connection with soils placement is an
15 important thing. I mean, why is it something that you,
16 as a person in the soils and geotechnic area, is
17 concerned about?

18 A When -- when you are looking at determining whether a
19 structure will have a stable foundation, you are looking
20 at the material that's going to be placed there and what
21 are its engineering properties. And you're faced in the
22 design stage, before construction, of coming to some
23 conclusion as to what engineering properties, such as
24 shear strength, such as compressability, these soils --

1 and, in this case, it would be those compacted backfill
2 materials -- would have. And so it's recognized that
3 engineering properties, which are important to a stable
4 foundation, are -- are directly related to the density
5 of the soil. Compaction control is intended to assure
6 that when you place it in the field you will get the
7 proper densities and those densities will -- will assure
8 that the properties that you have used in design, such
9 as compressability and shear strength, are adequate. If
10 in construction you get the required densities, then
11 there is that assurance that you have the required
12 engineering properties.

13 Q How does control over the moisture content of the soils
14 bear on the density and compaction?

15 A There are soils whose density would increase to what is
16 called a maximum dry density and they would be the
17 cohesive soils, such as clays and silts. What the
18 laboratory tests on compaction would show you is that as
19 you increase the moisture content, up to what is called
20 the optimum moisture content, there is an increase in
21 density; and then beyond the optimum moisture content
22 there is a decrease in density.

23 And so that moisture content control becomes
24 important in field control in that what you're

1 attempting to do is to bring the condition of the fill
2 to within the -- an acceptable range of optimum moisture
3 content. And, therefore, you require the moisture
4 content in the field to meet those conditions so that
5 you know you're going to get the density and the soil
6 properties.

7 Q I'd like to ask you to turn within the document that's
8 in front of you over to the portion that deals with Mr.
9 Gallagher's affidavit and, in particular, at pages 14254
10 and 14255.

11 A What were those pages again, please?

12 Q 14254 and 14255.

13 A I have the pages.

14 Q Okay. There there's a question number seventeen that
15 says: "Before discussing what actually occurred at
16 Midland with regard to the implements of the quality
17 assurance program in the soils area, please state the
18 significance of soil compaction and the factors which
19 affect soil compaction." And then on page fourteen
20 there's an answer by Mr. Gallagher.

21 I recognize that this was an affidavit by him, but
22 I'm wondering if you could read down through there and
23 state whether or not you agree with the answer that Mr.
24 Gallagher gave in this affidavit.

1 And if you'd like to take a moment, why don't we go
2 off the record and you can review it.

3 A I will.

4 VIDEO OPERATOR: Okay. Stopping the tapes.

5 (Brier recess taken.)

6 MR. JENTES: Are you ready to go back on the
7 record?

8 A Yes.

9 VIDEO OPERATOR: We are now recording.

10 BY MR. JENTES:

11 Q Having now read through the answer that I directed you
12 to, can you state whether or not you agree with the
13 conclusions expressed by Mr. Gallagher?

14 A I would agree with the conclusions expressed by Mr.
15 Gallagher.

16 Q He quotes and cites to a Mr. Tschebotarioff.
17 T-s-c-h-e-b-o-t-a-r-i-o-f-f. Are you acquainted with
18 the book that's referenced here?

19 A Yes, I am.

20 Q And is that a standard text in the field of foundations
21 and soils work?

22 A I'm not sure the standard is a proper identification.
23 It is a text available to soils and geotechnical
24 engineers which is commonly used; yes.

1 Q Directing back to your own affidavit at page 1483 --
2 14183, excuse me. In question five, the question is:
3 What is the basis for your response to question four.
4 And I asked you about that just a moment ago. And then
5 you go on to talk a little bit about the compaction
6 criteria and the recommended moisture content that had
7 appeared in the PSAR -- or at the PSAR licensing stage.
8 What are you referring to in that regard?

9 A There had been an indication at the PSAR stage, and it
10 had been followed through in the initial documents of
11 the PSAR stage, that compaction of the plant fill at the
12 Midland site would use a specific standard and meet a
13 specified percent compaction and be within a specified
14 moisture content range. That's what I'm referring to.

15 Q Do you recall one way or the other whether those
16 criteria had been initially developed as a result of the
17 Dames & Moore studies that had been undertaken and
18 reported to Bechtel and Consumers Power?

19 MR. LIBBY: Objection: Lack of foundation.

20 A It is my recollection that what was in the PSAR and the
21 early editions of the PSAR came from the recommendations
22 of the Dames & Moore report; yes.

23 BY MR. JENTES:

24 Q Directing your attention -- and I'm sorry to jump back

1 and forth -- but there is an interrelation between your
2 affidavit and that of Mr. Gallagher. And let me ask you
3 to jump forward again once more to Mr. Gallagher's
4 affidavit at 14256, and 14257, and 14258. In answer to
5 question nineteen Mr. Gallagher describes at some length
6 the Dames & Moore recommendations. I'd like to ask you
7 to read down through that answer as it appears at the
8 bottom of fifteen and carrying over to seventeen. And
9 my question is whether or not the criteria as summarized
10 in Mr. Gallagher's affidavit are the compaction criteria
11 that you, yourself, are referring to.

12 And maybe we could go off the record and give you a
13 chance to read it.

14 A Fine.

15 MR. JENTES: Off the record.

16 (Brief recess taken.)

17 MR. JENTES: Back on the record.

18 VIDEO OPERATOR: We are now recording.

19 BY MR. JENTES:

20 Q Having read over the materials that I directed you to in
21 Mr. Gallagher's affidavit, are those the compaction
22 requirements and criteria that you refer to?

23 A Yes.

24 Q Now, let me direct your attention once again to your own

1 affidavit at 14183 and ask you sort of the bottom line,
2 if you will. Up at the top of that page you say, and I
3 quoted it earlier, but let me repeat it. It says: "My
4 affidavit demonstrates that if the original compaction
5 control requirements set forth in the PSAR had been
6 followed, the plant fill ^{settlement} ~~sediment~~ problem would not have
7 occurred."

8 Was that the conclusion that you had reached when
9 you prepared your affidavit in April of 1981?

10 A Yes.

11 Q Is that also your opinion today?

12 A Yes.

13 Q Could you explain why that was your opinion in 1981 and
14 why it continues to be your opinion today?

15 A What had been indicated would be required in the way of
16 compaction of Midland's plant fill was that it would be
17 required to meet ninety-five percent of the maximum ~~X~~
18 dry density as determined by ASTM ¹1557 which is
19 commonly referred to as the modified Proctor Test. That
20 level of density for cohesive soils and the eighty-five
21 percent relative density, which was indicated would be
22 required for -- for the cohesionless soils, the sand, is
23 a high degree of compaction which would produce good
24 densities and good engineering properties. That had

1 been demonstrated by laboratory testing. If those
2 densities had been achieved, we would not have
3 experienced the settlements that we saw occur at the
4 Midland site nor would we, when we took borings, have
5 reflected the low blow counts or loose sands and soft
6 clays. And, therefore, I think a reasonable engineer
7 would make the judgment that what you know because of
8 the test results, using those compaction tests, knowing
9 those densities that you would obtain, you would not
10 have gotten the values of settlement that we got at the
11 Midland Project.

12 Q Over on pages 14184 and 14185 of your affidavit, you
13 address a separate question number six. It says: "Do
14 other engineers share your conclusion that the cause of
15 the plant fill settlement problem resulted from
16 inadequate compaction or construction of an
17 unsatisfactory plant fill." And then you gave an answer
18 and referred to some deposition testimony of a Mr. Arifi
19 of Bechtel, to some testimony by Doctor Peck or a
20 consultant to Bechtel, and to Doctor Hendron who we've
21 referred to earlier.

22 How did you go about selecting the testimony or the
23 people that you used in connection with this answer?

24 A At this stage of review, it was not being stated or it

1 was not recognized to my feeling by the Applicant and
2 its consultant of what the problem really is. And our
3 difficulty in getting responses to our questions were
4 ignoring the fact of what the problem really is. And
5 the one thing I think we accomplished in our deposition
6 was making the Utility and its consultants look at the
7 facts of the settlements that have occurred, and
8 recognize those settlements would not have occurred if
9 it had been properly compacted. And so the questions
10 that we developed in our depositions were intended to
11 make them face that fact. And I think we asked that of
12 the people who we felt should know, of the witnesses that
13 we were deposing. And so those witnesses were selected
14 based on their response.

15 MR. JENTES: All right. It's now a little bit
16 after noon, and we had agreed that we would break for
17 lunch. So why don't we go off the record now and return
18 after lunch.

19 A Okay.

20 VIDEO OPERATOR: We're stopping the tape.

21 (Luncheon recess taken.)

22 VIDEO OPERATOR: We are now recording.

23 MR. JENTES: Back on the record.

24 BY MR. JENTES:

1 Q Mr. Kane, just a moment ago I handed you NRC 63, which
2 has been previously identified in this case as a
3 stipulation that was entered into between the Staff of
4 the Nuclear Regulatory Commission and counsel for
5 Consumers Power Company before the ASLB back in June or
6 1981. Did you have a chance to see that document back
7 at the time it was signed in the Summer of 1981?

8 A I think I saw it after it had been entered into the
9 Hearing record.

10 Q And did you become aware at that time that Consumers had
11 stipulated that there were quality assurance
12 deficiencies related to soil construction activities
13 under and around safety related structures and systems
14 as indicated in the stipulation?

15 A Yes.

16 Q Had you played any part in the discussions with the
17 Consumers Power people that led up to this stipulation?

18 A There were several stipulations. And it's my
19 recollection that I did not play -- ¹pay, excuse me, play
20 a part in this stipulation. I did in others.

21 Q Are the other ones that you're referring to the ones
22 that ultimately were entered into concerning the fact
23 that the NRC had not secured adequate information as of
24 December, 6th, 1979 concerning various items having to

1 do with quality assurance and the assurances of the
2 safety aspects of the remedial soils activities?

3 MR. LIBBY: Objection: Leading.

4 A It is my recollection that there were other stipulations
5 that addressed themselves to the lack of information
6 with respect to remedial measures and they are the ones
7 I'm referring to.

8 BY MR. JENTES:

9 Q Okay. Now, I've carried you up to the Summer of 1981
10 with regard to the activities that you played a part in
11 concerning the ASLE hearings and the affidavit that you
12 gave at that time. And I'd now like to shift back again
13 to the chronology relating to the fix at the auxiliary
14 building. And earlier you had testified that you had,
15 as you best recall, participated in a meeting on October
16 1st, 1981 at which Consumers Power came up with the
17 fourth of the fixes for the auxiliary building. By
18 taking a look at page twelve of the prepared testimony
19 that's part of NRC 301.1, looking there in the middle of
20 that page, does that help refresh your recollection as
21 to your participation in that meeting or not?

22 A Yes.

23 Q And based on reviewing that, what's your best
24 recollection as to whether or not you were present at

1 that time?

2 A To the best of my recollection, I was present when this
3 was introduced to the NRC Staff.

4 Q I'd like to run through a several -- a set of documents
5 that were apparently involved in this fourth fix. And
6 in that connection let me hand you first CPC 2121.

7 Can you identify that as being the technical
8 proposal that was made by Consumers Power Company and
9 that was reviewed at the October 1, 1981 meeting?

10 (Exhibit CPC 2121; Technical proposal
11 made by Consumers Power at 10-1-81
12 meeting.)

13 A I really do not recall. It's quite possible it was, but
14 I do not recall.

15 BY MR. JENTES:

16 Q Let me see if I can help refresh your recollection in
17 that regard by showing you a second document which is
18 NRC 292 and ask you if you can identify that as the
19 summary which Mr. Hood prepared of the meeting that
20 occurred on October 1, 1981 where Consumers Power
21 prepared the fourth of the fixes -- presented the fourth
22 of the fixes on the auxiliary building.

23 And if you want to take a moment to refresh your
24 recollection on this document, please do so.

1 A I would like to take a moment.

2 MR. JENTES: Okay. Why don't we go off the
3 record. And maybe you can look at both that document
4 and the CPC 2121.

5 VIDEO OPERATOR: I'm stopping the tapes.

6 (Exhibit NRC 292; Summary prepared
7 by D. Hood of 10-1-81 meeting.)

8 (Brief recess taken.)

9 VIDEO OPERATOR: We are recording again.

10 BY MR. JENTES:

11 Q Having had a chance to look over NRC 292, can you now
12 identify that as the memorandum that Mr. Hood prepared
13 summarizing the October 1, 1981 meeting with Consumers
14 Power concerning this fourth fix for the Midland Plant?

15 A Yes, it does. And I see by an enclosure¹ to Mr. Hood's
16 summary that I did participate on the meeting of October
17 1st, 1981.

18 Q Further, by looking at the materials, did it also help
19 refresh your recollection that CPC 2121 was the
20 submittal that Consumers had made concerning the fourth
21 fix that was reviewed with the Staff of the NRC on
22 October 1, 1981?

23 A Yes.

24 Q In Mr. Hood's memorandum he states that the underpinning

1 scheme presented what he describes as: "A significant
2 change from the previously proposed remedial measure".

3 Do you or do you not agree with Mr. Hood that the
4 fourth scheme presented a significant change?

5 A I would agree with Mr. Hood's characterization.

6 Q Why, in your view, did the new scheme present a
7 significant change from what had previously been
8 submitted?

9 A It's my recollection that up until this time the
10 underpinning was addressing itself to the EPA and we had --
11 we, the Corps of Engineers, and the Staff had issued
12 questions trying to understand how this proposed scheme
13 would affect the control tower. And it's the October
14 meeting and the September 30th submittal which now
15 provides underpinning for the control tower which is
16 addressing concerns we had expressed previously. So
17 it's significant in that the control tower is now being
18 addressed in much greater detail than it had in the
19 past.

20 Q As you can recall, did the Consumers Power people, or
21 the people that were appearing along with them, explain
22 why it had taken them from sometime in the middle or
23 1980 until the late Fall of 1981 before they had come up
24 with this fourth fix for the auxiliary building

1 problems?

2 A I do not recall or ever having been given an explanation
3 that explained why it took so long or how the process
4 had evolved.

5 Q I'd like to ask you to look at NRC 293, which I handed
6 you while you were off the record to review.

7 (Exhibit NRC 293; Letter from D. Hood
8 to Consumers Power transmitting
9 teleconference of 1-31-81.)

10 BY MR. JENTES:

11 Q Have you had a chance to look that document over?

12 A Yes.

13 Q Can you identify what that document is?

14 A It is a letter from Darl Hood to Consumers Power Company
15 transmitting a record of a teleconference between the
16 Staff and the Applicant which took place on October
17 30th, 1981.

18 Q And had you been a participant in that telephone
19 conversation as is indicated in the summary that it
20 starts at 2231? Bates Number 2231.

21 A I was a participant -- participant. And it is my record
22 of telephone conversation which is an enclosure to Mr.
23 Hood's letter.

24 Q In summary, what was the occasion for this telephone

1 conversation?

2 A To allow the Staff to respond to the September 30th,
3 submittal from Consumers, which transmitted the latest
4 remedial fix for the auxiliary building. And the
5 telecon records the questions that were given to
6 Consumers during the course of that conversation.

7 Q As a response to the questions that were raised on that
8 occasion, namely on this October 30, 1981 telephone
9 call, did Consumers then come back to the NRC with some
10 additional information and submittals concerning this
11 fourth fix?

12 A It would be my recollection that they did.

13 Q Turning your attention to CPC 2122, can you identify
14 that as the written response that Consumers came up with
15 in response to the questions that you and the other NRC
16 people posed on the October 30, 1981 telephone call?

17 (Exhibit CPC 2122; Letter and documents
18 transmitted from J. Cook to H. Denton
19 dated 11-16-81.)

20 A Exhibit 2122 is a response from Consumers, James Cook,
21 to Harold Denton of the NRC, which is providing a
22 response to the NRC for the questions that were raised
23 in the October 31st telecon.

24 BY MR. JENTES:

1 Q And turning your attention next to CPC 2123, is that a
2 document which Consumers sent along to the NRC providing
3 an addendum to the earlier technical report that is the
4 one that's dated September 30, 1981? And that's
5 previously identified as CPC 2121.

6 (Exhibit CPC 2123; Letter of 12-3-81
7 from J. Cook to H. Denton transmitting
8 addendum to 9-30-81 submittal.)

9 A Yes. It is an addendum and appears to give additional
10 information in response to questions that have been
11 raised on the September 30th, 1981 submittal.

12 BY MR. JENTES:

13 Q During this general timeframe, when the fourth fix was
14 being submitted and additional questions were being
15 asked and answered, and I'm talking about the timeframe
16 from October through early December 1981, was the NRC
17 being asked to permit Consumers to go forward with this
18 most recent of the fixes for the auxiliary building
19 areas?

20 A It's my recollection that the start of underpinning was
21 being asked for by Consumers at this time.

22 Q And do you recall whether or not the NRC agreed to let
23 Consumers go forward with any portion of the
24 underpinning proposal?

1 A It's my recollection that the start of the underpinning
2 of the auxiliary building was given in stages to where
3 NRC did give approval on certain early aspects and put
4 qualifications on information that still had to be
5 provided for future stages of construction. So, yes, we
6 did give it in stage.

7 Q Have you heard any reference to a phase one and a phase
8 two and a phase three of the underpinning proposal that
9 was put forward in October of 1981? Have you ever heard
10 references to that?

11 A I have heard references. And I feel certain that it's --
12 it's addressed in our Safety Evaluation Report of
13 October 1982.

14 Q What was your understanding of these phases in broad
15 strokes?

16 A The phases were being divided by what work could proceed
17 to where NRC was satisfied and later stages were being
18 identified as construction operations where we still
19 needed additional information which Consumers was
20 working on at the time and was going to provide to the
21 NRC. And so what it was was NRC's attempt to recognize
22 the construction schedule and to approve those aspects
23 which they had confidence in could proceed, and identify
24 those phases of construction that still needed

1 additional work, which when received and evaluated by
2 the NRC could be started if agreements had been reached.

3 Q What was phase one to involve as you understood it?

4 A I think it had to do with constructing the access shafts
5 to -- to the underpinning. There were going to be
6 shafts connected alongside the EPA and the turbine
7 building to which it would permit them to go under the
8 the feedwater isolation valve pit and the EPAs on both
9 sides. It's my recollection that work did not allow for
10 the removal of any foundation soils under Category I
11 structures.

12 Q Let me ask you to turn to NRC 294, which I handed you a
13 little moment ago, and I'll bring up to this top of your
14 stack.

15 Can you identify what NRC 294 is for the record?

16 (Exhibit NRC 294; Letter from
17 R. Tedesco to J. Cook dated 11-24-81.)

18 A NRC 294 is a letter from Robert Tedesco of NRC to J.
19 Cook of Consumers Power Company. The subject of the
20 letter is Staff concurrence for construction of access
21 shafts and freeze wall in preparation for underpinning
22 the auxiliary building and the feedwater isolation valve
23 pits.

24 BY MR. JENTES:

1 Q Does the concurrence for the construction that's
2 outlined in this letter constitute concurrence in phase
3 one of the underpinning project?

4 A It would be my recollection that it was this document
5 that authorized Consumers to begin the initial stages of
6 underpinning of the auxiliary building.

7 Q Excuse me. Go ahead.

8 A Which would include the access shafts and the
9 installation, but not the turning on of the freeze wall.

10 Q I noticed in the second full paragraph on the front page
11 of Mr. Tedesco's letter that he states: "Our review
12 recognizes that the vertical portion of the access shaft
13 will not undermine any structure". And then he
14 continues that, "Accordingly this activity does not
15 represent an irreversible commitment".

16 Could you explain a little bit more what was the
17 philosophy behind the NRC's concern -- concurrence in
18 going ahead with phase one?

19 A It would be my recollection that at this time NRC felt
20 the proposal for underpinning the auxiliary building had
21 the merit of ultimately being acceptable upon the
22 resolution of the question and details that have been
23 identified by the Corps and by the Staff. So NRC is
24 saying, in recognition of the -- of Consumers' request

1 to begin underpinning construction, you can begin
2 certain aspects of it and it should be recognized on
3 both our parts that what we have authorized you to do
4 will not directly affect Category I structures. And if
5 we cannot resolve those ultimate details, it's not
6 irreversible, that we cannot stop it and restore things
7 to the way they were.

8 Q Incidentally, Mr. Kane, I probably should have asked you
9 this earlier: What was your role at this time in
10 relation to this whole matter of the fourth fix and
11 maybe make our terminology the same. I noticed that
12 this fourth fix is generally referred to as the
13 underpinning project and is that a fair summary of what
14 we could call it?

15 A It would be the underpinning, the auxiliary building;
16 yes.

17 Q Okay. Now, let me get back to my question, and that
18 was: By this time what was your role in that
19 underpinning proposal as far as the NRC was concerned?

20 A It was essentially the same and my relationship with the
21 Corps was that they were doing the major review and when
22 they had completed their work they would have
23 discussions with myself to -- to resolve what questions
24 still needed to be asked, and I would assist them in

1 providing those documents to the NRC, ultimately to
2 Consumers, so that that information could be obtained.

3 The date of this Exhibit 294 is November of 1981.
4 It's my recollection that NRC at this time was
5 recognizing the uniqueness of the construction
6 activities that were going to take place and, that is,
7 going under the auxiliary building to do the
8 underpinning, and was looking for assistance from
9 outside consultants who had more experience than either
10 the NRC or the Corps of Engineers with respect to
11 underpinning existing structures and monitoring the
12 behavior of those structures during the underpinning
13 operations. It should be recognized that what we are
14 about to do now is to remove the foundation soils
15 piecemeal, and that potentially could further affect
16 these existing structures, and so there was a concern
17 that this work be done in a very controlled manner.

18 So NRC in November of 1981, I'm confident, was also
19 making attempts to seek proposals from experienced
20 engineers knowledgeable about underpinning. And I think
21 that work was culminated in December of 1981 with the
22 contract being arranged with Geotechnical Engineers,
23 Incorporated to assist in looking at the underpinning of
24 the auxiliary building and the underpinning of the

1 service water pump structures. So, another consultant
2 was being brought on-board to assist both the Corps and
3 the NRC Staff.

4 Q Who is Geotechnic Engineers?

5 A It's a firm in Winchester, Massachusetts. It has six or
6 seven principal engineers. The one who was involved
7 with Midland is Doctor Steve Poulos.

8 Q How do you spell that, please?

9 A P-o-u-l-o-s.

10 Q And was a consulting arrangement worked out with this
11 firm between them and the NRC?

12 A NRC did enter into a contract with Geotechnical
13 Engineers. I think it was in December of 1981.

14 Q And what was your role in dealing with Geotechnical
15 Engineers?

16 A Essentially the same arrangement that I had with the
17 Corps. And that was to recognize what work had to be
18 done, to make sure our consultants were being given the
19 proper information so that they could make their
20 independent assessment, and then to take their efforts
21 and put it in either a Safety Evaluation Report or some
22 correspondence to the Applicant.

23 Q I'd like to ask you to turn over to page two of NRC 294
24 at the top. Mr. Tedesco's letter goes on and states:

1 That a later phase of your underpinning work, and he's
2 referring to Consumers Power underpinning work, is
3 understood to involve excavation beneath the valve pit
4 structures, et cetera. And then he goes on to state:
5 "However, this later phase requires submittal of further
6 information for Staff review and approval and our above
7 concurrence does not authorize excavation directly
8 beneath any structure."

9 Then he goes on a little bit further and he talks
10 about our review of the effects of the freeze wall
11 involves submittal of additional information. And again
12 he states: "Our above concurrence is limited to
13 installation of the freeze wall and does not include its
14 activation."

15 Was an arrangement worked out between NRC and
16 Consumers Power as to what additional approvals had to
17 be obtained to go forward with the underpinning efforts
18 and how those approvals would be worked out?

19 A There was an understanding between NRC and Consumers
20 that approval was needed for the subsequent phases,
21 which is why we got into this mode of approving work and
22 clearly identifying what work was being approved. So
23 there was an agreement between the NRC and the Utility
24 Company.

1 Q And was that agreement reached in early December of
2 1981?

3 A With respect to the auxiliary building or other aspects?

4 Q Well, in particular, in regard to the auxiliary
5 building. And let me ask you -- maybe you can explain a
6 little bit.

7 If you turn to NRC 301.1, which is the testimony
8 that I've referred you to on several occasions, and you
9 look over near the end of that document -- well, end of
10 the testimony portion at least, not all the attachments.
11 There's a Table A.20 And unfortunately I guess we don't
12 have a Bates Number on it.

13 But do you have that Table?

14 A Yes, I do.

15 Q Could you explain what this Table A.20 is?

16 A I'd like to take a minute to read the preceding pages.

17 MR. JENTES: Okay. Fine. Let's go off the
18 record again.

19 VIDEO OPERATOR: We're stopping the tapes.

20 (Brief recess taken.)

21 VIDEO OPERATOR: Now we're recording.

22 MR. JENTES: Back on the record.

23 BY MR. JENTES:

24 Q Mr. Kane, while we've been off have you had a chance to

1 re-review, not only the Table A- -- or A.20, but also
2 other materials that roughly start at page fourteen and
3 run through the end of the prepared testimony that's
4 part of NRC 301.1?

5 A Yes.

6 Q Based on that, can you explain what Table A.20 is?

7 A Table A.20 is a summary by the Staff of what we
8 understood were the Construction Milestones to be
9 accomplished in underpinning the auxiliary building.
10 The Table is provided as part of our testimony to inform
11 the Board of what work we understand is going to be
12 done, what NRC plans to do with that information, and
13 why it is the basis for us agreeing to allow start of
14 underpinning to begin.

15 Q I notice that the second column over refers to Date
16 Information Available for Staff Review. What did that
17 column mean?

18 A Well, we are identifying Construction Milestones and
19 what we are indicating is that at this time certain
20 milestones still needed information for Staff review.
21 That was the date we anticipated receiving it.

22 Q Turning back a little bit earlier in the testimony: By
23 the time that this testimony was given in December of
24 1981, had the Corps of Engineers conducted at least an

1 initial evaluation of the underpinning proposal, and the
2 addendum, and the various data that had been supplied in
3 response to the questions that had been raised during
4 that telephone conversation that was covered in your
5 memorandum?

6 A Yes. The Corps had reviewed the information that had
7 been submitted with respect to underpinning the
8 auxiliary building.

9 Q And are you able to summarize what the conclusions of
10 the Corps and the NRC were with regard to that
11 underpinning proposal as of December of 1981?

12 A My summary would be that the details that were being
13 given to us with respect to underpinning the auxiliary
14 building appeared to now be focusing on all the aspects
15 which foundation engineers would be concerned with in
16 attempting to resolve those. And so we felt at this
17 time there was a good chance that this underpinning
18 proposal would succeed, and that it was the basis for
19 the NRC allowing for work to begin. It was recognized
20 that there was still information and design work to be
21 done and provided to the NRC before final approval could
22 be given.

23 Q If you turn over to page nineteen of the prepared
24 testimony, there's a question there as to what are the

1 conclusions of the Corps following its engineering
2 evaluation and then there's an answer. I'd like to ask
3 you to read down through that. And does that set out in
4 a little bit more detail what the conclusions of the
5 Corps were based on their evaluation of the underpinning
6 proposal?

7 A It does. And it's my recollection that this response
8 had been prepared by the Corps.

9 Q In the last sentence it refers to the need to a "proper
10 foundation design based on actual soil parameters".
11 What's referred to there?

12 A The Applicant had completed the borings which the Corps
13 had asked for in the area of the auxiliary building,
14 those borings produced samples which were tested in a
15 laboratory. And what the Corps is referring to is that
16 this design of the wall should be using soil parameters
17 from that testing in the design of the underpinning
18 wall. So the Corps was -- was acknowledging where
19 Consumers should be getting the information for the
20 final underpinning wall design.

21 Q There's also a reference in that same sentence to it
22 being essential for there to be a resolution of the
23 outstanding issues identified in Table A.20; and that's
24 the same Table that I've asked you a couple of questions

1 about earlier. Was it or was it not the position of the
2 Staff at this point that the issues that are identified
3 in Table A.20 had to be resolved to the satisfaction of
4 the NRC before the underpinning program could go forward
5 from phase one, to phase two, and phase three, et
6 cetera?

7 A Yes, sir. That was the intent of identifying the Table
8 so that everyone would know, including the Board, how we
9 were proceeding and what had to be completed before the
10 next approval.

11 Q Now, after the arrangements that were worked out in
12 December of 1981 with Consumers for the additional
13 review of the program as it went forward, were there a
14 series of meetings that you attended with Consumers
15 Power to go over and audit the program that they had
16 come up with?

17 A You're talking with respect to the time period after
18 this testimony in December of 1981?

19 Q Yes.

20 A Yes.

21 Q Well, let me back-up.

22 Correct me if I'm wrong, I'm not trying to get too
23 far ahead of myself. But am I correct that as a result
24 of the testimony that was given and the understanding

1 that was reached with the Consumers Power people in
2 December of 1981, that an arrangement was worked out
3 that Consumers would go forward and they would attempt
4 to meet these construction milestones and the submission
5 of the data that's spelled out in Table A.20?

6 A That's --

7 MR. LIBBY: Objection: Leading.

8 A That is correct.

9 BY MR. JENTES:

10 Q And what I'm now searching for, Mr. Kane, is after that
11 arrangement was worked out, were there a series of
12 meetings that you attended where there was actually a
13 review of what data was being generated and supplied to
14 the NRC?

15 A In response to the work that was identified in Table
16 A.20; yes.

17 Q Okay. And in that regard let me hand you a document
18 which has been marked as NRC 295. And I would ask you
19 if you can identify that document, please.

20 (Exhibit NRC 295; Letter from D. Hood
21 to Consumers Power Company dated
22 3-10-82.)

23 A NRC 295 is a letter from NRC by Darl Hood, Project
24 Manager, to Consumers Power Company. And it is a

1 summary of the January 18th and 19th, 1982 audit on
2 plans for excavating beneath the Midland feedwater
3 isolation valve pits and the turbine building, which is
4 needed for the auxiliary building underpinning. The
5 document is dated March 10th, 1982.

6 BY MR. JENTES:

7 Q And did you participate in the meeting that occurred on
8 January -- or meetings, I guess, that occurred January
9 18 and 19, 1982?

10 A It would be my recollection that I did.

11 Q Down in the -- well, at the time did you have a chance
12 to review Mr. Hood's summary of what happened at the
13 meeting on that occasion?

14 A I probably had an opportunity to review it before it was
15 sent out by NRC; yes.

16 Q As best you can recall, does it accurately reflect what
17 occurred on the occasion of those meetings on January
18 18th and 19th, 1982?

19 A I think I would have to continue reading the first
20 several pages to answer that question.

21 Q Okay. Why don't we go off the record for a moment and
22 give you a chance to refresh your recollection about the
23 memorandum.

24 A Okay.

1 VIDEO OPERATOR: I'm stopping the tapes.

2 (Brier recess taken.)

3 MR. JENTES: Back on the record.

4 VIDEO OPERATOR: We are now recording again.

5 BY MR. JENTES:

6 Q Do you believe that Mr. Hood's memorandum, along with
7 the various attachments, reflects what occurred on the
8 occasion of these meetings in January of 1982?

9 A Yes, I do.

10 Q I noticed in the first page in the second paragraph that
11 there's a reference in the second line there to the fact
12 that Consumers informed the Staff of, "a change in its
13 plans". And then down in the last paragraph, about four
14 lines from the bottom, it talks about the presentation
15 revealed "two recent changes".

16 Can you state, Mr. Kane, whether or not it was your
17 observation that there were a number of changes in the
18 underpinning proposal as it progressed into the early
19 part of 1982 and throughout 1982 --

20 MR. LIBBY: Objection.

21 Q -- over what had been submitted back in October or 1981?

22 MR. LIBBY: Objection. The question is
23 leading.

24 A There were changes. And it would be my understanding

1 these changes were developing as the Applicant got into
2 the design of the underpinning in greater detail, which
3 is what the NRC had anticipated would occur. The NRC
4 anticipated that they would be getting into further
5 details and Table A.20 was a means of setting up a way
6 of NRC reviewing those efforts.

7 BY MR. JENTES:

8 Q Turning over to the page that's numbered 4320, it refers
9 to open items as identified by Mr. Rinaldi. Who was Mr.
10 Rinaldi?

11 A Mr. Frank Rinaldi is the Structural Engineering
12 Reviewer. I am the Geotechnical Engineer for the
13 Midland Project, Mr. Rinaldi is the Structural
14 Engineering Reviewer.

15 Q Did you work closely with Mr. Rinaldi in connection with
16 the review of the overall underpinning activities?

17 A Yes.

18 Q It then goes on and it says: "Design issues audited by
19 Mr. J. Kane of the Geotechnical Engineering Staff and
20 the disposition of these issues at the conclusion of the
21 audit are listed by Enclosure 10."

22 This is the first reference to the audit. What was
23 involved in the audit that you conducted?

24 A The audit was a follow-up to the ASLB Hearing. It was a

1 further development in the design process by Consumers
2 to where information that we had identified was being
3 presented to us. And so the audit is attempting to
4 follow-up and resolve as many aspects of the design as
5 we could at this stage.

6 Q Turning over to Enclosure 10, which begins at Bates
7 Number 4390 and continues on, I guess, to 4394. Could
8 you explain a little bit what went into this Table and
9 what it was designed to do?

10 A I initiated this Table before I went to the audit of
11 January 18th and 19th, 1982 in Ann Arbor. The purpose
12 of my developing the Table was to lay out those issues
13 that we had to review at the audit, to identify what we
14 anticipated receiving at the audit. And the last
15 column, which is shown on Enclosure 10, was actually
16 added following or during the audit. It was attempting
17 to show how we had resolved each of these issues that I
18 had identified in the development of the Table.

19 Q In the last column did you also indicate those items
20 that had not been resolved and where you still needed
21 data from Consumers Power?

22 A I did.

23 Q Did you have subsequent meetings to follow-up on the
24 data that you needed after the January 18 and 19, 1982

1 meeting?

2 A It is my recollection we did.

3 Q Let me hand you NRC 297 and ask you if you can identify
4 that document.

5 (Exhibit NRC 297; Letter from D. Hood
6 to Consumers Power Company dated
7 3-12-82.)

8 A The document identified as NRC 297 is to Consumers Power
9 Company and is dated March 12, 1982. It was initiated
10 by Mr. Hood, Project Manager for NRC, and is entitled
11 Summary of February 23rd Through the 26th, 1982 Meeting
12 on Remedial Actions for Structures on Plant Fill.

13 BY MR. JENTES:

14 Q Does this memorandum summarize another one of the
15 meetings with Consumers and Bechtel to go over the
16 progress on the remedial activities?

17 A It does.

18 Q I'd like to ask you to turn over to page six. Down near
19 the bottom there's an item three dealing with quality
20 assurance items and there's a reference to Doctor R.
21 Landsman or Region III. Who was Doctor Landsman?

22 A Doctor Landsman is the Regional Inspector who had taken
23 over the assignment of Gene Gallagner who had moved to
24 Bethesda. And so Doctor Landsman is the one now

1 inspecting the construction at the Midland site.

2 Q Did Doctor Landsman have particular responsibilities for
3 the soils and remedial aspects of the project, as
4 opposed to other aspects of the project, or did he cover
5 all aspects of construction?

6 A I'm certain he did not cover all aspects of
7 construction, because I know there were other NRC
8 Inspectors, like in the electrical area. But I would
9 say Doctor Landsman's work was related to inspection of
10 construction in the civil area, civil engineering area.

11 Q And that included soils --

12 A That would include.

13 Q -- activities?

14 A That is correct.

15 A That would include.

16 Q How did Doctor Landsman interface with your own
17 activities in this area?

18 A I am a member of the Office of NRR, whose primary
19 function is to review license applications, which cover
20 the design, which are presented in PSAR and FSAR
21 documents. We review the adequacy, the design, and work
22 together in resolving what commitments are being made
23 which will be carried out in construction. The Regional
24 Offices, their function is to see to it that

1 construction is being carried out as it was indicated in
2 design and agreed upon with our office.

3 Q Okay. In the paragraph that I directed you to on page
4 six, it indicates that: "Doctor R. Landsman of Region
5 III continues to await receipt of the list of non-Q
6 listed activities for both the auxiliary building and
7 SWPS underpinning which he requested during the meeting
8 of October 1, 1981 and again on January 12, 1982". And
9 it goes on.

10 And then if you turn over to page eleven under the
11 heading: Concluding Remarks of Staff Project Manager.
12 It says: "Near the conclusion of this meeting, the NRC
13 Staff Project Manager -- I take it that's Mr. Hood?

14 A That is correct.

15 Q "Advised Mr. J. Schaub of Consumers Power Company that a
16 surprisingly large amount of information still awaits
17 the March 16-19, 1982 audit and beyond."

18 Was it accurate that a surprisingly large amount of
19 information had not been supplied by Consumers in
20 connection with this audit process?

21 MR. LIBBY: Objection: Lack of foundation.
22 It's also leading.

23 MR. JENTES: Well, let me amend it.

24 BY MR. JENTES:

1 Q Was it or was it not the case from your observation that
2 a surprisingly large amount of information still awaited
3 being supplied to the NRC as of this time as indicated
4 by Mr. Hood?

5 MR. LIBBY: Same objection.

6 A It would be my understanding what Mr. Hood refers to
7 here is that in our December 1981 testimony and Table
8 A.20 we had an understanding that information would be
9 submitted at certain times. I think this to the second
10 meeting we've had with Consumers since then, that time
11 and we're finding out that some of the information which
12 we had felt we would be addressing had not yet been
13 addressed and was being put off to a later date. I
14 think Mr. Hood is reacting to that.

15 BY MR. JENTES:

16 Q As you proceeded into the year of 1982, was it your
17 observation that you continued to have difficulties at
18 the NRC in getting the data that you had expected from
19 Consumers Power?

20 MR. LIBBY: Same objection.

21 MR. JENTES: Let me try to correct, amend my
22 question.

23 BY MR. JENTES:

24 Q What was your observation as you moved into the year of

1 1982 with regard to whether Consumers was supplying the
2 information or not according to the schedule?

3 A To answer the question, and I'm partly focusing on your
4 original question, as having to do with the difficulty
5 of getting that information. I did not feel at this
6 time -- at this time that it was difficult to get the
7 information from Consumers. I felt they were providing
8 us the information at this time. What I felt was a
9 delay and we were not meeting agreed upon dates, was
10 their design efforts in developing the final design were
11 taking this long, and that was the reason for the delay,
12 not because there was any reluctance on their part.

13 Q My question I had -- let me start again.

14 I had not meant to imply that they were willfully
15 or intentionally withholding information in my question.
16 My question was really aimed, initially at least, in
17 finding out simply whether or not there was a delay in
18 obtaining the information from Consumers Power Company,
19 whatever be the causes or reasons.

20 A It's my recollection that there was some surprise among
21 the people who are ^{attending} ~~obtaining~~ these audits that
22 information that we expected to see at this time was not
23 being provided and, therefore, there was a delay. And
24 we were -- at least I was understanding the delay was

1 because these details still were being worked out in the
2 design.

3 Q I may have misunderstood your intent when you answered
4 two or three questions ago, but you seemed to place
5 emphasis in your answer on what was the situation, "at
6 this time." And I'd like to explore that a little bit
7 further.

8 Could you explain whether or not there came a later
9 point in time when you felt one way or another, that
10 there may have been some withholding of information from
11 the NRC on the part of Consumers Power?

12 A Since my involvement in 1979, I felt in the early part
13 of my work that there was not a free submittal of
14 information; in that if the Staff would identify
15 specific information, Consumers would provide that. But
16 that's not the normal way we conduct our reviews, in
17 that we anticipate the Applicant will address the design
18 in completeness and provide us the information which --
19 which reasonable geotechnical engineers would use in
20 their designs. It was my feeling, prior to 1982, that
21 it was not -- the information was not coming freely, but
22 it had to be identified by the Staff.

23 In my estimation that attitude appeared to change
24 probably in mid or late 1981. I think it began with

1 their willingness to do the borings and it -- and it
2 showed itself in recognizing that what the Corps was
3 asking for ⁱⁿ ~~the~~ ^{ing} ~~questioned~~ was information they would
4 normally have to develop to finish their own design.
5 And so the information that was being asked for was
6 information not special to the NRC, it was information
7 they needed to complete their design. And I think that
8 attitude changed and the information was submitted in a
9 much more normal way after 1982.

10 Q After the meeting that occurred on February 23 through
11 26 of 1982, did you continue to have difficulties,
12 notwithstanding this change in attitude, in getting the
13 information that you felt was needed for a full review
14 of the underpinning proposal?

15 A I don't think after -- after the February meeting in
16 1982 that it was anymore difficult than it would be with
17 our normal routine. As a Reviewer, quite often we hope
18 the people that are doing the design would recognize
19 what they have to do to complete a design, and recognize
20 the importance of that information, and recognize that
21 the NRC would be as interested in that information as
22 they were in the development of the design and would
23 provide that information. Not always that information
24 is submitted and, therefore, the NRC in their evaluation

1 must ask for that information so, I think normally that
2 happens with all plants.

3 Q Again, Mr. Kane, without regard to whether or not there
4 was any intent to withhold information or not, did
5 Consumers continue to be late in supplying information
6 after the February 23 through 26, 1982 meetings?

7 MR. LIBBY: I'm going to object because the
8 question is ambiguous. And I believe it's been asked
9 and answered.

10 BY MR. JENTES:

11 Q Well, let me address it this way: Let me hand you
12 what's been marked as NRC 298. And let me ask you first
13 if you can identify what NRC 298 is, please.

14 (Exhibit NRC 298; Letter from J. Cook
15 to R. Tedesco dated 3-22-82.)

16 A NRC 298 is a letter to J. Cook, Consumers Power Company,
17 dated March 22nd, 1982, from Robert Tedesco of the NRC.
18 What it identifies is additional information being
19 requested by the Staff on phase two underpinning of the
20 auxiliary building.

21 BY MR. JENTES:

22 Q And what exactly is Enclosure One?

23 A Enclosure One is a listing of review concerns that had
24 to be resolved prior to initiating the second phase of

1 the underpinning work for the auxiliary building in the
2 geotechnical engineering area.

3 Q And was that Enclosure prepared by you?

4 A The Enclosure itself does not appear to be my work. But
5 I'm confident that it was prepared by Mr. Hood who had
6 gotten input from myself.

7 Q All right. And did this compilation -- or was this
8 compilation prepared following still another one of the
9 audit meetings that you had in March of 1982?

10 A Yes.

11 Q Now, along about this time was there an Order entered by
12 the Atomic Safety and Licensing Board with regard to the
13 soils activities and what could or could not be
14 permitted to go forward on the part of Consumers Power?

15 A It's my recollection the ASLB issued an Order which
16 attempted to clarify which work could be completed at
17 Midland. And I think one of the main reasons for that
18 Order being issued was in the Hearings it had been
19 indicated that certain work had been done on underground
20 piping, which neither the Staff nor the Board was aware
21 of, and the Board was attempting to address itself to
22 that and future work and was indicating to Consumers
23 that further work, earthwork, civil works required the
24 explicit approval of the NRC Staff.

1 Q What is the work on the underground or piping that
2 you're talking about?

3 A It's my recollection that certain pipes underground
4 pipes, Category I piping which carried service water,
5 that piping had been profiled by the Applicant and the
6 results had been provided to the NRC. But it's my
7 understanding Consumers went ahead, dug up sections of
8 that pipe and either replaced it or reinstalled it and
9 in an attempt to take out the effects of settlements
10 that had occurred with respect to that piping. And so
11 it was Consumers' attempt to fix certain length of
12 Category I piping.

13 Q Let me hand you what has been marked as NRC 32 and ask
14 you if you can identify that as the memorandum, an Order
15 of the Atomic Safety and Licensing Board of April 30,
16 1982.

17 A This is the Order which I was referring to which was
18 issued April 30th, 1982 by the ASLB and directed itself
19 to work that had been completed by Consumers and which
20 the Board was now attempting to make sure would have the
21 approval of the Staff for future work.

22 Q In that regard, Mr. Kane, if you look over on page seven
23 of the Order, under heading three, there's a reference
24 to Facts Giving Rise to Interim Requirements. And then

1 if you turn still further over to page thirteen, there's
2 a reference towards the end of that first paragraph to
3 the Board stating: "We are of the view that certain
4 activities outside the scope of Consumers' commitment
5 but within the coverage of the prohibition of the
6 Modification Order should be subject to prior Staff
7 review and approval". And then they go on to state:
8 "The first of these matters which gives us concern is
9 that of underground piping". And then the Order goes in
10 and describes a little bit of the particular underground
11 piping that was involved.

12 Is this the reference to the work on the
13 underground piping that you mentioned in your testimony
14 just a moment ago?

15 A Yes, sir.

16 Q If you look over on page fourteen, the Board goes on to
17 state a second reason for requiring further Staff review
18 and approval. And they state: "The second reason for
19 our requiring further Staff review and approval prior to
20 the start of soils-related construction differs from the
21 first in that it does not stem from a single type or
22 construction activity. Rather, it provides the entire
23 spectrum of soils-related construction activities. As a
24 result the Board questioning, we have some doubt

1 whether, in the absence of Staff review and approval,
2 Consumers would carry out certain remedial soils
3 activities using appropriate Q/A procedures and
4 principles."

5 By this time, from your observation, had the NRC
6 Staff some doubt whether, in the absence of its review
7 and approval, Consumers would carry out certain of the
8 remedial soils activities using appropriate Q/A
9 procedures and principles?

10 MR. LIBBY: Objection: Lack of foundation.

11 A The question, as I understand it, is: Do I know at this
12 time, and this would be April of 1982, whether certain
13 members of the Staff doubted whether Consumers could
14 complete the work as they had indicated would be
15 completed? Is that your question?

16 BY MR. JENTES:

17 Q No. I was directing it specifically to what the Board
18 was expressing here. And I'm not asking you what the
19 Board's views were, that's a matter that has to be dealt
20 with as far as the Order itself is concerned. I'm
21 asking you whether or not the Staff, from your
22 observation, had some doubt whether, in the absence of
23 Staff review and approval, Consumers would carry out
24 various remedial soils activities using appropriate Q/A

1 procedures and principles.

2 MR. LIBBY: Same objection.

3 A The emphasis is on the Q/A procedures, which is a matter
4 of concern of more importance to the Inspecting Office.
5 And so, if there were concerns, it would have been most
6 likely in that office. I do not ever having -- recall a
7 conversation with Inspectors to where they had expressed
8 those sentiments to me.

9 BY MR. JENTES:

10 Q If you'll turn over to page sixteen of the Order, the
11 Board, under part Roman Number Four, talks about certain
12 matters which have been the subject of notifications by
13 various parties to the Board that tend to accentuate
14 what the Board regards as the need for interim
15 conditions. And then they site one example in the next
16 paragraph. It says: "As one example of this type,
17 representing an activity we believe should be covered by
18 the commitment, the Board has been informed by way of a
19 Consumers' Non-Conformance Report that a forty-two inch
20 diameter hole was drilled to a depth of forty feet
21 within the Q fill area, apparently without proper
22 authority; without the development or or adherence to
23 written procedures; without the participation of the
24 on-site Geotechnical Engineer; and without adequate

1 QA/QC surveillance if any".

2 Are you familiar with what is referenced here by
3 the Board?

4 A I don't recognize it for the description that is given
5 here. But of the forty-two inch diameter hole is -- was
6 drilled behind the diesel generator building and the
7 turbine building. I do recall an incident where there
8 was a problem with a boring that was being conducted in
9 that area. So, if that's what is being referred to here
10 by the Board, I'm familiar with that incident, but I
11 don't recognize it by the Board's words.

12 Q All right. I'm going to come a little bit later to an
13 incident involving the deep Q duct bank that was a
14 matter that Doctor Landsman made a complaint on and that
15 you were involved in some communications on. Is the
16 incident that you've just referred to the one involving
17 the deep Q duct bank?

18 A No, sir.

19 Q Okay. Then I should ask you what is the matter that you
20 were -- have some knowledge of that may have involved
21 this forty-two inch hole?

22 A There was an incident with drilling holes behind the
23 diesel generator building, north of the diesel generator
24 building, which I understood got stopped with -- with a

1 conduit that was in the ground. And there was a long
2 period of time where -- where they attempted to
3 penetrate that structure in the ground and it resulted
4 in a large widening of an area because of that drilling
5 operation. I am aware that that happened. And I am
6 aware that the Region, as a follow-up to it, in attempt
7 to understand the extent of it and what needed to be
8 done to rectify it. But it is not connected to the deep
9 Q duct bank and I'm not sure it's connected to the
10 forty-two inch hole here.

11 Q All right. Turning over to pages twenty-one and
12 twenty-two and twenty-three of the Order, that sets
13 forth the actual terms of the Order entered by the ASLB
14 at this time. And I'm not asking you for your legal
15 views on what the Board did or didn't do, but I'm asking
16 you as to what your understanding as the person who was
17 reviewing the remedial soils design programs at this
18 time -- what you understood the Board was requiring of
19 Consumers Power.

20 A When the December 5th Order was issued, it was
21 subsequently appealed by Consumers. As I understand,
22 legally that meant the Order was not in effect.
23 Consumers had given verbal assurance to the NRC that
24 they would comply with the Order, even though they had

1 appealed it. And for -- from the time of 1979 until the
2 issuance of this in April of 1982, NRC and Consumers had
3 an understanding that they would be complying with the
4 Order. The Hearings revealed certain work had been done
5 which the NRC was not aware of. The Board attempted to
6 address itself, to that.

7 And so what I understand of this Order is that,
8 even though the Order is not in effect, the December 6th
9 Order because of the appeal, the Board now is attempting
10 to assure everyone connected with the project that no
11 additional work would proceed unless explicit approval
12 by the Staff was given.

13 Q Are you acquainted with the sys -- I'll get it -- the
14 systematic assessment of license -- Licensee
15 performance, sometimes called as the SALP Reports, that
16 are issued from time to time concerning Consumers'
17 performance on the Midland Project?

18 A It gives me great pleasure to say that I have very
19 little to do with SALP.

20 Q Okay.

21 A I have not had much input.

22 Q Okay.

23 A I don't know whether I've had any input into SALP
24 assessments.

1 Q Okay. That may shorten some of my questions.

2 But let me hand you what has been marked as NRC 13.
3 This is a letter from Mr. Keppler to Mr. Cook of
4 Consumers Power of July 19, 1982, sending along the SALP
5 Report covering the period from July 1, 1980 to June 30,
6 1981. This was sent along on July 19, 1982. Although
7 you'll note that there were some early reviews of the
8 report with Consumers Power, as is indicated in the
9 opening paragraph of Mr. Keppler's letter. Did you see
10 the SALP Report that's referred to here back at the time
11 it issued in middle of 1982?

12 A It is my recollection that I did not see the report.

13 Q Are you generally familiar with the categorization
14 that's given to the Licensee performance, that is the
15 Category I, Category II and Category III type rating
16 system, that's used by the NRC?

17 A I'm familiar with it to the extent that I have used it
18 with other projects, but I do not recall what the
19 breakdowns are. I know it has to do with the level of
20 compliance the Licensee or Applicant is giving to the
21 NRC, but I do not know the specific breakdown.

22 Q Do you know that Category III is the lowest level of
23 performance that the NRC rates?

24 A I think that's true.

1 Q If you turn over to pages 11229 and 11230, the
2 evaluation of Consumers in soils and foundations is
3 given. And the conclusion over on page 11230 is that
4 the Licensee is rated Category III in this area. And
5 then there's a discussion of the Board's recommendations
6 on page 11231.

7 And there's a discussion there of the performance
8 by Consumers in connection with the physical work once
9 the remedial soils activities were resumed. And it
10 states: "When actual physical work was resumed it was
11 found that adequate QA/QC attention was not given to
12 these work activities."

13 Were you aware in the middle of 1982 that Consumers
14 had been rated as Category III and that the SALP Report
15 had concluded that there had not been adequate QA/QC
16 attention for this rating period that lasted up through
17 June 30, 1981?

18 MR. LIBBY: Objection: Mischaracterization.
19 Also lack of foundation.

20 A I was not aware of a specific SALP rating. I may have
21 been aware in conversations with -- with Doctor Landsman
22 that there may be Q/A problem still existing, but I'm
23 not aware of any specific SALP rating.

24 BY MR. JENTES:

1 Q Well, following the ASLB's Order that came out in April
2 30 or 1982, was a decision made by the NRC Staff to let
3 Consumers go forward with additional aspects of the
4 underpinning effort on the auxiliary building and, for
5 that matter, on some other aspects of the remedial soils
6 activities?

7 A Is your question with respect to proceeding after the
8 April 1982 Order, did NRC allow construction to proceed?

9 Q Yes.

10 A Yes, it did.

11 Q And in that connection let me hand you what has been
12 marked as NRC 299.

13 MR. LIBBY: Thank you.

14 Q You can fold up those other things and clear your work
15 area there a little bit.

16 I'll also hand you in connection with the document
17 that I just gave you, another one which is CPC 2125.

18 Can you identify for the record what NRC 299 is?
19 If you need to take a moment to re-review it we can go
20 off the record and give you a chance to take a look at
21 that.

22 A I think I would need to.

23 Q All right, fine. Why don't I ask you to take a look at
24 both that and the CPC 2125 that relates to the same

1 document.

2 A Excuse me. NRC 13, is there questions on this?

3 Q No. I think you can put that to the side.

4 A Okay.

5 VIDEO OPERATOR: We're stopping the tape.

6 MR. LIBBY: Why don't we take a break. We've
7 been going about two hours.

8 MR. JENTES: Yes, fine. Why don't we.

9 VIDEO OPERATOR: Before you go: We are now
10 recording. This is the beginning of tape three.

11 (Brief recess taken.)

12 (Exhibit NRC 299; Letter from D.

13 Eisenhut to J. Cook dated 5-25-82.)

14 BY MR. JENTES:

15 Q Mr. Kane, having now reviewed the document, can you
16 please identify NRC 299?

17 A Yes. Document 299 is a May 25th, 1982 letter from
18 Darrell Eisenhut, Director, Division of Licensing, NRC,
19 to J. W. Cook, Consumers Power Company. And what it is
20 is a letter that updates the soils remedial activities,
21 at this time authorizes the starting of phase two
22 underpinning activities, but also notifies Consumers
23 that NRC wants to withdraw from this piecemeal approval
24 approach that has been going on up till now and get back

1 to the more normal type of review where we would not
2 issue approval for a single structure but for the plant
3 in general.

4 Q Why did the NRC want to withdraw from the piecemeal
5 approach and go to what you described as the more normal
6 approach?

7 A Well, I think it was at this period of time where we
8 were attempting to accommodate the construction schedule
9 of Consumers by going to the ASLB Hearings for the
10 structures where they had the most pressing construction
11 need and it had resulted in several identifications that
12 we would go and address, like, the diesel generator
13 building, but then that would get withdrawn; and that
14 would happen several times. And NRC just felt we no
15 longer wanted to be in that mode, and we didn't want to
16 be giving piecemeal approval any longer, and we wanted
17 to get back to the more normal routine.

18 Q When you said that you'd going to something like the DGB
19 and it would be withdrawn, it would be withdrawn by
20 whom?

21 A It would be indicated at a present -- I shouldn't say
22 present, but at a ASLB Hearing that was going on what
23 the next topic would be and when it would be held. And
24 I think the diesel generator building was identified as

1 being one of those topics. And then when that date
2 approached it was -- it was indicated that we were not
3 ready to go yet on that aspect. And it's my
4 recollection that decision was made by Consumers. And
5 NRC agreed to that and agreed to a change in the next
6 ASLB Hearing topic. And I think that occurred several
7 times.

8 Q Can you identify what CPC 2125 is?

9 (Exhibit CPC 2125; Memo from J. Schaub
10 to D. Miller dated 5-27-82.)

11 A CPC 2125 is a follow-up to the May 25th submittal where
12 it gives a little bit more clarification and lays some
13 additional restraints on what have been approved in the
14 May 25th submittal. 2125 is dated May 27th, 1982 and it
15 is identified as a memo from D. Miller to J. Schaub,
16 both of Consumers Power Company.

17 BY MR. JENTES:

18 Q And it refers to a telephone conversation that
19 apparently you and Mr. Hood had on May 26th, 1982. As
20 best you can recall, does it accurately reflect what you
21 and Mr. Hood told the Consumers Power people on that
22 day?

23 A As best as I can recall it, it does.

24 Q Let me ask you: In light of the concerns that had been

1 expressed in the ASLB Order of April 1982, and whatever
2 information you had received concerning the SALP Report
3 findings, why did the NRC authorize CP to go forward
4 with any aspects of phase two or the underpinning
5 program?

6 MR. LIBBY: Objection: Question calls for
7 speculation.

8 A I think you're referring to the impact of the SALP
9 Report and decision. And I have indicated that I had no
10 knowing input into that decision. And, therefore, when
11 I'm making my comments and recommendations it's
12 independent of that action, and my judgments are being
13 made on the basis of the information that had been
14 provided to me. And so that's where my recommendations
15 are coming from.

16 BY MR. JENTES:

17 Q At this -- putting aside the SALP Report and whatever
18 information you may have received or not about that
19 report, as of this time -- and I'm talking about the
20 late May 1982 period, where the authorization was given
21 to proceed with these portions of phase two -- had you
22 satisfied yourself within the areas of review that you
23 looked at that Consumers ought to be authorized to go
24 forward with these steps?

1 A I had to the extent that I could. But I also recognized
2 that one of the enclosures to the authorization of May
3 25th also laid out some conditions that Consumers still
4 had to meet prior to doing the phase two underpinning
5 work.

6 Q And what are you referring to in that regard?

7 A As I understand this May 25th document, it states on the
8 basis of Staff technical review of documents listed in
9 enclosure one, the Staff concerns -- concerns with your
10 plan to proceed with phase two underpinning activities
11 which involve excavation under the feedwater isolation
12 valve pits and the turbine building, subject to the
13 successful completion of conditions listed in enclosure
14 two. Enclosure two lists conditions that NRC felt
15 needed to be completed before beginning with phase two.
16 I had input into that -- into enclosure two.

17 Q Okay. After the authorization was given to go ahead in
18 May of 1982, did it come to your attention that
19 Consumers had violated the ASLB, or at least that it was
20 believed by the NRC Staff people that Consumers had
21 violated the ASLB requirements, by proceeding with
22 certain work without authorization from the Staff?

23 A Yes, sir. And what I can recall has to do with the deep
24 Q duct bank.

1 Q All right. And in that regard, let me hand you what has
2 been marked as NRC 449.

3 MR. LIBBY: Thanks.

4 BY MR. JENTES:

5 Q I'd like to ask you if you can identify that document
6 for the record, please. I take it it's a document that
7 you have seen before?

8 A I have seen the document before.

9 Q And could you identify it for the record, please?

10 (Exhibit NRC 449; Letter from
11 R. Landsman to W. Shafer dated
12 8-24-82.)

13 A There's a letter or a memorandum from Ross Landsman to
14 Wayne Shafer, both of the NRC, the Regional Office;
15 subject, Violation of ASLB Order of April 30th, 1982.
16 And as an attachment there's a May 10th, 1982 letter
17 from J. Cook to Harold Denton; subject, 722 C-45 (Q)
18 Yard-Work Class 1 Fill Material Areas.

19 BY MR. JENTES:

20 Q The memorandum from Mr. Landsman refers to a series of
21 events and some of them apparently you were involved in
22 and some of them involved more directly to Mr. Landsman.

23 I'm wondering if you could recite what you know
24 about the circumstances or the situation that involved

1 this deep Q duct bank alleged violation of the ASLB
2 Order?

3 A In May of 1982 there was a site visit by the ACRS
4 Committee to understand the status of the Midland
5 Project. I attended that meeting. During the course of
6 that meeting --

7 Q Let me interrupt just so we get the terminology down.
8 What is the ACRS?

9 A I was afraid you were going to ask.

10 I think it's Atomic Committee on Reactor Safety.

11 MR. JENSEN: Advisory Committee.

12 A Advisory.

13 MR. MULLINS: On Reactor Safety.

14 A Okay.

15 BY MR. JENTES:

16 Q Okay. The acronym is not always as important as what
17 the function of the group is. And what, fundamentally,
18 does the ACRS do?

19 A The ACRS is an independent group who provides technical
20 assistance to the Commission by reviewing both the
21 Staff's reports and the Applicant's reports on the
22 adequacy and safety of the nuclear facilities that are
23 requesting licenses. So it's an independent group that
24 assists the Commission.

1 Q All right. Now, you mentioned that the ACRS had gone
2 out to visit the site and that apparently you were along
3 on that occasion then. And then I interrupted you and
4 maybe you could pick up with that recitation of the
5 events.

6 A During the course of that meeting, which was being held
7 for the ACRS, Consumers asked to meet with certain
8 members of the Staff to discuss some of the work that
9 was being performed related to the installation of the
10 freeze -- freeze wall and the underpinning activities.
11 It's my recollection that Doctor Landsman, Darl Hood and
12 myself attended a meeting with representatives of
13 Consumers and Bechtel. During the course of that
14 meeting, we discussed certain things that we had seen
15 during the site visit.

16 And also at that meeting it was introduced to us a
17 plan to excavate beneath certain safety related conduits
18 and piping and to -- and to backfill that material with
19 concrete. There was a concern, which I expressed at
20 that meeting, as to whether this was an acceptable
21 procedure for the concern that -- that the backfilling
22 with concrete would -- would, in fact, put in a hard
23 spot beneath the safety related piping and possibly
24 result in differential settlement because of the

1 difference in the compressability between the concrete
2 and the adjacent fill.

3 And so there was an agreement to our understanding
4 that that work would not proceed until Consumers
5 submitted what they proposed with respect to excavating
6 and backfilling that excavation and gave us their
7 reasons why they felt it was acceptable.

8 The violation of the Board Order came out in that --

9 Q Let me interrupt you. I'm sorry. But so the record is
10 clear: With whom did you have the meeting on this
11 occasion, as far as Consumers is concerned, as far as
12 you can recall?

13 A There were many people from Consumers and Bechtel. I
14 think Mr. Heisenheimer was there. I know Mr. Shaub was
15 there, Mr. Mooney were there. And there were some of
16 their field people. I think Mr. Miller was there. So,
17 I don't know, there must have been ten, fifteen people
18 from Consumers.

19 Q All right. I interrupted you. You were about ready to
20 say that the violation occurred because of a set of
21 circumstances; and perhaps you could complete that,
22 please.

23 A Well, after the May 1982 meeting, it is my understanding
24 that Consumers did go ahead with that work, at least

1 with the excavation, which Mr. Landsman discovered on a
2 later site inspection. And it was -- it was his
3 recollection of ^{not what} ~~what~~ we had agreed on at the May 1982
4 meeting and, therefore, cited Consumers for a violation
5 of the Board's Order. And it was that background that
6 resulted in a Hearing, I think, which was in -- on this
7 issue, I think, was in November of 1983 at the ASLB.

8 Q Okay. I'll get to that in just a moment.

9 Let me ask you to turn over to page two of Mr.
10 Landsman's memorandum. There in the -- I guess it's the
11 fourth paragraph down. It says: "I informed the
12 Licensee during my visit on July 30, 1982 that they were
13 in direct violation of the Board Order and their
14 Construction Permit. To make matters worse, the
15 Licensee during the exit, said that they discussed this
16 with Messrs. Hood and Kane in Ann Arbor earlier that
17 morning and had received 'approval concerning the
18 technical accuracy' for what they were doing."

19 And then a little bit further on in that same
20 paragraph Mr. Landsman states: "Subsequently, Mr. Kane
21 indicated to me that they never even talked to him about
22 this. Mr. Hood indicated that they talked to him about
23 something concerning the deep Q duct bank but he in no
24 way had given approval."

1 Does Mr. Landsman accurately reflect the fact that
2 he talked to you and that you had never even talked to
3 the Consumers Power people about this particular matter
4 that they alleged they had reviewed with you?

5 A Mr. Landsman correctly reflects that I had not talked to
6 Consumers about this particular concern. There was an
7 audit in Ann Arbor, which Mr. Shaub attended, but it is
8 my recollection that we did not discuss this item. I
9 had, similar to other audits, identified a list of
10 things that we were going to discuss at the audit; this
11 was not one of them. It was my understanding that we
12 were still waiting for a submittal from Consumers that
13 was going to provide us with their plans for these deep
14 duct banks. And, therefore, it was my recollection I
15 had no such conversation with Mr. Shaub.

16 Q Okay. In the paragraph before the one that I referred
17 to, Mr. Landsman refers to the fact that he was not sure
18 when the excavation began but I was on site on July 28
19 when I discovered the excavation in progress. And then
20 he states: "The Licensee, when informed of my concern,
21 issued a Stop Work Order on July 29, 1982."

22 Was it your understanding that the Consumers Power
23 people did, in fact, issue a Stop Work Order as a result
24 of this asserted violation of the ASLB Order?

1 A I became aware, to my recollection, of the Stop Work
2 Order long after it occurred. And it may not have been
3 until I first read Mr. Landsman's letter. Mr. Landsman
4 and I did not have a discussion, to my recollection,
5 about Consumers issuing a Stop Work Order.

6 Q Let me show you a document which has been marked as NRC
7 49. It's a letter from Mr. Keppler to Mr. Cook at
8 Consumers Power Company of August 12, 1982. Which
9 confirms that Consumers had stopped work in the remedial
10 soils area in accordance with Stop Work Order PSW 2-24.

11 Have you seen this document before?

12 A I have not, to my recollection.

13 Q Okay. Let me show you another document relating to stop
14 work notifications at the project. I hope I can show it
15 to you here if I can find another copy of it.

16 MR. JENTES: Let's go off the record for a
17 moment. I seem not to have an extra copy of that.

18 VIDEO OPERATOR: I have stopped tapes.

19 (Brief recess taken.)

20 MR. JENTES: Back on the record.

21 VIDEO OPERATOR: We are recording again.

22 BY MR. JENTES:

23 Q I have now found NRC 216. Let me hand it to you. It
24 appears to be a letter from Mr. Keppler to Mr. Cook

1 again this time September 24, 1982. In this particular
2 letter he confirms a telephone discussion regarding
3 certain problems in the remedial soils Q/C
4 requalification program. And then he goes on to state
5 that a result of this discussion, we understand that you
6 have initiated or plan to initiate the following
7 actions. And the first is that all work on remedial
8 soils have been stopped with the exception, et cetera.

9 Have you seen this document before, Mr. Kane?

10 A I may have. I do not recall it, though.

11 Q All right. Whether or not you saw NRC 49 and NRC 216,
12 these two letters relating to Stop Work Orders at the
13 plant, do you have an understanding as to whether or not
14 Stop Work Orders were, in fact, put in place by
15 Consumers Power with regard to remedial soils activities
16 in the Fall of 1982?

17 A I have a vague recollection that there were. But I do
18 not feel that -- that any aspect of my work was involved
19 in that decision, I think it was being done entirely by
20 the Region.

21 Q All right. Did you have any involvement in this
22 question about the Q/C recertification or Q/C
23 requalification activities on remedial soils or was that
24 solely in Mr. Lammiman's area and Mr.

1 Keppler's area?

2 A I'm not quite sure how to answer that, in that I'm not
3 quite sure what is meant by the Q/C recertification of
4 the remedial measures, did you say or --

5 Q Yes. Let me be more precise.

6 Do you have any knowledge one way or another with
7 regard to some problems with regard to Q/C Inspectors
8 who didn't have the proper certification and there were
9 some allegations that there had been some improper
10 issuance of certifications to these people or they had
11 issued improper certifications, et cetera; did you ever
12 have anything to do with that?

13 A I didn't have input into it. I feel that in
14 conversation with Mr. Landsman during the several
15 meetings that we had, that probably came up.

16 Q All right. But you weren't directly involved in any way
17 in that?

18 A No, I was not.

19 Q And do I also take it, from your testimony a few moments
20 ago, that you weren't directly involved in any of the
21 Stop Work Orders that were issued in the Summer or Fall
22 of 1982?

23 A That is correct.

24 Q Okay. You did mention a little bit earlier that there

1 was a follow-up investigation by the ASLB and by the NRC
2 into this issue of a violation of the ASLB Order in
3 connection with the deep Q duct bank boring; am I
4 correct on that?

5 A It's not a boring. It was an excavation.

6 Q Okay. Excavation. All right.

7 Let me hand you what has been marked as NRC 450 --

8 MR. LIBBY: Thank you.

9 Q -- and ask you if you can identify that document,
10 please?

11 (Exhibit NRC 450; Letter from R.

12 DeYoung to J. Selby dated 1-12-84.)

13 A The document NRC 450, is a letter from Richard C.
14 DeYoung, Director, Office of Inspection Enforcement, to
15 John Selby, Consumers Power Company. It's dated January
16 12, 1984. It appears, on a brief look, to indicate the
17 results of NRC's investigation conducted through the
18 period January 3rd through August 8th, 1983.

19 BY MR. JENTES:

20 Q You'll note in the end of the third paragraph that it
21 attaches a "Confirmatory Order". And then there is, in
22 fact, an attachment that begins at Bates 11149, entitled
23 the Confirmatory Order.

24 Have you seen the Confirmatory Order before?

1 A I do not recall having seen it before.

2 Q You mentioned earlier that there had been some Hearings,
3 as you understood it, before the ASLB concerning this
4 subject. Did you participate in those Hearings?

5 A I did.

6 Q Whether or not you saw the Order itself that issued as a
7 result of those Hearings, do you know what the ultimate
8 outcome of the investigation by the NRC was?

9 A I think the ultimate outcome is NRC Exhibit 450, which
10 is Richard DeYoung's letter to Consumers. And it's my
11 understanding that after the investigation was over and
12 it was felt that NRC understood the cause of it, that
13 NRC recommended to Consumers that they perform certain
14 things. And I think that had to do with Management
15 studies.

16 Q If you look over to page five, in part Roman Numeral
17 Five, there's an ordering provision. And there there's
18 an indication that within thirty days of the effective
19 date of the Order the Licensee shall submit to the
20 Region a plan for an independent appraisal of site and
21 corporate Management organizations and functions that
22 would develop recommendations that were necessary for
23 improvements for Management communications, controls,
24 and oversight.

1 Is this the Management Control Program that you
2 were referring to?

3 A Yes.

4 Q Did you have any role at all in the Management appraisal
5 that was ultimately undertaken as a result of this
6 Order?

7 A I'm hesitating because eventually there was an
8 independent design verification program which -- which
9 was initiated which involved several independent
10 consultants from outside of Consumers. And I have been
11 involved in the review of several of their reports. And
12 I'm not quite sure their work is not a part of this
13 Management control program. So I may be, but I'm
14 uncertain.

15 Q Okay. Could you describe what the independent
16 Management review has been that you are acquainted with?

17 A There have been consultants retained by Consumers, ^{one} ~~Stern~~ *
18 and Webster is one, to look at the work that is ongoing
19 and to show that it is being properly constructed and
20 controlled. They are working in conjunction with
21 Consumers own quality organization. From time to time
22 there are documents that are forwarded to me that
23 provide the results of meetings between the independent
24 groups and NRC's Regional Offices. I am not actively

1 involved in that program.

2 Q All right. I've asked you some questions about the
3 initial authorization to proceed with phase two of the
4 underpinning effort and the violation that was alleged
5 by the NRC and ultimately found by the ASLB regarding
6 this deep Q duct bank problem.

7 Did there come a time where, notwithstanding those
8 problems, the NRC Staff again authorized the Consumers
9 Power people to go forward with the underpinning effort
10 at the auxiliary building?

11 MR. LIBBY: Objection: Argumentative.

12 A NRC did authorize continuation of the underpinning
13 efforts at the auxiliary building.

14 BY MR. JENTES:

15 Q And when did that authorization come forward from the
16 NRC?

17 A I don't recall the exact date.

18 Q To help refresh your recollection, let me show you two
19 documents; one is CPC 2127 and the other is NRC 451.
20 I'd like to ask you to take a look at those documents
21 and see if they help refresh your recollection as to
22 when the NRC authorized the Consumers Power people to go
23 forward with the remedial activities at the auxiliary
24 building.

1 Do you want to take a moment again to look at
2 those?

3 A Yes.

4 MR. JENTES: All right, fine. Why don't we go
5 off the record again, please.

6 VIDEO OPERATOR: I'm stopping tape.

7 (Exhibit NRC 451; Letter from R.
8 Warnick to J. Cook dated 12-9-82.)

9 (Exhibit CPC 2127; Letter from J.
10 Cook to J. Keppler dated 12-6-84.)

11 (Brief recess taken.)

12 BY MR. JENTES:

13 Q Having looked over CPC 2127 and NRC 451, are you able to
14 state, Mr. Kane, when the NRC authorized Consumers once
15 again to proceed with the underpinning effort?

16 A The two documents that you have given me, documents CPC
17 2127 and NRC 451: 2127 is a letter from J. Cook to
18 James Keppler, NRC, indicating Consumers' conclusion
19 that they are ready to proceed with additional
20 underpinning work at the auxiliary building and is
21 asking for NRC's authorization. That authorization is
22 coming from the Region, Region III. And the reason for
23 that is at this stage NRC has completed their Safety
24 Evaluation Report in October 1982 and authorization to

1 proceed and construction is now being channeled through
2 Region III.

3 The other document that you have given me, NRC 451,
4 is a letter from R. Warnick, from Region III, to J.
5 Cook, Consumers Power Company, authorizing certain
6 phases of work in the underpinning of the auxiliary
7 building.

8 Q From your last answer, does it mean that by this stage,
9 that is in late 1982, that the authorization for
10 proceeding with the remedial soils activities was
11 essentially coming out of the Regional group rather than
12 out of the NRR here in Washington?

13 A I think at this time, and I'm talking now about December
14 1982, NRR, the office that I work for, was responding to --
15 to a 1979 request to assist the Region in assessing the
16 problem and their proposed fixes at Midland. So NRR was
17 responding to that technical assistance request.

18 It's now at this time felt that we have resolved
19 our differences with respect to the remedial fixes or
20 there may be some remaining aspects. Essentially the
21 NRC has given approval to the fixes and, therefore, our
22 work, NRR's work, is nearing completion. And ultimately
23 there was a letter from NRR notifying the Region that we
24 had completed our work and it was now back under the

1 full responsibility of the Region.

2 Q Now, when you say completed your work, are you talking
3 about completing the design review aspects of the work?

4 A That is correct.

5 Q All right.

6 A I should indicate that we, NRR, are still involved in
7 the sense that when certain aspects came up, which NRR
8 had required as being necessary to complete the work,
9 when those aspects come up the Region would normally
10 contact us and we would respond by attending meetings or
11 going to the site for various phases of the
12 construction.

13 Q In light of your answer, it may be that I don't need to
14 show you a couple of documents relating to a subject
15 that I wanted to explore, because it may be that you
16 have nothing to do with it.

17 There has been an issue raised in the case between
18 Dow and Consumers Power as to whether or not Consumers
19 might have been able to load fuel in advance of the
20 completion of all of the soils remedial activities. Did
21 you ever get into assessing one way or the other whether
22 or not Consumers would be permitted to load fuel before
23 the completion of the underpinning activities?

24 A I did not get into any assessment.

1 Q Earlier you had indicated that you didn't have much to
2 do with the SALP review process, but I would like to ask
3 you a little bit about a subsequent SALP Report. And in
4 that connection let me hand you NRC 40.

5 NRC 40 consists of a covering letter from Mr. Hind
6 of -- that's H-i-n-d -- of the Region III SALP Board, to
7 Mr. Cook of Consumers Power, dated July 21, 1983. And
8 it encloses the SALP Report covering the period July 1,
9 1981 through March 31, 1983.

10 Have you seen this SALP Report?

11 A I do not recall. I don't feel I have used it in any of
12 my review efforts.

13 Q This report, at least, covers the period during which
14 there was considerable review activity by you and the
15 Corps. And I notice, if you look over on page 6173,
16 you'll see under Soils and Foundations it says:
17 "Overall performance in this functional area has
18 continued to indicate a declining trend and remains an
19 area of concern. The decline was due to the continued
20 lack of attention to detail and the continuing inability
21 on the part of the Licensee to implement properly the
22 requirements the Midland Q/A program.

23 Did you have any input into this SALP evaluation?

24 A To my knowledge, no. To my knowledge, it would have

1 been developed through Mr. Hood and Mr. Landsman.

2 Q Let me direct your attention to one other item that's
3 over on page 6184. Under Conclusions it says: "The
4 Licensee is rated Category III in this area. Although
5 this is the same rating as the previous assessment
6 period, the licensee's overall performance in this
7 functional area has continued to decline. NRC findings
8 during this assessment period indicate a continued lack
9 of attention to detail by the Licensee and the
10 continuing inability on the part of the Licensee to
11 implement properly the requirements of the Midland Q/A
12 program. A rating of less than minimally acceptable
13 (not rated) was considered by the Board; however, a
14 Category III rating was assigned because of the
15 stringent controls instituted to govern work in this
16 area area, i. e." -- and then there's a description of
17 several programs. --

18 Were you consulted at all in connection with the
19 categorization here; that is, whether or not it should
20 be Category III or a not rated as less than Category
21 III?

22 MR. LIBBY: Objection: Lack of foundation.
23 I'm also going to objection again to the reading of the
24 document into the record.

1 A To my knowledge I was not consulted with respect to this
2 SALP rating.

3 BY MR. JENTES:

4 Q Okay. I noted in reviewing the documentation that you
5 have had some connection with the Midland Project in the
6 last year and it came up in connection with some borings
7 or correction to borings that were submitted by
8 Consumers concerning the diesel fuel oil storage tanks.
9 Do you remember getting involved in that area?

10 A Yes, sir, I do remember that coming to my attention
11 primarily through a request from our Office of ELD
12 asking for an affidavit that responded to the Board's
13 inquiry of the NRC on how this impacted our Safety
14 Evaluation.

15 Q I hate to get into another acronym, but you just said
16 ELD. What's ELD?

17 A Perhaps I would allow the attorneys to answer that.

18 MR. JENSEN: Executive Legal Director.

19 MR. JENTES: On, okay.

20 BY MR. JENTES:

21 Q And would you explain in a little bit more detail what
22 you were asked to do on that occasion?

23 A It was brought to my attention that four borings in the
24 area of the diesel fuel oil storage tanks were not

1 drilled in the location as previously provided to the
2 NRC, and I was asked to assess the impact of this
3 finding; which I understand developed in the suit
4 between Dow and Consumers Power Company. I responded to
5 the Board by writing an affidavit summarizing how I felt
6 it impacted our previous review.

7 Q Let me hand you in connection with this what has been
8 marked as CPC 2497.

9 (Exhibit CPC 2497; Letter from J.
10 Brunner to ASLB Panel dated 12-6-84.)

11 MR. JENTES: Mr. Libby, once again, I
12 apparently don't have an extra copy of the document, but
13 I have a feeling that you're probably acquainted with
14 the letter.

15 A Thank you.

16 BY MR. JENTES:

17 Q This appears to be a letter from Mr. James Brunner,
18 B-r-u double n-e-r, of the Consumers Power Law
19 Department to members of the ASLB Board Panel. The
20 letter is dated December 10th, 1984. Did you see a copy
21 of the letter from Mr. Brunner?

22 MR. LIBBY: Just so I'm clear: What's the
23 Exhibit number on this?

24 MR. JENTES: CPC 2497.

1 MR. LIBBY: Thank you.

2 A It's my recollection that this was one of the documents
3 that I had reviewed prior to my writing the affidavit.

4 BY MR. JENTES:

5 Q Next let me hand you what has been marked as NRC 452 and
6 ask if you can identify that document for the record,
7 please.

8 (Exhibit NRC 452; Affidavit of J. Kane
9 to ASLB Hearing dated 12-6-84.)

10 A NRC 452 is my affidavit to the ASLB with respect to the
11 recent findings about the misplaced location of borings
12 B-1 through B-4 in the area of the diesel fuel oil
13 storage tanks.

14 BY MR. JENTES:

15 Q I won't ask you to repeat all of the matters that are
16 covered in your affidavit, but let me ask first off:
17 Does the affidavit reflect your best opinion and
18 judgment regarding the importance of the borings and the
19 information that was brought to the NRC's attention in
20 CPC 2497?

21 A Yes.

22 Q In the affidavit that you filed, you address certain
23 technical issues relating to the potential for
24 liquefaction. In laymen's terms, if you will, could you

1 explain what the significance of these borings are to
2 the analysis of the liqueraction?

3 A There was a boring in the diesel fuel oil storage tank
4 area that it indicated a loose zone of sand. Offhand I
5 forget the boring number; it was not one of the B-1
6 through B-4 borings. In the review that the Corps and
7 the NRC conducted the question came up: Because of the
8 loose sands that are indicated by this boring in this
9 area, do we have a problem with liqueraction? That
10 concern was passed on to Consumers Power Company.

11 We received the report from Consumers Power Company
12 that addressed this concern. To my recollection, that
13 report was prepared by Mr. Meisenheimer of Consumers
14 Power Company. And what he did was he used the
15 subsurface information, the boring information that was
16 available to both Consumers and to the Staff, to
17 demonstrate that that was an isolated zone of sand. And
18 he used, as part of his study, borings B-1 through B-4
19 to show that it was isolated, that it was not being
20 reflected by those additional borings.

21 And so that information was being used to show that
22 this one zone, that was indicated to be existent in one
23 of the borings, was not extensive. And so there was an
24 analysis made that showed that even if we make the

1 conservative assumption that under earthquake loading
2 the soil would lose its shear strength, it would
3 liquefy, that the surrounding materials would develop
4 enough resistance not to allow the diesel fuel oil
5 storage tanks to lose their foundation~~d~~ stability. X
6 That was the conclusion of the Consumers' studies, that
7 was accepted by the Staff, and that was reported in our
8 testimony before the ASLB.

9 So that is how we used the borings B-1 through B-4.
10 We used them to be convinced that liquefaction was not a
11 problem in that area. Now we're being told those
12 borings aren't really there. And so that conclusion
13 becomes inconclusive because we no longer have the
14 information which was indicated to be factual for that
15 area.

16 Q When you had been supplied borings B-1 through B-4, back
17 at the time of the liquefaction analysis, had you
18 assumed that those were, in fact, the borings at the
19 diesel fuel oil storage tanks that CP had told you they
20 were?

21 A Yes, we did assume. We had no other reason to believe
22 otherwise.

23 Q And you said that now that situation has changed. What
24 do you understand CP is now saying with regard to these

1 borings B-1 through B-4?

2 A As I understand from the documents that I reviewed in
3 preparing my affidavit, is that Consumers was being told
4 by their consultant at your Hearing, the Dow Hearing,
5 that those borings may not have been taken where --
6 where they had indicated in FSAR documents and,
7 therefore, the logs that they had provided to us were
8 not good information. And it was further indicated that
9 there was a mix-up on Consumers' consultants' part that
10 those borings may have been, in fact, representative of
11 an off-site Midland location and, therefore, not
12 applicable to the Midland Plant. That's my
13 understanding.

14 Q Has Consumers supplied you or the NRC, to your
15 knowledge, with the actual borings that purportedly were
16 taken at the diesel fuel oil storage tanks and that
17 should have been borings B-1 through B-4?

18 MR. LIBBY: Objection: Assumes a fact not in
19 evidence.

20 A They have not. And in my affidavit I indicate that that
21 information, the real borings, should be provided so
22 that we could assess not only liquefaction but any other
23 aspects.

24 So to answer your question: No, we have not been

1 provided that information.

2 Q All right. In page four of your affidavit, in the next
3 to the last paragraph, about a third of the way down the
4 page, it says: "The NRC Staff has extreme difficulty in
5 understanding how the mix-up occurred in presenting
6 erroneous boring information from a location not at the
7 plant site."

8 Does this reference to the NRC Staff refer to the
9 fact that you have extreme difficulty in understanding
10 that?

11 A It certainly reflects my extreme difficulty. And I --
12 and I believe that there would be other members of the
13 NRC Staff that would feel that way also.

14 Q Has anyone from the N -- from Consumers Power explained
15 to you how this mix-up occurred since you filed your
16 affidavit?

17 A I think there has been a submittal attempting to explain
18 it. But if you look at what is really presented there,
19 it does not explain it.

20 MR. JENTES: Let me go off the record for a
21 moment, please.

22 VIDEO OPERATOR: Stopping the tapes.

23 (Brief recess taken.)

24 MR. JENTES: Back on the record.

1 VIDEO OPERATOR: We are now recording.

2 MR. JENTES: I have no no other questions. I
3 thank you very much, Mr. Kane, on behalf of Dow.

4 MR. LIBBY: Okay. Could we go off the record
5 for a second?

6 (Brief discussion held off the record.)

7 VIDEO OPERATOR: We are breaking now for the
8 rest of today. And we will resume 9:00 o'clock tomorrow
9 morning, the 16th of April.

10 MR. LIBBY: Correct.

11 VIDEO OPERATOR: Correct. That ends this
12 tape.

13 - - -

14 (Whereupon the deposition was adjourned; to be
15 continued on Tuesday, April 16, 1985 at 9:00 a.m.)

16 - - -

17 WITNESS SIGNATURE LINE

18

19 -----
JOSEPH DAMIEN KANE

20

21 Subscribed and sworn to before
22 me this ---- day of -----, ----- A.D.

23

24 -----
Notary Public, -----
My Commission Expires:-----

1 STATE OF MICHIGAN)
2) ss.
3 COUNTY OF WAYNE)

4 I, Hollis M. Harriman, Notary Public
5 within and for the County of Wayne, State of Michigan, do hereby
6 certify that the witness whose attached deposition was taken
7 before me in the above-entitled matter was by me duly sworn to
8 tell the truth, the whole truth, and nothing but the truth in
9 the cause aforesaid; that the testimony contained in the said
10 deposition then given by said witness was by me recorded
11 stenographically in the presence of said witness, and
12 afterwards transcribed under my personal supervision.
13 The attached is a true and accurate transcript of the
14 proceedings as reflected in my stenographic notes taken.

15 I further certify that I am not
16 connected by blood or marriage with any of the parties or their
17 attorneys, and that I am not an employee of either of them,
18 nor financially interested in the action.

19 IN WITNESS WHEREOF, I have hereunto
20 set my hand at Detroit, Michigan, County of Wayne, State
21 of Michigan, this 13th day of May, 1985.

22 Hollis M. Harriman
23 HOLLIS M. HARRIMAN, CP, RPR, CSR-2090
24 County of Wayne, State of Michigan
My Commission Expires: 3-19-86