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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

CONSUMERS POWER COMPANY	Docket Nos.:	50-329 OM
		50-330 OM
(Midland Units 1 and 2)		50-329 OL
		50-330 OL

DEPOSITION OF JOSEPH D. KANE (Continued)

Bethesda, Maryland
Friday, 27 March 1981

The deposition of JOSEPH D. KANE, resumed pursuant to adjournment at 9:32 a.m., Room 9609 of the Maryland National Bank Building, before BARBARA L. WHITLOCK, a Notary Public in and for the District of Columbia, when were present on behalf of the respective parties.

RONALD ZAMARIN, ESQ., and ALAN S. FARNELL, ESQ., Isham, Lincoln & Beale, First National Bank Plaza, Chicago, Illinois; on behalf of the Consumers Power Company.

WILLIAM PATON, ESQ., Office of the Legal Director, United States Nuclear Regulatory Commission, Washington, D. C.; on behalf of the Nuclear Regulatory Staff.

ALSO PRESENT:

MR. AFIFI
MR. KEELEY

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PROCEEDINGS

Whereupon,

JOSEPH D. KANE

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

MR. ZAMARIN: This is the continuation of the deposition of Joseph Kane, continued from yesterday.

CROSS-EXAMINATION

BY MR. ZAMARIN:

Q You understand that you are still under oath?

A I do.

Q I have what has been marked Exhibit 23, as of today's date. I would like to ask you if this four-paged document bearing several dates, are the pages in your handwriting?

A They are my handwritten notes.

Q Can you tell me on the first page and second page where it says one of two and two of two, dated 3/24/81, can you tell what those two pages represent or what they are?

(Handing document to witness.)

THE WITNESS: They are a record of a conference call with consumers on the morning of the 24th of March.

These are issues which were discussed with the individuals which have been indicated at the top of the paper.

BY MR. ZAMARIN:

Q What was the subject of that conference call?

A The plans of consumers in the exploration program that was to begin, I think, on the 25th of March.

Q Exploration program is what we've been referring to as the Boring Program?

A That is correct.

Q Would you also identify the third and fourth pages of Exhibit 23? The third page is dated 3/20/81, marked one of one; and the fourth page is dated 3/23/81, marked one of one.

A The single paper dated 3/20/81 was a prior conference call with Consumers, with individuals in the call noted above, on the same subject, the exploration program. This was a call prior to the call of March 24th. It was the means where the call on March 24th was set up.

The last sheet is dated the 23rd of March, and is entitled "Discussion Topics for Telecon on Monday." And what it was, my notes so that I could discuss these items with Consumers on the call of the 24th.

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Q Does Exhibit 23, then, represent your recordation of what the exploration program by Consumers is intended to be?

A Yes.

Q Are there any portions of the program or any approach taken by the exploration program with which you do not agree?

A There is one additional document that you have, which records a conversation between myself, Hari Singh, and William Otto, which discusses the problem with not doing SPT borings of this program. It also states the conclusion with regard to our concern for not doing the SPTs on that sheet.

The conclusion is it is recognized that the program that you are undertaking in areas will be more than what we have requested, and will go further than what we have requested. The one area where no SPTs are being taken, it is not quite clear whether the SPTs would have given us a measure of in situ properties better than under undisturbed; and there I am referring to the problem we have of taking undisturbed samples in cohesionless materials and the advantage of the SPT in that regard is it is a measure of the penetration resistance which can give us known information on the

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properties of cohesionless materials which we may lose in disturbing that type of sample.

Q Other than those items which we discussed yesterday, any other problems with the Boring Program?

A Based on my understanding, which I have recorded there, I have no other problems. I have asked to have a better record than that telephone conversation for a copy of your contract.

Q When you talked about areas of concern, using the undisturbs rather than the SPTs, were you talking about particular areas of the plant or simply areas where there may be cohesionless soil?

A Strictly with regards to areas where there is cohesionless soils.

Q There was no particular area of the plant site that you had in mind?

A That is correct.

(Consumers Exhibit 23 identified.)

MR. ZAMARIN: I have what is marked Exhibit 24, as of today's date.

(Consumers Exhibit 24 identified.)

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BY MR. ZAMARIN:

Q Can you tell me what that is?

(Handing document to witness.)

THE WITNESS: The document you have indicated as Exhibit 24 is actually two parts. One part is a handwritten summary by Tony Cappucci on a January 20, 1981 meeting with Consumers with regard to the settlement of category I underground piping. I was provided a copy of Tony Cappucci's notes and I responded by writing the first page of Exhibit 24, which is my handwritten notes in response to Mr. Cappucci's summary of that meeting.

BY MR. ZAMARIN:

Q With regard to the borings that are being or are to be taken in the dike, pursuant to the exploration program that we have been talking about, in the event that those borings show no problem with dike stability, will that satisfy the concerns of the NRC with regard to the dike?

A I can only answer for myself. I cannot answer for the entire NRC. If the borings show the fill has been placed properly and has soil properties equal to or better than what was used in the design, as far as I am concerned it will resolve my concerns of the past with the dike.

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Q As far as you know, would that also resolve any concerns or satisfy any concerns that the corps had with the dike?

A I would say the same thing would be true.

Q Do you know of anyone else within the NRC who would have any different opinion?

A The borings presently are entirely around the ultimate heat sink. Whether in consideration of environmental needs other issues were raised with the other portion of the dike, I cannot address.

Q So far as you know, within the context of the issues in this matter, there is no one else who would have any contrary opinion to yours with regard to the dike and what the borings should show; is that right?

A As far as I know at this time. I am not hedging.

Q I understand.

A What I am attempting to do is there is an issue of dam safety, which the NRC is involved with. Whether under the requirements of federal dam guidelines or dam safety it becomes an issue in the future, I don't know.

Q I have here a draft, a letter marked "draft." It indicates J. Kane, received, 3/24/81 at 4:40 p.m., on the

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letterhead of the Department of the Army, and once again with no indication of whose Army. And on the second page is typed the name P. McCallister, Chief of the Engineering Division.

The last paragraph of this letter, it states: "It is our understanding that the .8/10 Kips has been obtained by deducting stage 5 load on 16 January, 1980 (2.2 Kips) from stage 5 load on 31 December, 1981 (3.0 Kips). Table 4-1a. However, from the heading of 4-1a it is clear that this table pertains to building load only, therefore loads shown at various stages must be the dead load of the building load only. The applicant should clarify this discrepancy."

Can you look at that and explain to me just what the problem there is that McCallister is attempting to convey?

(Handing document to witness.)

THE WITNESS: I would like to indicate that the Army is your army and my army, the U.S. Army.

BY MR. ZAMARIN:

Q All right.

A Mr. McCallister has not signed this. This is also a draft, so this is directly from Hari Singh. What he is attempting to convey is that there is still some confusion

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in his mind about the load that was supplied prior to the surcharge. He is still having some confusion with table 4-1a.

Q And this letter that I have referred to, this draft, was a review of Consumers Power Company's response to interrogatories 1, 2, and 3 of the NRC; is that right?

A That is correct. As far as I know, there are two 1, 2, and 3 NRC interrogatories, I think. Structural Engineering Branch, when they sent our theirs, was also labeled 1, 2, and 3. This was the first set of interrogatories.

MR. ZAMARIN: I would like a short recess, please.

(Recess.)

MR. ZAMARIN: Back on the record.

BY MR. ZAMARIN:

Q Have you done some kind of an analysis of building settlement markers for — within the full surcharge area of the diesel generator building?

A Yes.

Q What was the purpose of that?

A To summarize the voluminous settlement data to

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where it would have meaning to me.

Q Has it been summarized to a point where it has meaning to you?

A Yes.

Q What is the meaning? Is that too general a question?

A I think I can answer what you are asking. I had problems in reviewing the data, with trying to understand the different instruments at different elevations at different locations, and so I attempted to summarize those and see if foundation zones settle more than others. Also I was puzzled by the amount of rebound that was indicated in some of the devices. I was trying to understand what would have caused that.

I think my summary has answered those questions.

Q In arriving at those answers, are you satisfied with the surcharge program as having consolidated the soil beneath the diesel generator building to a point of secondary consolidation?

A Not entirely. There are rebound measurements in some instruments which are not realistic, in my opinion. I think it is because of the way the settlement was

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conducted during the period when the full surcharge was imposed, that period. And because of that, it raises questions about the accuracy of your survey data.

What it does is it reinforces my understanding that doing the additional borings and laboratory testing will help resolve any questions I do have.

Q With the resolution of some questions at which you arrived as a result of your settlement marker survey, were you able to or did you, in fact, resolve some questions that indicated that the surcharge program had not achieved secondary consolidation in the soil beneath the diesel generator building?

A I was not able to conclude that it had not. One thing looking closely at the data has pointed out that the only settlement markers that we have been given data for continuously was the DG-series, which went up to, I think, 8/80, 9/80, whereas all of the other instruments, the anchors settlement plates, extended only up to the time of surcharge rebuttal.

I think I have indicated in my review of amendment 85, that we are asking for that data to be — we are particularly interested to look at the settlement resulting

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from the dewatering operations. We are particularly interested in looking at the settlement that occurred since you have loaded the pedestals with the diesel generators.

There is also one other item which is not reflected in that. In Dr. Gould's deposition we were handed a document that showed settlements significantly larger than any of the data that has been recorded there. They are indicated to be PD, which I understand are pedestal markers, and the magnitude of those settlements are a lot larger than anything I have seen. I am talking about 17 inches, 20 inches.

I asked Dr. Gould what do these measurements reflect and what — there is a time scale on the drawing, but it does not give the year. And I was trying to understand what do those records show?

Q Did he tell you what they show?

A He did not know. He said it was information sent to him, but he did not reveal that information. I suggest this would be a one item I will provide from Dr. Gould's — or you have already provided it to me — the graphs of that settlement which we could discuss at the meeting on Amendment 85.

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MR. ZAMARIN: Off the record.

(Discussion off the record.)

MR. ZAMARIN: Back on the record.

BY MR. ZAMARIN:

Q I have here what is marked Consumers Exhibit 25 for identification.

(Consumers Exhibit No. 25 identified.)

Can you tell me what this sheet is?

(Handing document to witness.)

(Pause.)

A It is a record of a telephone conversation on the 25th of March between William Otto, Hari Singh and myself on proposed Boring Program at Midland.

Q I have a letter dated January 16, 1981, from the Department of the Army, and on the left it does say United States of America, Waterways Experiment Station, directed to the District Engineer for the Detroit District. It appears to be over the signature of Paul F. Hadala, H-a-d-a-l-a.

Have you read this letter.

(Handing document to witness.)

A Yes, I have read that letter.

Q Do you agree with all of the statements made by Paul Hadala in this 16 January 1981 letter?

A I have not reviewed them in detail. I have

confidence in Paul Hadala's review.

Q Confidence in Paul Hadala aside, do you have any independent verification for any of the conclusions reached by Mr. Hadala in this letter?

A By that I understand you to mean have I made an independent check of the things that he has discussed there?

Q Yes.

A I would say no.

Q Is anyone else going to do an independent review of Mr. Hadala's work here?

A It is my understanding Mr. Hadala is doing this work for the Detroit District. That is a copy that Mr. Hadala has sent me at the same time he sent to the Corps. The Corps has reviewed that and has incorporated it into draft that you have been provided a copy of.

Q You don't have any reason to disagree with anything in this letter, do you?

A No, I do not.

Q And in fact you tend to agree with it because of your confidence in the ability of Dr. Hadala?

A That is correct?

MR. ZAMARIN: The January 15, 1991, letter that we

are discussing is marked Consumers Exhibit 26.

(Consumers Exhibit No. 26 identified.)

BY MR. ZAMARIN:

Q Anything about the cracks in the borated water storage tank foundation ring that I didn't ask you yesterday that you think I ought to know about?

A No.

Q Have you reviewed any of the answers to NRC interrogatories that have been filed by Consumers Power Company?

A Would you repeat the question, please.

Q Have you reviewed any of the answers to NRC interrogatories that have been filed by Consumers Power Company?

A Yes.

Q Which ones?

A The three that were addressed to the initial set of interrogatories. I have looked at the responses to the interrogatories by the Structural Engineering Branch.

Q Have you reached any conclusions or arrived at any impressions as a result of those reviews?

A With regard to the first set of interrogatories.

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the reason the Corps of Engineers responded in their letter, which I think is a teletype, 324, was because of the concern I had in response to Interrogatory No. 3, and I agree with what is being asked for by the Corps of Engineers.

Q That is the thing we talked about just a few minutes ago?

A That is correct. With regard to the second set of interrogatories, I think I indicated yesterday there were several interrogatories which I felt were not responsive.

Q Do you recall which ones they were, what the subject matter of those interrogatories is?

A I would have to be — to be specific, I would have to look at the interrogatories, but if I remember correctly there were responses that were saying we did this analysis and we will provide it to you at the time of the audit review, and it seemed to me that if the work had already been done then it should have been submitted at the time of your response to the interrogatory.

Q That is the basis for your dissatisfaction with the interrogatory answers?

A I would have to review the responses to be able to answer that.

MR. ZAMARIN: Off the record.

(Discussion off the record.)

Back on the record.

BY MR. ZAMARIN:

Q Have you done any review of the underground piping matter with regard to the Midland soil settlement?

A Other than review of the Corps of Engineers' efforts, no.

Q As a result of whatever review you have done, what conclusion, if any, have you drawn with regard to the underground piping?

A The conclusions that I have drawn are a result of your analysis where it has been indicated that some of the pipes are overstressed at this stage because of the deflections that have been already measured.

Q Is that the extent of your conclusion or impression, feeling about the underground piping?

A I have had discussions with Tony Cappucci about your position of profiling some lines and not others, and you have my position with regard to that in something I have given you, and that is the single copy before you, Tony Cappucci's notes.

Q In order to save me the trouble of digging for that, can you tell me what that says?

A It says that you want to indicate to us that it is not necessary to profile other pipe and conduits. Then you should demonstrate by this sub-surface exploration information you had that they are indeed similar.

Q Do you have an opinion with regard to the proposed remedial fix for the auxiliary building?

A Could you be more specific?

Q No.

A Would you repeat the question?

Q Sure. Do you have an opinion with regard to the proposed remedial fix for the auxiliary building, as to whether it is adequate?

A My opinion is there are still some outstanding issues with regard to it. They are reflected by the Corps' draft and by my notes on reponse to, I think it is, Question 42.

Q Aside from the matters that are contained in the draft report, the Corps report and your notes, then there would be no concerns that you have with regard to the adequacy of the auxiliary building remedial fix insofar as

it comes within your review responsibility; is that right?

A I understand that question to mean everything that I have reservation on is indicated in that draft, and I would have to say no.

Q Then you know what I have to say. What are the others?

A You have summarized your technical specification for doing that work in response to one of your questions. We have obtained, through deposition, a copy of the technical specs for doing that underpinning work. In Dr. Gould's deposition there were questions that we had asked, which he has referred to being in the tech spec.

I know one item is monitoring, and I think there were several others. And so not everything that you have on either the Corps drafts or my notes would encompass that. What I am attempting to say is I would want to review the tech spec to see if it answers all of the questions that I have raised with Dr. Gould in the past. Excuse me. It is not Dr. Gould; it is Mr. Gould.

Q Can you tell me what those questions are to the extent that they are not contained in your review or the draft Corps review of Revision 10?

A I have concerns, once this work begins, what monitoring of the adjacent structures and the effect of this work will have on both the excavation of the drift and the jacking of the caissons, the effect on the foundation of the turbine building.

Q Is your concern for the excavation of drift with regard to a lateral support or support of adjacent structures?

A Yes.

Q Would that be the same concern with regard to the effect on the foundation of the turbine building?

A Loss of lateral support would affect the foundation of the turbine building.

Q That is what your concern is?

A That is correct.

Q What is your concern with regard to the jacking of the caissons?

A Whether the jacking process would cause movement in the structure that you are jacking against and what monitoring you plan for where those operations are completed.

Q Anything else?

A Not that I can think of.

MR. ZAMARIN: Off the record.

(Discussion off the record.)

BY MR. ZAMARIN:

Q Do you have any problem or concern with the concept of the now proposed remedial fix for the service water structure?

A We have not been given any details on the concept of the service water structure.

Q Do you have some idea what the concept is?

A To extend the wall and put a footing on the glacial till.

Q Do you have any problem with that concept as a proposed fix for the service water pumphouse structure?

A I do not.

(Pause.)

Q I note in the Corps draft report, Revision 10, which has been marked Exhibit 22 as of yesterday's date, Harry Singh states some concern with the effects of permanent strains in the reinforcing bars of the duct banks. Do you consider this to be a significant problem?

(Handing document to witness.)

A I don't know. I don't consider that the area of review of geotechnical engineeering, and Mr. Singh has indicated that this is something that should be followed up by the appropriate section of NRC.

Q Mechanical or structural?

A Structural.

Q You don't have any impression as you sit here now?

A No.

(Pause.)

Q I note that on page 12 of this draft Corps report, Exhibit 22, with regard to Question 46 and 45-1-F, the last complete paragraph of that page, that Mr. Singh states, "We concur." Were you referring to the Corps of Engineers?

A Yes.

Q "We concur with the remaining portions of the Applicant response to Question 45-1-F. If the appropriate values of shear strength parameters are used, the analyses performed by him would assure the seismic safety of the foundations of the two Category I reinforced concrete return pipes."

Do you agree with that statement if the shear strength parameters used are correct, that the analysis performed by

Consumers Power Company would assure the seismic safety of the foundations of the reinforced concrete return pipes?

A Yes. What I understand from that is to say that the stability analysis that you have provided us, if the shear strength from the testing that you are now going to do are equal or exceeded by those results, equal or exceeded the values that you have used in your design analysis, then we would agree that you have demonstrated stability of those conduits.

Q On page 13 of Exhibit 22, with regard to Question 47, which cite dewatering, Mr. Singh states, he is referring to the full-scale recharge test that will be done maybe someday, that if the test indicates more than 90 days recharge time to reach elevation 610, the dewatering system will be acceptable. In your opinion, is there some time period less than 90 days that would also be acceptable?

A It is my understanding that 90 days are coming about because that is your estimate of the time. I don't think there is anything magic about the 90 days. There is a time limit which I think would become critical. I am not prepared --

Q Time within which to effect the cold shutdown of

the reactor?

A Yes.

Q As long as it was greater than the time in which a cold shutdown of the reactor could be affected it would be sufficient?

A Or whatever measures were necessary in addition to shutting the plant down.

Q Necessary to do what? Shut the plant down. In other words, you are talking about if they were going to go out and run some tests or try to put some backup wells in service first you would add that on to the time, if you were going to do that before you go into shutdown?

A I am not clear in my own mind. Shutting the plant down is one operation, but maintaining it in shutdown position is another. If there is something that I cannot think of now which is being affected by the dewatering that has to remain operable for a long period of time other than just the period to shut it down, then that may be affected.

MR. ZAMARIN: Off the record.

(Discussion off the record.)

BY MR. ZAMARIN:

Q On the last page of Exhibit 22, paragraph number 5, it says "If you have any questions regarding our review

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comments, please contact Mr. Harry Singh."

If I have any questions should I do that?

A The letter is directed to the NRC and not to Consumers.

Q With regard to any of the proposed remedial fixes or any of the activities of Consumers Power Company or their contractors or consultants that relate to the soils issues, do you have any disagreements or reservations or criticisms that you have not described to us during the course of your deposition?

MR. PATON: I will have to put my objection to that question on the record as calling for an immediate review of information that Mr. Kane may or may not have picked up over many, many months. If he wants to attempt to answer that, it is all right with me, but the question is obviously objectionable.

BY MR. ZAMARIN:

Q Can you think of anything else?

MR. PATON: Do you understand the question, Mr. Kane?

THE WITNESS: Yes.

Can we go off the record.

(Discussion off the record.)

THE WITNESS: Everything that I presently have knowledge of I think you have been given a copy of in my papers.

MR. ZAMARIN: I don't have anything further. Signature is reserved.

(Whereupon, at 10:55 a.m. the taking of the deposition was adjourned.)

JOSEPH D. KANE