

ORIGINAL
UNITED STATES
NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

DOCKET NO: STN 50-498-OL
STN 50-499-OL

EVIDENTIARY HEARING

HOUSTON LIGHTING AND POWER COMPANY,
et al.
(South Texas Project, Units 1 and 2)

LOCATION: HOUSTON, TEXAS

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2 UNITED STATES OF AMERICA
3 NUCLEAR REGULATORY COMMISSION
4 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

5 -----X

6 In the Matter of: : DOCKET NO.
7 HOUSTON LIGHTING AND POWER : STN-50-498-OL
8 COMPANY, ET AL., : STN-50-499-OL
9 (South Texas Project Units 1 & 2 :
10 -----X

11 University of Houston
12 Krost Hall Auditorium
13 Houston, Texas
14
15

16 Tuesday, 16 July 1985
17

18 The hearing in the above-entitled matter was
19 convened, pursuant to adjournment, at 9:00 a.m.,

20 BEFORE:

21 JUDGE CHARLES BECHHOEFER, Chairman,
22 Atomic Safety and Licensing Board.
23 JUDGE JAMES C. LAMB, Member,
24 Atomic Safety and Licensing Board.
25

1 JUDGE FREDERICK J. SHON, Member,
2 Atomic Safety and Licensing Board.
3

4 APPEARANCES:

5 On behalf of the Applicants:

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C O N T E N T S

WITNESSES

DIRECT CROSS BOARD REDIRECT RECROSS

JEROME H. GOLDBERG)

12188 12131

DON JORDAN)

12241

EXHIBITS

For Id In Evd

Applicant 69

12163 12163

CCANP Exhibit 83

12217

CCANP Exhibit 84

12277 12284

CCANP Exhibit 85

12292 12329

CCANP Exhibit 86

12332

CCANP Exhibit 87

12337 12338

CCANP Exhibit 88

12342 12344

P R O C E E D I N G S

JUDGE BECHHOEFER: Good morning, ladies and gentlemen. Before we get into the board examination of Mr. Jordan, are there any preliminary matters?

MR. SINKIN: No.

JUDGE BECHHOEFER: Okay, Dr. Lamb?

JUDGE LAMB: I can't see Mr. Sinkin. Can you hear me all right?

MR. SINKIN: I hear you fine.

DON JORDAN,
testified further upon his oath as follows:

BOARD EXAMINATION

BY JUDGE LAMB:

Q Good morning, Mr. Jordan.

A Good morning, Judge Lamb.

Q This may be a repetition, but I want to be sure that it is in the record just in case it isn't, but can you -- it has been testified that HL&P viewed Mr. Rice as not being fully qualified to run the STP for B&R. Could you explain to us briefly the rationale for that?

A Yes, Judge Lamb. Mr. Rice had had a long and successful career in a variety of things for Brown & Root and had advanced through their organization to a high ranking position. However, we feel and felt and feel today that the sophistication that's needed and the

1 technical knowledge that's needed to build, engineer and
2 to manage and construct a nuclear power plant of the
3 magnitude of South Texas is something that clearly
4 requires people of great experience and talent in that
5 area, and that while his general background in some
6 fields was good, that we didn't believe he could bring
7 the experience and the talent necessary to fit this
8 particular job to the proper level.

9 Q Were your concerns specifically with nuclear
10 experience?

11 A Yes. We felt that nuclear experience was
12 important and that he had none of that.

13 Q Referring to your notes for the June 29th
14 meeting, that's CCAMP Exhibit No. 79, under item 7 E, I'm
15 wondering if that's correctly worded. You mentioned,
16 "Probably better to keep B&R on engineering." Was that
17 intended to be engineering or construction?

18 A I think Judge Lamb, as I try to go back and
19 remember that, that we were talking about -- we were
20 talking about what the -- this is the June 29th meeting,
21 I think, that I had with Mr. Barker, Goldberg and Oprea,
22 and we were discussing how we might go about developing
23 these options that we wanted to look at. And I think the
24 statement was made by one of these parties that if in
25 fact it was possible and we were only going to change one

1 piece of this, it probably would have less impact on the
2 project if Brown & Root were able to continue in
3 engineering and somebody else did the construction.

4 But that wouldn't solve the problem. We felt
5 the problem was primarily one of engineering and so that
6 kind of rationale was not one that would fly. I think
7 that -- I recall that we did in fact discuss the issue in
8 some detail.

9 I think that note reflects somebody's comment
10 that the easiest transition would have been had Brown &
11 Root been capable of doing the engineering and somebody
12 else would have to come in and do the construction. But
13 that didn't fit this particular need.

14 Q So this is essentially correct as written here?

15 A I think the note is correct, as I wrote it.

16 But it was -- it was not one that we gave any measure of
17 consideration to.

18 Q Now, under Item 5, you mention the engineering
19 only, perhaps positive with NRC; engineering and
20 construction, perhaps positive with NRC.

21 How much of a factor was that in your decision?

22 A Oh, it was quite a small factor in the decision
23 to seek out options that we might have on it. It clearly
24 would be a factor if you decided to make a change.

25 If NRC were to take the position that, "We

1 won't allow you to make a change in the architect
2 engineer or contractor at this stage," well then
3 obviously we'd be faced with a much different problem.

4 So the general question at that time was would
5 the NRC look with favor, would they look with disfavor,
6 would they have any opinion at all as to whether or not
7 we made a change in the architect engineer contractor.
8 And it was clearly a very, very broad speculation with no
9 foundation and at all by the people who were in there.

10 Q Am I correct in my understanding that the
11 original plan was that -- HL&P's original plan was to
12 replace Brown & Root as the architect engineer but to
13 retain them as the contractor?

14 A Yes, sir. As we started looking into this,
15 Judge Lamb, we gave consideration to making a change on
16 the entire operation. By the time -- and I was refreshed
17 my memory on that, on the request for proposal; by the
18 time we got to the request for proposal, we had decided
19 to keep Brown & Root at least at that time, on
20 construction.

21 And I think we made the provision or made the
22 statement that even that perhaps would have to change
23 later but we thought Brown & Root could do the
24 construction if we had somebody in who could do the
25 engineering and construction management well.

1 Q Why did you wish to keep Brown & Root as the
2 constructor if you were going to let them go as the A/E?

3 A Well, I think there was two reasons we thought
4 about that. The first place, we thought Brown & Root
5 could do the construction work. You know, they're a very
6 broad and talented, successful construction company for
7 many years, have competed to be the largest contractor in
8 the world and we knew they knew how to pour concrete,
9 they could pull wire, they could do things that were
10 necessary to build things.

11 So we believed they probably could be
12 successful as a contractor. We felt then and I still
13 believe that their primary problems were those of
14 engineering and managing that construction.

15 So we thought by keeping them there, we would
16 really simplify the transition that would take place, and
17 would make that transition easier than it would have had
18 we changed everybody off at the same time. So it was our
19 thought right or wrong at that time, that the best way to
20 handle the transition to get the project completed and to
21 be built well would be to have the cooperation of Brown &
22 Root in that kind of transition where they would stay as
23 a constructor and somebody else would do the engineering
24 and construction management.

25 Q Did you make any concerted effort to convince

1 Brown & Root to remain on as contractor?

2 A Yes, we did.

3 Q Do you know why Brown & Root decided to
4 withdraw as contractor?

5 A Well, I guess, Judge Lamb, I could speak to
6 that from my point of view. Brown & Root may give you a
7 different answer. We asked them to stay on as
8 constructor. I asked both Mr. Feehan and Mr. Harbin
9 that. And told him that we wanted him to do that and we
10 needed their cooperation in the transition. They agreed
11 to do that.

12 Sometime later, they decided that they chose
13 not to do it. They set up -- and I will perhaps not get
14 this exactly right, but I will try to share it with you
15 as my memory serves me. They set up some provisions
16 which they would like to have assurances on if they did
17 stay as contractor.

18 We were not able to give them all those
19 assurances, and so then they made the decision they would
20 prefer not to stay as contractor.

21 After we had gone then through the process of
22 selecting Ebasco or virtually ready to award it to
23 Ebasco, they came back again and said perhaps they would
24 be interested in staying as a contractor. But -- or as
25 constructor. But we had already gone far enough then

1 that the die was cast.

2 Now, I will share with you, as my memory serves
3 me, what those provisions were, that Brown & Root wanted
4 to have assurance on. They wanted to be relieved of any
5 obligation that they may have had for previous
6 construction or engineering problems at the plant with
7 assurances that any future kind of problems would -- that
8 they would not be held responsible for; we were not able
9 to make that concession to them. They wanted to be sure
10 that they felt that as constructor alone, they
11 would -- that their fees who would be affected and they
12 wanted to be sure their fees were protected.

13 And we told them we'd look at that with them
14 and that if their fees were affected by virtue of our
15 decision to make this change, we would talk with them
16 about that.

17 The third thing they wanted to be sure of was
18 that they would be able to have control over their field
19 forces, themselves, and not have a construction manager
20 directing their field forces. And I think that was
21 worked out with Mr. Goldberg as well. But we were not
22 able to give them assurances that there would never be
23 any claims against Brown & Root for past problems or give
24 them indemnification for any future problem that might
25 occur on the plant. That's as the best of of my memory

1 recalls it.

2 Q I have a question which is -- I'm not quite
3 sure how to phrase it, because it's sort of a sloppy
4 question. But let me try anyway.

5 A Okay.

6 Q In questions, your Questions 14, 15, 16 and 17,
7 you responded to specific questions about why you did not
8 mention the Quadrex report in your earlier testimony.

9 A Okay.

10 Q And in going through the transcript, I find
11 that there is a long line of questioning, with lots of
12 interruptions, between Pages 1224 and 1251. This line of
13 questioning relates largely to matters dealing with
14 consultants and reports and engineering and several
15 things which are related to that area. And I wondered if
16 you could give us the same type of response as to why you
17 didn't mention Quadrex report in that area as well. Can
18 you take time to look at that, if you'd like.

19 MR. GUTTERMAN: Let me see if I can find it.

20 MR. AXELRAD: I'm not sure if we have the
21 transcripts here, do we?

22 JUDGE LAMB: I don't want you to recall off the
23 top of your head. I'm not suggesting you read in it
24 great detail, but you might want to thumb through it to
25 refresh your memory. It begins at Page 1224.

1 MR. AXELRAD: Just to make sure I understand,
2 Judge Lamb, these are not pages that are referenced in
3 the Board's orders, these are additional pages you're
4 asking him to refer to now.

5 JUDGE LAMB: These were pages not mentioned in
6 the direct testimony. In other words, there were four
7 sets of pages.

8 MR. AXELRAD: But those four sets of pages
9 dealt with specific pages that the Board had identified
10 in its report and these are original pages.

11 JUDGE LAMB: Right.

12 A Judge Lamb, how far was I to go from 1224 to --

13 Q (By Judge Lamb) Well, actually the line of
14 questioning is scattered through about 25 pages there.

15 MR. AXELRAD: I believe you said to Page 1251.

16 JUDGE LAMB: Page 1251.

17 A Okay, Judge Lamb, I have browsed that and if
18 you'll ask me the question again so I'm sure I understand
19 what it is and I'll try to answer.

20 Q (By Judge Lamb) My question was simply: You
21 addressed in your direct testimony why you did not mention
22 the Quadrex report and related matters with respect to these
23 other pages. And in going through the transcript again, it
24 occurred to me that that seemed to be an area where
25 logically, it might have been mentioned also; and I

1 wondered why you did not.

2 A I'll try to answer it and put myself back in
3 the position that I was that day. Let me go back just a
4 minute.

5 I understood at the time that we started the
6 Quadrex report that it was to be a study aimed
7 exclusively at the efficiency of the engineering, the
8 effectiveness of the the engineering coming out of Brown
9 & Root.

10 I also understood at the time that I went down
11 to testify in Bay City, that that hearing was on
12 construction and on quality assurance. Now, to the degree
13 that that was properly or improperly separated in my
14 mind, it was separated.

15 And so I was down there talking primarily about
16 construction and quality assurance. And I felt that the
17 limited exposure I'd had which had been a quick briefing
18 a couple of days before on the Quadrex report, that it was
19 an engineering issue and something we had to deal with on
20 quite a different basis on schedule and cost.

21 As I look through here, I can see what strikes
22 your imagination, because there's some questions here
23 that do, in fact, seem to imply had there been
24 studies based on engineering.

25 Some of those engineering things were way back

1 in the history of the company. I may have been zeroing
2 in on the fact that initially when Brown & Root -- we
3 went to the field, they said there was 50 or 60 percent
4 of the engineering done and we found out later that there
5 was considerably less.

6 As I look through these other buzz words in
7 here, there seem to be some words in there that says,
8 "Are there any studies that would indicate Brown &
9 Root's integrity or Brown & Root's truthfulness," or
10 something like that.

11 The only thing I can tell you is that at the
12 time I was giving this testimony, I must have been
13 zeroing in on something that would go toward the word of
14 integrity or truthfulness rather than a study of actual
15 performance. I had no reason not to mention the Quadrex
16 report with the exception that I probably couldn't have
17 answered any specific questions about it, and had no
18 reason to try to hide it. That's the best answer I can
19 give you in terms of looking through it quickly and to my
20 knowledge, that's a truthful answer.

21 Q (By Judge Lamb) Was there -- were you advised
22 to avoid the Quadrex report at any time?

23 A No.

24 Q -- in connection with --

25 A No, I had not talked to any of our licensing

1 lawyers about the Quadrex report; I had had the meeting
2 with Mr. Goldberg and Mr. Oprea two or three days prior
3 to that time; I hadn't seen the report at that time; the
4 question of -- the question of reportable items, Mr.
5 Oprea said they're going to be -- Mr. Goldberg said there
6 were going to be two or three of those. We said, "Fine,
7 go ahead and report whatever has to be reported."

8 He went forward and did that in the normal
9 course of business. We had no discussion about whether
10 it ought to come up or whether it shouldn't come up. And
11 it just never occurred to me and any of those in any of
12 those questions, that that was an issue to bring forward.

13 Q Was any conscious effort or intent on your part
14 of avoiding the subject?

15 A No, as I said before, when Mr. Goldberg and Mr.
16 Oprea left my office, I had the impression that there
17 were a number of additional -- there was additional work
18 that would have to be done on that study before they
19 would be able to come to a firm conclusion on it.
20 Because as I said, Mr. Goldberg didn't agree with some of
21 the conclusions that had been reached and he felt others
22 had been reached on the basis of incomplete information.

23 And so we left the office with the -- or he
24 left my office with the clear idea that that additional
25 work would be done and we would talk again. So I really,

1 while I didn't dismiss it from my mind, it was not an
2 item that was in the front of my mind as an issue that I
3 was going to deal with any time quickly. It was going to
4 take some time to get it solved and it was one that we
5 would save for another day.

6 So he just didn't come to me in response to any
7 of the specific questions that were asked and I would say
8 that I probably must have been zeroing in on some of the
9 buzz words rather than some of the general broader
10 question that it may have implied.

11 Q I'm sorry, the question was so loose, but I
12 couldn't think of any other way to get that over.

13 A I hope the answer is not too loose. That's
14 about as good as I can put it together for you, Judge.

15 Q Another question, in earlier testimony, that is
16 back in '81 and '82, by you and by others, in response to
17 questions about capability of E&R and the relationship
18 between HL&P and B&R, we were told basically to
19 paraphrase it, I'll try to paraphrase it, that there were
20 problems but that these were being worked out and that
21 generally, the responses were favorable with respect to
22 B&R, or seemed to be.

23 Now, at the same time, you had this matter of
24 poor progress in engineering, that may be for the sake of
25 argument, ten percent completion as opposed to 50 percent

1 completion when you first started construction. And the
2 Quadrex report had just been submitted dealing with that.
3 And the company was then, at the time some of that
4 testimony, in the process of working its way into a
5 position to fire B&R from A and E work. Can you try to
6 reconcile for me in general, how these seemingly opposing
7 things could be related, can be reconciled?

8 A I know that it's been represented to you that
9 we were moving into a position to fire Brown & Root ever
10 since we had the tolling agreements signed in December
11 1979. That's just not true.

12 What happened in December of 1979 was that some
13 of the statute of limitations were beginning to run on
14 the early years of that project. And I don't think any
15 businessman would be properly discharging his
16 responsibility if he let that happen, when in fact, you
17 were having some difficulty with the project that we were
18 having then.

19 So it was a business decision, to say, "All
20 right, you know, we're not interested in filing a
21 lawsuit. We want this project to go forward, and we
22 want it to go forward safely, we want it to go forward
23 properly under the jurisdiction of the Nuclear Regulatory
24 Commission. But we want it to be built on time and on
25 schedule to the degree that it can.

1 "We've got these difficulties in the past, now
2 you can wipe those out by going forward with the project
3 and let's getting it taken care of. But if it doesn't
4 take care of it, but don't want to waive any rights that
5 we might have simply because we've let time expire."

6 That was the total logic behind it. We thought
7 that it might even be a spur to Brown & Root to move
8 forward and do the things we felt they needed to do to
9 get the project completed.

10 If in fact, had we let the statute run on those
11 issues, that would eliminate some of the responsibility
12 that Brown & Root had had to the project in previous
13 engineers. So it was filed and it was agreed to for that
14 purpose and it was a two year statute of limitation
15 letter, and we thought that within the next two years
16 things were going to be much better and that we could
17 forget about that issue of having been signed.

18 As we went forward, it didn't get much better
19 rapidly as we thought that it might do, but we were not
20 in the position of filing a lawsuit in September 1979,
21 and if I'm not successful in convincing this Board that
22 that decision in terms of changing Brown & Root from that
23 job was not made until the end of June, 1981 then I'm not
24 doing a very good job of telling you the truth. Because
25 that decision was, in fact, not made until that day to

1 search out the options and the decision to remove them
2 wasn't made until September that year.

3 Now, I will tell you that the relations between
4 Brown & Root and Houston Lighting & Power Company during
5 that period of time with the show cause and perhaps a
6 little earlier wasn't on the natural high that's born of
7 success. The project was behind and as a result of it
8 being behind, there was concern and frustration on the
9 parts of many of the top management of both Brown & Root
10 and Houston Lighting & Power Company, and in the lower
11 levels of our organization, where people worked every
12 day, that frustration was probably felt even to a higher
13 degree, because they were under a continuing and mounting
14 pressure to perform in those particular levels.

15 And while there could have been even some
16 clashes from time to time between individual people
17 working on that project. But at the level, the top level
18 of the Brown & Root organization and of Houston Lighting
19 & Power Company, we were, in fact, still attempting to
20 work those problems out and were getting some
21 encouragement in terms of thinking that it was going to
22 happen.

23 You recall that the show cause had
24 already had been issued. I felt, and I think, Mr.
25 Goldberg and Mr. Oprea felt that the Brown & Root people

1 and the Houston Lighting & Power Company people pulled
2 together very well during those show cause issues and
3 addressed them accurately and well and did a good job.

4 That, in fact, did have an effect on the amount
5 of engineering they were able to get out at the same time
6 because a number of people were deviated from that
7 assignment to handle the show cause effort. But I felt
8 that we were seeing a renewed dedication by the top
9 leadership of Brown & Root during that period of time to
10 do what needed to be done to satisfy the Nuclear
11 Regulatory Commission and the demands of this job.

12 And so during those months, it was with some
13 feeling of, not satisfaction, but certainly some feeling
14 of increased encouragement that Brown & Root was going to
15 be able to get that done. And it was not until we
16 received, on the June 26th meeting in 1981, where Brown &
17 Root gave us their preliminary expectations of what they
18 were going to be able to do over the next 18 months as a
19 target, that I decided in that meeting that that as a
20 target was not adequate for us to address when they, in
21 fact, had not necessarily been successful in reaching
22 targets before.

23 That target was to from July the first to the
24 end of 1981, make three percent progress on the project
25 and for the entire year 1982, make six percent

1 progress on the project, as I recall the numbers, which
2 was a total of nine percent over an 18 month period of
3 time. That, for a project like South Texas, just is not
4 an acceptable target. And if there's going to be a time,
5 then, to review the options to change that appeared to me
6 to be the time to review it. That with no expectation of
7 making more and perhaps making less than nine percent
8 over the next 18 months, if you're going to look at an
9 option to change, that's the time frame you ought to do
10 it in and that's when we decided to do it.

11 I've probably rambled a lot more than you
12 expected me to and maybe didn't even touch all the issues
13 you were interested in. So if you'll re-ask it, I'll try
14 to touch some.

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1 Q No, I was interested in your views. I think
2 that answered my question.

3 JUDGE LAMB: That's all I have.

4 Q (By Judge Shon) I must say, Judge Lamb asked
5 most of the questions in most of the areas that I was
6 interested in. There is perhaps one little loose end in
7 my view and that is the following: As I understand it,
8 when you were testifying in May of 1981, you really
9 didn't think of the Quadrex report and construction as
10 as QA matters; is that right?

11 A That's correct.

12 Q Or at least not as construction QA matters.
13 You were focused on Report 79-19 and the show cause
14 order issue. But, now, you knew at that time, or I
15 trust you knew, that a 50.55 review had been triggered
16 by the Quadrex report. Did you know that they were
17 doing something --

18 A All I knew at that time, Judge Shon, was that
19 Mr. Goldberg indicated to me there were three reportable
20 items in that report and he told me what they were and
21 that he was going to make those reports to the NRC.
22 That's what I knew about it.

23 In the normal course of business in our
24 company, Mr. Goldberg, Mr. Oprea before him and now Mr.
25 Goldberg and his people make those decisions. And when

1 we have a reportable deficiency that needs to be
2 reported to the NRC, they don't come in and ask me about
3 it, they go ahead and make that report -- or make the
4 report. It's done in the normal course of our business.
5 It's not screened by me or anything else. It never has
6 been.

7 So, I gave little consideration to whether the
8 report should be made or shouldn't be made. It was
9 automatically done and the details of exactly what
10 happened after the report was made I didn't go into at
11 all.

12 Q So, then, you wouldn't necessarily realize or
13 have your mind focused on the notion that 50.55 in some
14 way specifically mentions QA, for example?

15 A No, I wouldn't know that.

16 Q I see. And it would not then serve to make
17 any kind of connection between Quadrex and QA if someone
18 deliberately told you about it; is that right?

19 A No.

20 JUDGE SHON: Thank you. That's all.

21 Q (By Judge Bechhoefer) Mr. Jordan, I just want
22 to wrap up a few loose ends and clarify a few things in
23 my own mind which I'm not even so sure about.

24 Back in Phase I, I recall we had testimony
25 about you having a meeting with Mr. Feehan out on the

1 golf course sometime in August of '81. And I wanted to
2 see if you could tie that in with -- you mentioned three
3 meetings yesterday.

4 A The golf course?

5 MR. AXELRAD: I'm sorry, Mr. Chairman, did you
6 say that back in Phase I we had testimony with respect
7 to Mr. Jordan --

8 JUDGE BECHHOEFER: Not by Mr. Jordan, by Mr.
9 Goldberg, I think.

10 MR. AXELRAD: Well, he testified 1982. When
11 Mr. Jordan --

12 JUDGE BECHHOEFER: '82, I'm sorry, yes.

13 MR. AXELRAD: When Mr. Goldberg testified in
14 '82, he referred to an August 1981 meeting between Mr.
15 Jordan and Mr. Feehan. Is that the question?

16 JUDGE BECHHOEFER: I sort of recalled that
17 they were playing golf together.

18 Q (By Judge Bechhoefer) I wondered what that
19 was and how that fell in with the three that you talked
20 about yesterday.

21 A Mr. Chairman, I never have played golf with
22 Mr. Feehan, but I think I can tell you -- I think I can
23 tell you maybe how that came up. We had breakfast one
24 morning out at River Oaks Country Club and talked about
25 this project. And that's the closest I have ever been

1 to a golf course in my memory for the time being. That
2 was very close to the golf course.

3 JUDGE SHON: It's a much better story the
4 other way.

5 Q (By Judge Bechhoefer) Well, how does that fit
6 into the context of the three meetings you talked about
7 yesterday?

8 A Well, let me tell you what happened at that
9 meeting. And I would guess that's perhaps the one Jerry
10 had in mind.

11 I met with Tom for breakfast that morning and
12 that's the morning that we had told them that they had
13 vacillated back and forth between wanting to be the
14 contractor -- or the constructor and not wanting to be
15 the constructor and then perhaps wanting to be it
16 again. And it seems to me that was in October of 1981.
17 And, so, the purpose of the meeting was to find out just
18 exactly where they stood on that project and see if we
19 were going to be able to work anything out. And I told
20 him that we needed to know within the next week or ten
21 days what their real choice would be on the project.

22 That's when we got into the discussion on
23 these requirements that I mentioned earlier to Judge
24 Lamb that Brown & Root would like to have assurances on
25 prior to the time that they gave any consideration to

1 being the constructor. And we went over those as I
2 relayed them a minute ago. They wouldn't have any
3 obligation for anything that had happened on the project
4 at that point in time and they would be indemnified for
5 anything that may happen further on in the project.
6 That they would be able to have control over their
7 individual people in the work force and that they would
8 have their fee adjusted if, in fact, it needed to be
9 adjusted.

10 I told them fine, that we would adjust their
11 fee if, in fact, our movement off of engineering
12 justified that. That Mr. Goldberg and Mr. Pieper could
13 get together and work out the problem of the control
14 over their work force. And Jerry and Ber Pieper did get
15 together and discuss that later. But that there was not
16 any way I could offer him the possibility that any
17 problems in the past nor any problems that might occur
18 in the future would be forgiven entirely.

19 So, that's the meeting where that was
20 discussed and they later came back with the judgment
21 that if they could not work that agreement out, that
22 they wouldn't be able to be the constructor.

23 Q Now, where was the lunch that you mentioned in
24 August?

25 A That was a lunch at the Houston Club. And if

1 I recall the conversation on that lunch, it was about
2 three or four days prior to the time that the responses
3 to the requests for proposal were to come in and we
4 talked about generally that. I kept him informed all
5 the way through as to who the people who were going to
6 propose were, what area they were going to propose in.
7 And that was three or four days before those responses
8 came in and we told him we'd be back with him again.
9 So, it was an earlier meeting than the one at -- the
10 breakfast at River Oaks.

11 Q All right. Now, did you have any meetings in
12 the interim? Was there a meeting where you told Mr.
13 Feehan exactly what you were going to do before you told
14 the press?

15 A Yes, sir. I think it was July 24th, which
16 we're kind of moving back in these meetings. On July 24
17 it was at the South Texas Project. It was one of our
18 normal meetings that we held down there with the Brown &
19 Root management. And I told Mr. Feehan at that time
20 that we, in fact, were going to have to look at every
21 option that we had, that we had asked him to look at
22 every option for the last two years in terms of hiring
23 the best people he could find in the world to bring into
24 the project to do the things that needed to be done to
25 keep it moving well. And that he had not been able to

1 do it and so we were going to have to take a look at
2 that ourselves. And that in so doing, we were going to
3 send out the request for proposals. They had been
4 prepared, they had not yet been sent out at that time.
5 I wanted him to know about it so he didn't hear it
6 indirectly from some other place. And that was I think
7 July the 24th.

8 Q I'd like to show you a series of -- let's see
9 if I can get them to you.

10 JUDGE BECHHOEFER: Well, I guess everybody has
11 copies.

12 MR. GUTTERMAN: Do you have extra copies for
13 the parties?

14 JUDGE BECHHOEFER: This is what appeared on
15 the back of the exhibit that I --

16 JUDGE LAMB: Number 79, I think.

17 JUDGE BECHHOEFER: I have to save enough
18 to --

19 MR. GUTTERMAN: Okay.

20 MR. PIRFO: Judge Bechhoefer, I can't hear you
21 from here. Did you say this was the back of 79, what
22 was originally the back of 79?

23 JUDGE BECHHOEFER: Yes.

24 MR. PIRFO: We have that.

25 JUDGE BECHHOEFER: This is just a reproduced

1 back.

2 Off the record for a minute.

3 (Discussion off the record.)

4 Q (By Judge Bechhoefer) Mr. Jordan, would you
5 look this over? And my question first is does this
6 relate to any of your meetings, any of the various
7 meetings we've heard about with Mr. Feehan? And, if so,
8 which ones?

9 A Okay, Mr. Chairman. I have a habit, good or
10 bad I guess, of when I'm going to have a sensitive
11 meeting, to try to sit down and outline what I want to
12 accomplish in that meeting before I go. And this is one
13 that I had done prior to the July 24th meeting that I
14 had with Mr. Feehan at the South Texas Nuclear Project
15 when I was going to tell him about the fact that we were
16 sending out the requests for proposals and that we were
17 going to look at these other options.

18 I'd be glad to take you down through the
19 outline as to what I had in mind or answer any specific
20 questions about it that you may have.

21 Q Well, I have questions on three or four of the
22 items, but -- well, start from the beginning. The new
23 cost and schedule, is that the one that you had referred
24 to that Brown & Root was preparing?

25 A Yes. I'm sure in looking at that I refer to

1 the new cost and schedule that was being put together
2 that was supposed to be completed sometime toward the
3 end of that year. But that referred back to the
4 preliminary numbers that we had gotten from Brown & Root
5 at the June the 26th meeting that said the three percent
6 by the end of that year in six months and six percent in
7 1982, and that the attitude of the City of Austin, of
8 Central Power & Light Company and Houston Lighting &
9 Power Company was quite predictable in terms of how we
10 felt about a projection that would move the project nine
11 percent in eighteen months. And that as a result of
12 that, we were going to be forced to look at every option
13 we had to bring the project along within the time frame
14 that would cause it to be built with quality and built
15 also within a reasonable time frame.

16 That we had urged him to look at these options
17 for the last two years. And that while he had done a
18 few things, he had not gone out and gotten the best
19 people in the world, which you probably get tired of
20 hearing, but that was my phrase. And I kept telling
21 everybody that, that the project needed not only the
22 best people who might be on Houston Lighting & Power
23 Company's payroll at the time or the best people who
24 might be on Brown & Root's payroll at the time, but we
25 needed to go out and search for the best people in the

1 world who could bring this project back.

2 While they had made some progress, they simply
3 hadn't gone far enough along in terms of results. And,
4 so, we had made the determination that we were going
5 forward to search those options out and we wanted him to
6 know about it before we did. That we hadn't told
7 anybody about it before we told him, that we had not
8 made any decision --

9 Q Is that what the "no one knows this" means?

10 A Yes. That he was the first one we told so
11 that he could prepare himself for whatever questions he
12 may get about it. That no decision had been made as to
13 whether we were going to take Brown & Root off the
14 entire project or whether we were going to keep them on
15 part of it, that we were just looking at options at that
16 time and that we wouldn't make any move on that without
17 talking to him about it first.

18 That if anything was done, it would be done
19 after we had a great deal of discussion about it and
20 that we would do it in a way to protect the project and
21 to protect the owners and Brown & Root. And by that I
22 meant that we'd do it in a way that we would try to have
23 the smoothest transition possible so that the project
24 would not be startled by or shocked by such a
25 transition. And that we didn't unnecessarily want to

1 damage the reputation of Brown & Root through any kind
2 of transition period. There'd be no reason for us to
3 choose to do that and I wanted him to be assured of that
4 fact.

5 I went on to tell him that engineering was the
6 big question. That the project we felt at that time was
7 not only a concern to us as owners, but it was becoming
8 a national concern for other utility companies who were
9 building power plants, for manufacturers who were
10 building equipment, and for architect engineers who were
11 designing and building nuclear power plants around the
12 country. And so that we didn't think any of the owners
13 believed that Brown & Root could be effective in
14 completing the engineering at that time on the basis of
15 the recent projections that they themselves had given us
16 as a target.

17 That the job was bigger today than it was when
18 they started it by virtue of building a nuclear power
19 plant in 1981 is just a tougher job in our opinion than
20 building a power plant in 1970 was perhaps and that's
21 what I meant by that.

22 Let's see, "probably no one will get into it
23 now," the point I made there was I thought the job
24 was -- I thought building a power plant was infinitely
25 more difficult in '81 than it was in '71 and I didn't

1 think we'd see any new architect engineering people who
2 didn't have experience in the nuclear field moving into
3 it and attempting to offer full services in it anymore.
4 Whether that's right or wrong, I don't know. I think
5 it's proved to be right thus far. It may change.

6 And I --

7 Q So, that phrase did not relate to your
8 expectations as to whether you would receive responses
9 to the proposals that you were about to send out?

10 A Oh, no. No. Probably no one will get into it
11 new now, no, that was simply a statement on my part, and
12 I believe it and still do, that we wouldn't see anybody
13 like Brown & Root who had made a decision to move into a
14 full service type of nuclear activities which was a
15 reasonable thing for them to do in 1969 or '70 when they
16 were moving into it. But, you know, the scope of
17 building one of these plants just changed so much in 10
18 years, I doubted if anybody knew would move into it on
19 that same basis.

20 Q The word knew did not refer to your project
21 itself?

22 A No, no, that referred to knew architect
23 engineering firms without experience in nuclear
24 activities.

25 And that they just had not been able to bring

1 in the support that they needed. And then I said again,
2 a normal phrase I guess, that we didn't have the best
3 people in the world working on the project.

4 Q Now, just to clarify in that item 4, 4(2) I
5 guess, the words no one, you're referring to the other
6 owners or did you have conversations with others besides
7 that as to Brown & Root's capabilities, engineering
8 capabilities?

9 A I had had some conversations with, and I
10 probably can't even -- I probably can't quote you who,
11 with different people in the industry, as well as the
12 owners who believed that -- who supported my thought at
13 least that Brown & Root was going to have a difficult
14 time with the engineering part of it because it was the
15 most difficult thing to do on a plant such as this.
16 This would have taken place at an EI meeting or
17 someplace where everybody would get together and talk
18 about their collective projects around the country.

19 Q Were meetings of that sort also the source of
20 your statement that it was of concern to the entire
21 nuclear industry?

22 A Yes. I felt that it was. I knew that it was
23 because every nuclear power plant that has difficulty in
24 any part of the country has a way of affecting in some
25 way nuclear power plants that are being built other

1 places. And, so, I'm sure it was a concern to the
2 nuclear industry broadly in the country. That's the
3 broad statement I made to him and I believed it.

4 Q Did other -- was it well known throughout the
5 industry that the South Texas Project was having certain
6 problems in engineering as distinguished from QA/QC
7 problems and the show cause order problem?

8 A No. I doubt that that's so. It was well
9 known it was having QA/QC construction problems. It was
10 not -- it was not well known, I don't suppose, as
11 broadly that they were behind in engineering. I
12 continually stated it to all of my friends in the
13 industry that that's where we were having the
14 difficulty. So, they may have gotten it from me for one
15 place.

16 Q I see.

17 JUDGE BECHHOEFER: Off the record for a
18 minute.

19 (Discussion off the record.)

20 JUDGE BECHHOEFER: Back on the record.

21 Does anyone have any objection first if this
22 document were to be put into the record?

23 MR. SINKIN: No objection.

24 MR. REIS: No objection.

25 JUDGE BECHHOEFER: Well, I have the extra

1 copies.

2 MR. AXELRAD: Off the record for just one
3 minute.

4 (Discussion off the record.)

5 MR. AXELRAD: Mr. Chairman, if we can marked
6 for identification as Applicants' Exhibit No. 69 the
7 one-page sheet that the Board had provided to Mr. Jordan
8 previously and that has been discussed this far at this
9 hearing, and we then move that exhibit into evidence.

10 JUDGE BECHHOEFER: Assuming there won't be any
11 opposition, the Board will accept this into evidence.

12 2 (By Judge Bechhoefer) Mr. Jordan, just to
13 continue a little more on the meeting, did you ever meet
14 with Mr. Feehan in the period of time shortly before the
15 September 24 date at which a replacement was announced,
16 at least to the press it was announced?

17 A Let's see, I --

18 Q Or was there some sort of a formal meeting
19 between you and Brown & Root where the final word was --

20 A Yes, on September the 15th. I can tell you
21 how that sequence took place, if you're interested, Mr.
22 Chairman.

23 Q Yes. I'm just trying to get a pretty clear
24 record of the whole procedure.

25 A All right. When Mr. Goldberg and Mr. Oprea

1 and I made our final review of the evaluation, it was on
2 September the 12th, 1981, and we met that morning to
3 discuss what we felt we ought to do. On September the
4 12th, in the afternoon or at least later that day on
5 September the 12th, we had the management committee of
6 the South Texas Project being represented by -- who
7 represented each of the owners come into our offices and
8 we made that presentation to them. And we broke this
9 into two different parts because it was clear that this
10 decision was going to be made by the chief executive
11 officers eventually or by the prominent groups in San
12 Antonio or Austin. We wanted to give it all to the
13 management committee, get their recommendations or
14 decisions on it so that they would have time to go back
15 home and discuss it with the mayors and the chairman of
16 their board and everybody else and then be able to make
17 an intelligent decision when we had the meeting for
18 them.

19 So, we'd had that meeting on the 12th and it
20 was a unanimous decision to go forward with the
21 recommendation to replace Brown & Root on the
22 engineering and construction management with
23 Bechtel. They took that message back to their various
24 principals.

25 Then on the 14th, which was January -- I mean

1 which was that same September the 14th, I called a
2 special board meeting of Houston Lighting & Power
3 Company's board to reflect to them the decision by the
4 management committee and to get authorization from them
5 to vote to go that direction at the meeting that we held
6 later on on the 15th, which was the next day.

7 So, on the morning of the 15th -- and our
8 Board unanimously concurred with the decision of going
9 forward in that direction.

10 The next morning then on the 15th, the primary
11 principals of each of the owners met in Houston in our
12 offices and we reviewed the same material that had been
13 reviewed with the management committee. They had all
14 been briefed by their representative on the management
15 committee and had come there prepared to ask questions
16 and to research it thoroughly. By the time that meeting
17 was over, they voted unanimously to replace Brown & Root
18 on the engineering and construction management with
19 Bechtel.

20 That very afternoon I went over to see Tom
21 Feehan to tell him this because I didn't want him to
22 hear it any other place and I wanted to set a meeting up
23 with Jack Harbin as quickly as possible. I was not able
24 to get to Jack until the 18th because he was out of
25 town. But I had the meeting with Tom in his offices on

1 the afternoon of the 15th and went to Dallas on the 18th
2 and had a meeting with Jack Harbin giving both of them
3 this information.

4 Q You didn't want to have them read it in the
5 paper first.

6 A Yes, that's the reason. We needed, Mr.
7 Chairman, the cooperation of Brown & Root in that
8 transition and we wanted to do the best job we could in
9 terms of obtaining that cooperation. And I think the
10 Board knows, but I think it's proper for me to say it
11 again, that they, in fact, were very cooperative in the
12 transition and that made it easier to do.

13 Q I want to go back to just one or two
14 statements in your testimony itself.

15 A All right.

16 Q We discussed this a little yesterday, but on
17 page 2, line 19, your answer 6 where you said you
18 concurred with the decision of Messrs. Oprea and
19 Goldberg to hire Quadrex or to undertake a third-party
20 assessment. What basis did you have for concurrence?
21 Just their word that it was necessary or did they just
22 tell you that we're going to do this and you said okay?
23 Or did something more than that go into your
24 concurrence?

25 A No, I will tell you honestly, Mr. Chairman, I

1 didn't know who the Quadrex people were even. I had
2 never heard their name as far as I knew at the time they
3 came in. George and Jerry had researched this
4 carefully. Jerry was new in our organization and
5 evaluate that for him to move forward in the best
6 manner, he needed to have an independent assessment of
7 where the engineering was. That made sense to me, so I
8 said fine.

9 Q Now, on the next page 3, approximately lines
10 18 through 21, in your discussion of the deficiencies,
11 did you -- and I guess again today you mentioned you
12 didn't discuss the reportability question with the I
13 think you used the term licensing attorneys. Did you
14 discuss it with first any other attorneys?

15 A I said --

16 Q I'm not sure who you meant by licensing
17 attorneys.

18 A I said I discussed it with the licensing
19 attorneys?

20 Q You said you did not.

21 A Yeah, I don't think I did, that's the reason I
22 asked the question.

23 Q Now, my question was did you discuss it with
24 any other attorneys other than licensing?

25 A No, I discussed it --

1 Q I'm not sure who you meant by licensing
2 attorneys, but I assume you meant the group here or
3 perhaps the Baker & Botts people.

4 A No, I talked to Jerry and to George, that
5 being Goldberg and Oprea, about it. I don't recall
6 anybody else being in that meeting.

7 And Mr. Goldberg said there were three areas
8 that they felt were reportable. One being the HVAC
9 problem which I had been generally familiar with. One
10 being a computer code problem which I knew nothing about
11 previous to that; and that it was very indefinite as to
12 whether that was going to be a problem or not, but it
13 had to be reported as it was investigated. The other
14 being, as I recall, some shielding problem. And we
15 discussed those just very generally and he said they
16 needed to be reported and I said, well, fine, do them --
17 I said do them in the normal course of business, and,
18 so, he did.

19 Q Did your discussion ever touch on perhaps the
20 fact that other matters they were going to report may or
21 may not be reportable but that they might turn out to be
22 that way after further information was gathered? Was
23 there any discussion along that line?

24 A I can't recall it, Mr. Chairman. Mr. Goldberg
25 is a man with great capability in terms of making

1 decisions in that area with good people working for
2 him. I certainly have no technical ability in terms of
3 understanding what needs to be reported or not. I don't
4 second guess him on those issues. We talk about them
5 and in his judgment if they need to be reported, he
6 reports them.

7 Q He did not tell you then, I take it, that
8 possibly other matters might turn out to be reportable
9 in the future?

10 A I don't recall him saying that, but I have
11 total confidence that if they did turn out to be
12 reportable, he would, in fact, report them. That's his
13 charge and he's been true to that charge.

14 Q Now, you did not discuss reportability with
15 anyone other than Mr. Goldberg or Mr. Oprea?

16 A I can't recall having any conversation with
17 anybody about that other than Goldberg and Oprea.

18 Q Turn to page 5, lines 7 and 8. You state that
19 your opinion concerning B&R's ability to perform, I want
20 to focus on that, as construction manager was not as
21 positive. What did you have in mind there when you talk
22 about construction management as distinguished from
23 engineering?

24 A Just that it's more of a generic term I guess
25 in my mind than a specific term. The way I view

1 construction management is the ability to take the
2 engineered plans and get them into the field and get
3 them constructed in an orderly manner, the ability to
4 manage the sequence of installation of equipment and
5 come out to a finished point of having it done properly
6 and in the correct sequence.

7 Q In your view, does construction management
8 involve any quality assurance responsibilities or
9 duties?

10 A I think it clearly has to be done correctly
11 and well and I would say it would have some
12 responsibility in terms of that.

13 Q So that when you state your opinion that B&R
14 was not as positive with regard to construction
15 management as, say, construction itself, would that have
16 carried over to your opinion of them to carry out a
17 successful QA program or any aspect of a QA program?

18 A The QA program had been analyzed pretty
19 thoroughly in the show cause hearings that had taken
20 place and there had been some difficulties in that. But
21 I felt at that time that those had been addressed in a
22 way that had been satisfactory to Brown & Root and to us
23 and to the Nuclear Regulatory Commission. So, while it
24 was clear in my mind there had been some difficulties
25 within the past, I felt that the QA problem was, in

1 fact, much improved.

2 Q So that when you mentioned construction
3 management here, you're not really referring to the QA
4 aspects of that?

5 A I was referring to the ability to get the
6 finished drawings and to provide the, as I view it at
7 least, being a non-technical person, the transition
8 between taking the drawings and managing the movement of
9 those drawings in some sort of systematic way to get
10 them into the field and getting the construction done in
11 a sequence that causes everything to come together
12 properly and at the right time.

13 Q Were you aware at the time or are you aware
14 now that quality assurance programs do extend to the
15 design area?

16 A Yes, I understand that they do extend to
17 there. It certainly was not in my mind at the time I
18 was testifying. I thought we were talking about quality
19 assurance as it applied to construction. But I do
20 recognize that anything done on one of these nuclear
21 power plants has to be done with quality as a first
22 consideration and that's the way we attempt to approach
23 it.

24 Q Turning to page 6, line 21, and it also comes
25 up on page 8, line 19. Can you pinpoint when the first

1 time it was that you suggested, you or HL&P suggested
2 that Brown & Root hire a senior nuclear executive who
3 reported directly to B&R's president?

4 A Yes, sir. Mr. Chairman, we had suggested at
5 various levels in the organization that some highly
6 skilled and experienced people be brought in
7 previously. But at the time that, as I recall, this
8 first suggestion was made for a man to report directly
9 to Tom Feehan was at the April the 10th meeting in
10 Corpus Christi. After that meeting Jerry Goldberg
11 sketched out what he felt would be an organization that
12 would work well in the Brown & Root operation to have
13 this man report directly. He sketched this out and he
14 talked to some of his people. And I went over to see
15 Tom Feehan with that sketch and suggested that in
16 following up the verbal discussions that we had had at
17 the April the 10th meeting, that this is a graphic type
18 of description on how it might work. The way you
19 structure your organization down below it, you know, is
20 somewhat up to you, but it ought to report directly to
21 you.

22 As I stated before, Tom never shied away from
23 the suggestion of hiring a top nuclear man in the
24 organization. The difficulty that we had in making this
25 mesh exactly was he preferred not to have him report

1 directly to his office.

2 (No hiatus)

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1 Q (By Judge Bechhoefer) I see. So when did you
2 first find out that Brown & Root was not going to
3 implement your suggestions, at least in the manner that
4 you had suggested?

5 A They started almost immediately looking for
6 this high level nuclear executive; making inquiries
7 around, and had several interviews in Houston, in search
8 of this man. And they were very close to the hiring one.

9 We were discussing this in the last part, later
10 parts of April and the first part of May, in terms of
11 negotiating, not really negotiating, just discussing how
12 the reporting chain may take place.

13 As I said earlier, I guess while I thought Mr.
14 Goldberg's suggestion was a very good one, that I think
15 he felt a little stronger about it than did I. I thought
16 if they were to bring this man in and if they had some
17 rational reason for doing it somewhat different than our
18 sketch was, and if they could show that it would work
19 actually as well or better, then I would perhaps have
20 been agreeable to it.

21 So I wasn't hung up quite as much on the idea
22 of saying he had to report directly to Feehan, if in fact
23 the other controls were taken care of in some other way.

24 Q Well, at the point I referred to on Page 8,
25 where you said you weren't prepared to search for

1 alternatives until you were in a position to evaluate the
2 potential effectiveness of the steps being taken by B&R,
3 it seems to me that B&R was rejecting sort of the center
4 piece of your suggestion, your earlier suggestion.
5 Weren't you somewhat skeptical about whether the steps
6 taken by B&R would work, whether they fell short of
7 really meeting the centerpiece of HL&P's previous
8 suggestion?

9 A He really had never said that he absolutely
10 wouldn't do it, and we were still negotiating with him
11 about the merit of doing it. His preference -- and
12 probably that decision firmly wouldn't have been made
13 until such time as the selection had actually taken place
14 as to who he hired.

15 His preference was to have one of the people he
16 was familiar with, and who he knew well, as a cushion
17 between him and the nuclear man.

18 Our preference was to have this man who was
19 going to assist him in terms of knowing his way around
20 and have him over in a side assistant slot. It's a
21 matter of drawing sometimes squares on a piece of paper.
22 You can draw it one way and a corporate organization it
23 may actually work a different way.

24 So we were still in the process of negotiating
25 that. And I had not concluded that we could not work out

1 something that would be satisfactory when we got that man
2 on board.

3 Q Well, what crucial event happened to make -- to
4 cause the decision to be made in your late June meeting,
5 the June 26th --

6 A The crucial event, Mr. Chairman, in my mind,
7 was, as we pressed for some preliminary judgment in terms
8 of what production was going to be at South Texas at that
9 particular meeting. And when -- and they had hired a new
10 man who I thought was very good in terms of being
11 accurate on what he -- what his projections were.

12 He'd come from a power plant down in Florida,
13 and his reputation was good and he had made a good
14 impression on me. And he had not -- he had only been
15 with Brown & Root a short period of time as one of the
16 new people they were bringing in to cause their
17 organization to be stronger.

18 And he stood up and made this prediction, that
19 we'd get three percent in the next six months and six
20 percent in the next 12 months, a total of 18 -- I mean 9
21 percent progress in 18 months. That was such a -- that
22 was such a low number as a target when Brown & Root had
23 been falling short of those targets, and in fact did in
24 the next -- the next two months following that, for July --
25 for June and July, made less than a half a percent.

1 I think one of the months they made only two
2 tenths of one percent and the other month maybe one tenth
3 of one percent, that that clearly told me that if you're
4 ever going to look at an option to make a change, now is
5 absolutely the time to do it; there's not any reason to
6 go through 18 months and then decide to do it, because
7 surely things are going to change during that period of
8 time. Now is the time to do it.

9 And I left that meeting, which lasted over half
10 a day, with the full determination in my mind that that
11 was -- that now was the time to do it. And I went back
12 and told Mr. Oprea to call the meeting for Goldberg and
13 Barker and we met three days later on the 29th.

14 I called them in and I said, "Okay, now is the
15 time we've got to think about doing something on this
16 project. What is each of your opinions?"

17 And they each gave me their opinions and it was
18 unanimous that now was the time that we ought to start
19 looking at our options and we started looking at them the
20 next day.

21 Q At that meeting, were you adding the nine
22 percent to the 60 percent which was reportedly done or to
23 a lesser figure which -- from CCANP Exhibit 79, there's
24 several figures in there. I guess I asked you some
25 questions about that yesterday, but would that nine

1 percent have been added to the 50 to 52, or would it have
2 been added to the 60, or how would that work?

3 A Mr. Chairman, I don't remember what it was
4 added to, but it really didn't make any difference.
5 Whatever you would add it to, it wouldn't be
6 satisfactory. I don't remember what base we're talking
7 about at the time of that meeting. But that's -- we
8 could not go forward with that kind of projection.

9 Q Was there any discussion at that meeting about
10 why the -- or how the 60 percent figure which you were
11 apparently -- or which apparently was reported to you,
12 how it got that way, how it got that high?

13 A Are you talking about that early 60 percent?

14 A Yes.

15 A Oh, that 60 percent complete on engineering.

16 Q Yes.

17 A Yeah, that's what had been reported, I suppose,
18 at that meeting as of the end of May the 31st, because we
19 had had the meetings sometimes toward the end of the
20 month so we could have the numbers from the prior month
21 put together and we could look at them.

22 At that time, there were some changes in the
23 scope that were going to take place. I think I talked
24 about this -- maybe talked about this sheet yesterday.

25 Q Yes, you did.

1 A That some changes in scope were going to take
2 place and some of their manhours were off. And as I
3 recall it, we didn't have confidence that that percent
4 complete was going to hold.

5 Q Did you have some discussion about where the
6 weaknesses were in that 60 percent?

7 A I would guess we probably did. As I said, the
8 meeting lasted for, as they normally do, for over half a
9 day. And there are maybe 25 people who are there. The
10 principals and the management committee and the architect
11 engineers. So I'm sure there had to be something come up
12 about it. I don't recall.

13 Q Was there any discussion to the effect that
14 Brown & Root was intentionally trying to overstate what
15 they reported as being complete?

16 A No, I don't think -- I don't think there was
17 any discussion on that.

18 JUDGE SHON: That's strange, because I notice
19 point two specifically mentions Brown & Root had
20 overreported quantities installed.

21 THE WITNESS: Yes, that's -- but the word I
22 zeroed in on that was "intentionally."

23 JUDGE SHON: I see.

24 THE WITNESS: And I don't know that we've ever
25 accused Brown & Root of intentionally trying to do some

1 of these things. I think some of the plans they made and
2 some of the projections they made and some of the ways
3 they reached their conclusions turned out not to be
4 valid.

5 MR. AXELRAD: Mr. Chairman, before you turn to
6 next question, we've been going for over an hour
7 and-a-half. Would this be an appropriate time to take a
8 break?

9 JUDGE BECHHOEFER: It's an appropriate time for
10 a break, although I don't have too much more to go. Why
11 don't we take a break -- or would you prefer a break
12 before you have redirect?

13 I say would you prefer a break before you had
14 redirect.

15 MR. AXELRAD: Would you prefer to go on?

16 THE WITNESS: I just as soon go on.

17 JUDGE BECHHOEFER: I'm fairly close to being
18 through. I only have a couple more questions and I had
19 thought you might want to have a break before redirect.

20 Q (By Mr. Bechhoefer) Turning to Page 7, Answer
21 10, just to clarify one thing. Back in 1980, you
22 mentioned you had some discussions with Bechtel and
23 EBASCO.

24 A Uh-huh.

25 Q Did you have discussions with any other

1 company?

2 A No, sir.

3 Q As far as you were aware, no other company had
4 expressed an interest to you in taking over any portion
5 of the responsibilities?

6 A And the Bechtel and EBASCO people didn't
7 initiate that with me either. That was initiated by me.
8 I knew both those organizations and I respected them;
9 EBASCO had done a lot of work for us and I knew Harry
10 Rintz as a man who had led the Bechtel Power Corporation,
11 who had built a lot of nuclear power plants, so I
12 initiated those two meetings.

13 I met with Mr. Rintz in Chicago at an EEI
14 meeting and I talked to Bob Sherman who was chairman of
15 EBASCO by telephone. He was in New York; I was in
16 Houston.

17 Q But as far as you were aware, no companies such
18 as Stone & Webster or a number of others had ever
19 expressed an interest to you in taking over portion of
20 the project?

21 A No, none had -- none had and these two didn't
22 initiate that, either. --

23 A Page eleven, line 16 and 17, you said that you
24 had not received any suggestion that Quadrex report and
25 factors concerning the adequacy of B&R's engineering

1 effort were QA/QC matters. Did you receive any
2 suggestions or have any discussions with others about --
3 anyone other than Mr. Goldberg, about the QA/QC aspects
4 of the Quadrex report?

5 A No. I talked to Mr. Goldberg and Mr. Oprea
6 about it that day. And QA/QC question didn't come up
7 relative to it, in terms of whether or not there was any
8 problem there.

9 Q Did you mention that aspect of it in any of
10 your conversations with the attorneys you were consulting
11 around that period of time?

12 A No, sir. I really had, Mr. Chairman, very
13 little conversation about the Quadrex report at all
14 during that period of time.

15 Q One final question. Before you testified
16 previously, were you advised by your attorneys to keep
17 your answers as narrow row as possible, not to volunteer
18 anything, sort of like the military?

19 A I've heard that most of my life in terms of
20 that is the best way to give testimony; I'm sure my
21 attorneys are not very satisfied with me as a witness
22 because I normally am not very good at doing that. They
23 did not tell me that prior to the time I testified, back
24 in 1981. But the first time I ever testified, I was told
25 that. And I know that's generally what lawyers

1 recommend. But they don't give me much advice anymore.

2 JUDGE BECHHOEFER: That's all. Do you have any --

3 JUDGE SHON: I have one comment, one
4 observation, and that is, Mr. Jordan, that your memory
5 and your grasp what's happened in the past is certainly
6 exemplary. I was amazed at the fact that even before you
7 saw the exhibit, that was your notes for the meeting that
8 you commented on, you had already used several of the
9 phrases therein, apparently just from your memory.

10 THE WITNESS: Well, you know, I've been saying
11 things like "best people in the world" for a long time,
12 and still use them.

13 Mr. Chairman, would it be -- would it be out of
14 order if I were to make a comment to you that I think you
15 might be interested in hearing.

16 JUDGE BECHHOEFER: Not at all.

17 THE WITNESS: Fine. I think as a matter of
18 company philosophy, Mr. Chairman, that the Houston
19 Lighting & Power Company attempts to have a very open
20 relationship with the Nuclear Regulatory Commission and
21 the people who work with us. And I'd like to call some
22 examples of that to you as to what we're doing in some of
23 this area.

24 We have stayed very close to John Collins who
25 previously was the administrator in Region IV and Bob

1 Martin who now has that job; we not only have visited
2 there with them on a regular basis, from the standpoint
3 of management, Mr. Oprea, Mr. Goldberg and myself, I took
4 the effort, made the effort, which wasn't a strong
5 effort, but I did it, to go up and talk to Mr. Collins
6 one time alone without telling anybody in our
7 organization about it, just for the purpose of having him
8 to communicate anything to me that he might choose to if
9 it involved any of our individuals who worked on the
10 project, that would give him an opportunity to say to me
11 anything privately that he might want to say.

12 In addition to that, we have invited Mr.
13 Collins to come down and visit with our entire board of
14 directors; he did that.

15 Immediately after Mr. Collins was replaced by
16 Mr. Martin, we invited him to come down and visit with
17 our entire board of directors, and he did that. Simply a
18 general meeting not talking about any of the specifics on
19 South Texas at all, but with the idea of having them
20 understand that if there's ever an issue about South
21 Texas that they choose to communicate directly with our
22 board of directors rather than to go through anybody
23 who's in management of our company, myself or anyone
24 else, that they have a free reign to do that.

25 In addition to that, we have the South Texas

1 Project as a standing item own our board of directors
2 adgenda each month and we meet the first Wednesday of
3 each month.

4 Mr. Goldberg briefs our entire board on the
5 status of South Texas and he certainly will be briefing
6 them the first Wednesday of August about the progress of
7 this report -- this meeting as well as other things.

8 We have a committee, a nuclear committee of our
9 board, which that nuclear committee follows more closely
10 the progress of South Texas than does the entire board
11 and they make individual reports to the board. We felt
12 that we didn't have enough nuclear expertise on our board
13 of directors and so at our last annual stockholders
14 meeting which took place the second Tuesday in May, we
15 elected to the board a man who perhaps you know. His
16 name is Joe Henry. He used to be chairman of the old
17 Nuclear Regulatory Commission. And we did so so that the
18 board would have its own ability to understand and get
19 that kind of description from directly.

20 Mr. Henry was also named chairman of the
21 nuclear committee. That nuclear committee under his
22 direction is now meeting monthly in conjunction with the
23 time frame right around our regular board meeting. We
24 have four members of our board who is on that committee.
25 And so we've made it a point to try to communicate as

1 directly and as well with the NRC as we can and try to
2 keep not only the top management of our company by our
3 entire board acquainted with what's going on with the
4 project.

5 That type of involvement, I think, is one that
6 will allow us to keep those lines of communications open,
7 and it's the philosophy of our entire board of directors
8 as well as my own that the way to get this project
9 completed and cause it to operate for the next 30, 35 or
10 40 years, is to have that kind of relationship with the
11 Nuclear Regulatory Commission. It's Jerry's instruction
12 from the board as well as from me to communicate with the
13 board any issue that might come forward on South Texas,
14 very quickly, to the NRC.

15 For example, he and I have been to Washington
16 to ask the NRC to conduct their next CAT review on an
17 accelerated basis rather than to put it off, because if
18 there are any problems with the project, it's to our
19 advantage to find them out as early as possible to get
20 those corrected. So I think you'll never find us being
21 diligent -- I mean being less than diligent in terms of
22 trying to get those issues before the NRC as quickly as
23 we can get them to the NRC because it is certainly to our
24 individual and corporate, to our customer's and our
25 stockholder's, advantage to do that.

1 I don't know whether that's helpful or not but
2 I thought I'd add that. Thank you.

3 JUDGE BECHHOEFER: Why don't we take a fifteen
4 minute break.

5 (Recess.)

6 (No Hiatus.)

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1 JUDGE BECHHOEFER: Back on the record.

2 I'm not sure, did the record reflect whether
3 you had any redirect?

4 MR. AXELRAD: I assume that our redirect would
5 follow after any further questions that the parties might
6 have based upon the board's questions.

7 JUDGE BECHHOEFER: It usually doesn't. Because
8 the parties have further cross-examination rights on any
9 redirect; usually it follows the Board questioning.

10 MR. AXELRAD: Okay. We do not have any
11 redirect based upon the Board's questions, or upon the
12 previous questions.

13 JUDGE BECHHOEFER: It can be based on
14 cross-examination.

15 MR. AXELRAD: Or based upon previous
16 cross-examination.

17 JUDGE BECHHOEFER: Okay, Mr. Sinkin.

18 DON JORDAN,
19 testified further upon his oath as follows:

20 CROSS EXAMINATION

21 BY MR. SINKIN:

22 Q Mr. Jordan, at the time you testified in Phase
23 I, you were aware, were you not, that the competence --
24 that competence and character were also issues before the
25 Atomic Safety and Licensing Board?

1 A Yes, that's correct.

2 Q And those issues applied first of all to HL&P.
3 Is that correct?

4 A They did apply to us, that's correct.

5 Q But given that HL&P had responsibility as the
6 construction permanent holder for the activities of Brown
7 & Root, the character and competence issues also applied
8 to the performance of Brown & Root. Is that correct?

9 MR. NEWMAN: I object to that question, Mr.
10 Chairman. It has no foundation in the prior Board
11 questions. I ask counsel to identify what specific Board
12 question addressed that matter.

13 JUDGE BECHHOEFER: In any event, I thought our
14 Phase I and Phase II issues dealt with character and
15 competence of the Applicants, not of their contractors as
16 such.

17 MR. SIMKIN: Mr. Chairman, I believe there were
18 various rulings throughout the Phase I proceedings that
19 the competence of Brown & Root reflected on the
20 competence of HL&P because of their oversight
21 responsibilities.

22 We went into such things as the scheduling
23 ability of Brown & Root.

24 MR. NEWMAN: You have my objection, Mr.
25 Chairman.

1 JUDGE BECHHOEFER: Well, can you explain what
2 question of the Board, because you are limited to Board --
3 Board questions.

4 MR. SINKIN: What I'm doing, Mr. Chairman, is
5 the Board had raised the issue of -- well, in the course
6 of questions and answers, the issues were raised as to
7 what was the subject of the Phase I hearings. Mr. Jordan
8 said his view was the subject of the Phase I hearings was
9 construction and quality assurance for construction. I'm
10 taking that a step further to say but weren't the issues
11 also character and competence.

12 MR. NEWMAN: Judge Lamb asked quite specific
13 questions as to -- in the context of material at pages
14 1224 to 1251 and if Mr. Sinkin can point to something in
15 those pages that raises a comparable question to the
16 Board's questions, then there's something to follow up
17 on. Otherwise, there is not. The general subject matter
18 and scope of this proceeding is not raised the Board's
19 questions.

20 MR. SINKIN: Well, at page 1225, there's a
21 whole discussion about the fact that the issue that Mr.
22 Jordan has to get before this body is the character and
23 competence of the utility. That's Mr. Gay speaking at
24 the time.

25 MR. NEWMAN: That's counsel's statement, that

1 is not Mr. Jordan's testimony.

2 MR. SINKIN: That was counsel speaking as to
3 why Mr. Jordan should answer his question and the chair
4 upheld that.

5 MR. NEWMAN: You have to understand that
6 counsel don't testify. Lawyers don't testify. Witnesses
7 testify.

8 MR. SINKIN: On occasion.

9 It will take me just a moment, Mr. Chairman.

10 JUDGE BECHHOEFER: I think at least based on
11 what we've heard now, that the objection will be
12 sustained.

13 MR. SINKIN: I'd like a moment just to review
14 the transcript.

15 JUDGE BECHHOEFER: We might add that judge
16 Lamb's question was based purely on why the Quadrex
17 report was not mentioned

18 MR. NEWMAN: That's correct, Mr. Chairman.
19 That's what my notes show.

20 MR. SINKIN: It's an obvious relationship, in
21 my mind, when a question like that is raised as to
22 whether the competence of Brown & Root was called into
23 question by the Quadrex report.

24 MR. NEWMAN: The question obviously related to
25 whether the Quadrex report should or should not have been

1 mentioned at that point. It was quite specific. I think
2 Judge Lamb made that very clear to the witness and my
3 notes indicate that the witness responded directly to
4 that question.

5 MR. SINKIN: I want to deal with this argument
6 that it's counsel testifying, not witness testifying.

7 MR. NEWMAN: May have a ruling on that --

8 MR. SINKIN: No, Mr. Newman --

9 MR. NEWMAN: I believe I have a ruling. Is the
10 Chair reconsidering the ruling?

11 JUDGE LAMB: No.

12 MR. SINKIN: The Chair was giving me time to
13 review the transcript.

14 MR. NEWMAN: The Chair had ruled, it was
15 sustained.

16 MR. SINKIN: He said at this time if you don't
17 have anything further, we would uphold the objection and
18 I said may I have time to look at the transcript and they
19 granted me that time. From the transcript, Mr. Chairman,
20 it's obvious Mr. Jordan is asked a question about these
21 consultant reports. Mr. Newman, objects repeatedly to
22 the questions; the counsel says that the reason that they
23 are relevant is that the competence of Brown & Root is at
24 issue here and the Board on that basis says fine, Mr.
25 Jordan should answer the question. So obviously, Mr.

1 Jordan was answering these questions in the context of
2 the Board ruling that competence was at issue.

3 MR. NEWMAN: Mr. Chairman, my point is exactly
4 the same. Judge Lamb's question was quite specific, it
5 related to why the Quadrex report should or should not
6 have been mentioned at that point in the testimony, the
7 witness' answer was to that effect, the question was no
8 broader the response was no broader and I ask again I
9 object and ask for another ruling.

10 MR. SINKIN: The question

11 JUDGE BECHHOEFER: Judge Lamb's question was
12 not having anything to do with the competence of Brown &
13 Root. It had to do with why the Quadrex report wasn't
14 mentioned in that series of --

15 MR. SINKIN: Which is the essence if you read
16 this part of the transcript, it was the essence of what
17 was going and why the questions were answered by the
18 witness.

19 JUDGE BECHHOEFER: In any event, your last
20 question did not go into my matters as to which Judge
21 Lamb asked a question. So with respect to your last
22 question, we will up hold the objection. Move on, I
23 guess.

24 Q Mr. Jordan, at the time of your testimony cited
25 by Judge Lamb, you were answering questions concerning an

1 engineering discrepancy that had happened in Brown &
2 Root's original representation to HL&P versus what was
3 actually completed. Do you remember that that was the
4 question at issue?

5 A An engineering discrepancy.

6 Q The amount of engineering they said had been
7 completed was far more than than actually been completed?

8 A Just where are you.

9 Q It's a little difficult since there's so many
10 objections in this section to get you exactly on point
11 but I will try. Let's start, page 1229, at line six, in
12 the question and answer.

13 A Okay.

14 Q In terms of the problem of engineering
15 productivity by Brown & Root, was the Quadrex report in
16 your view also about engineering productivity of Brown &
17 Root?

18 A It was about the effectiveness of Brown &
19 Root's ability to turn the engineering out. So if you
20 want to use "productivity," perhaps it would be a part of
21 that.

22 Q Was the Quadrex study an attempt to monitor the
23 activities of Brown & Root and provide feed back to HL&P
24 on the nature of those activities?

25 A It was an attempt to benchmark the engineering,

1 the engineering effort, as to where it was and to
2 determine the effectiveness of their ability to produce
3 it.

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1 Q I think of the word benchmark as something
2 that Bechtel did when they came onto the job.

3 A Well, you know, if you don't want to use that
4 word, we can use a different one. It was an effort by
5 Mr. Goldberg to find out exactly where the engineering
6 was and that was the purpose of having it done.

7 Q Well, all areas of engineering were not looked
8 into by Quadrex; is that correct?

9 A I don't know.

10 Q HL&P was -- was HL&P receiving in 1981 monthly
11 reports about the progress of Brown & Root in the
12 engineering area?

13 A Yes, I think so.

14 Q Was Quadrex called in to see if those monthly
15 reports were accurately reflecting the amount of
16 completed engineering?

17 A Quadrex was called in, as I say, to determine
18 where the engineering was and determine whether or not
19 they were going to be able to perform that engineering
20 task. If you want to say were they called in to go back
21 and check those previous reports, I don't think their
22 assignment extended to that.

23 Q I guess I was getting more at if you were
24 receiving monthly reports on the progress of
25 engineering, why you would hire someone to come in and

1 give you a report on the progress in engineering?

2 A To give Mr. Goldberg the assurances that those
3 reports were accurate or whether or not there were some
4 things he might be able to do to do it differently. I
5 don't think the test went back to the report. I don't
6 think the assignment went back to the report. I think
7 the assignment was to give Mr. Goldberg some additional
8 insight into where that engineering was from an outside
9 party.

10 Q Was the Gibbs & Hill report mentioned in your
11 testimony in these pages similar in purpose to the
12 Quadrex report?

13 MR. AXELRAD: Mr. Chairman, I believe that the
14 witness' attention should be given to the specific page
15 where that appears.

16 MR. SINKIN: Certainly.

17 MR. REIS: Mr. Chairman, I have another
18 objection. The ability to cross-examine on those pages
19 was, of course, in the last hearing. It was only for
20 the limited purpose that Judge Lamb used those that
21 examination can now be made. And from the last question
22 it seems that -- I don't know whether we're getting into
23 a general recross-examination on those pages of that
24 testimony given on May 14th or whether we're dealing
25 with what Judge Lamb dealt with today. But it appears

1 to me that we're trying to cross-examine again on what 12198
2 happened May 14th, 1981, I believe.

3 MR. SINKIN: No. On May 14th, 1981, we had no
4 knowledge of the existence of the Quadrex report, so we
5 could not have asked him to compare the Quadrex report
6 to the Gibbs & Hill report. That's what I'm asking him
7 to do now.

8 MR. NEWMAN: Mr. Chairman, I submit that that
9 question is clearly irrelevant.

10 MR. SINKIN: Well, that question is clearly
11 relevant, Mr. Chairman. If the Gibbs & Hill report was
12 a similar report to the Quadrex record and he mentioned
13 the Gibbs & Hill report but didn't mention Quadrex, it's
14 obviously probative to some extent of whether or not he
15 should have mentioned Quadrex.

16 Q (By Mr. Sinkin) Mr. Jordan, while they're
17 conferring --

18 MR. NEWMAN: No. Are you on the record?

19 MR. SINKIN: I was going to give him the pages
20 in the record to look at, that's all.

21 MR. NEWMAN: Okay.

22 Q (By Mr. Sinkin) Transcript pages 48 and
23 forward.

24 JUDGE BECHHOEFER: On that last question, we
25 will overrule the objection on that one.

012198

1 Q (By Mr. Sinkin) I'm sorry. I think I started
2 you too early -- I mean too late. Gibbs & Hill first
3 arises on page 1246, line 20.

4 A There is something about it on line 1 on 12 --
5 oh, 1246?

6 Q 1246, line 20 and forward.

7 A Okay.

8 Q Let me particularly direct your attention to
9 page 1247, line 4.

10 A Okay.

11 Q Now, my question was was the Gibbs & Hill
12 report similar in purpose to the Quadrex report?

13 A I think the Gibbs & Hill report was quite
14 different than the Quadrex report. As I recall it, the
15 Gibbs & Hill report was one that was produced to
16 determine whether or not the project had an opportunity
17 to meet the cost and schedule through construction and
18 completion that had been set for it. And the Quadrex
19 report was not like that at all.

20 Q Was one of the purposes of the Quadrex report
21 to determine if the assumptions HL&P was making about
22 Brown & Root's engineering productivity were, in fact,
23 good assumptions?

24 A I don't know what assumptions we may have been
25 making at that time. You know, I tried to describe to

1 you what I thought the purpose of that Quadrex report
2 was and that was with Mr. Goldberg being newly in that
3 assignment, he wanted an outside appraisal as to where
4 engineering was.

5 Q Was that in part -- I think you've already
6 testified that you got these monthly reports, but this
7 new study gave you a different perspective at least on
8 the engineering productivity. You discussed that
9 earlier, the monthly reports on engineering which you
10 got.

11 I assume from -- let me ask you, is it from
12 those monthly reports that you would base -- on those
13 monthly reports would you base your assumptions about
14 how far you were getting and how much you had to go?

15 A You mean in terms of whether you were on or
16 not on schedule?

17 Q Just in terms of your assumption about what
18 schedule you were on, was that based on those monthly
19 reports?

20 A Monthly reports measured against the
21 schedule.

22 Q The monthly reports actually had a here's
23 where we're supposed to be, here's where we are kind of
24 element to them?

25 A I don't know if they were done that way then

1 or not. They're done that way now.

2 Q But through some means, from those monthly
3 reports you could determine whether you were on
4 schedule?

5 A They should have been able to track some sort
6 of schedule by the monthly report or at least attempt
7 to.

8 Q When you were preparing to give this
9 testimony, Mr. Jordan, when you were --

10 A In 1981?

11 Q 1981.

12 A Uh-huh.

13 Q What did you do to prepare yourself for the
14 potential cross-examination that goes on in this
15 testimony?

16 MR. NEWMAN: Mr. Chairman, I'll object to that
17 question. It has no relevance to any Board question.

18 MR. SINKIN: Mr. Chairman --

19 JUDGE BECHHOEFER: Which question are you
20 tying that to?

21 MR. SINKIN: My notes reflect that you asked
22 questions about discussions with attorneys regarding how
23 his answers would be given and about receiving any
24 suggestion or have discussions with any others about the
25 QA/QC aspects of Quadrex and whether he consulted with

1 attorneys at that time. And he gave certain answers
2 about what his discussions were with the attorneys at
3 that time. I was following up on that. .

4 MR. NEWMAN: The Board's question, as I
5 understand it, was whether or not Mr. Jordan had
6 conferred with attorneys regarding whether or not to
7 mention the Quadrex report during his testimony. If
8 that's the point that counsel is coming back to, then
9 fine. The general question of Mr. Jordan's preparation
10 to appear on May 14th, 1981, has no other basis.

11 JUDGE BECHHOEFER: I think your question is a
12 little broad.

13 MR. SINKIN: Broad.

14 JUDGE BECHHOEFER: But --

15 Q (By Mr. Sinkin) You've testified that you did
16 not talk to attorneys about whether to mention Quadrex
17 or not mention Quadrex, is that correct --

18 A Yes, that's right.

19 Q -- prior to may 14th? I'm sorry, I --

20 A That's correct.

21 Q Did you review the testimony of other
22 witnesses to see if they had mentioned Quadrex?

23 A I read the testimony of some other witnesses,
24 but I didn't do it for the purpose of seeing whether
25 they had mentioned Quadrex.

1 Q When you were discussing with the Board the
2 relationships between Houston Lighting & Power and Brown
3 & Root, you brought up the problem of the order to show
4 cause and you stated that Brown & Root and HL&P pulled
5 together very well to work on responding to the order to
6 show cause. You went on to say that engineering was
7 very involved in responding to the order to show cause.
8 Do you remember that?

9 A I don't think I said that. I think I said
10 that as a result of that pulling together and the
11 intense effort that had to be put into the show cause
12 effort, that it was clear that some of the other
13 production that may have normally taken place probably
14 had to suffer a little during that time.

15 Q That the engineering production --

16 A Engineering was one of those.

17 Q Why did the engineering production suffer in
18 order to respond to the order to show cause?

19 A Well, I don't know everybody at Brown & Root
20 who was involved in the show cause effort, but I know it
21 was very, very broad and that people in the leadership
22 of that organization were devoting a great deal of their
23 time to the show cause. And if the leadership of an
24 organization devotes a great deal of time to something
25 that's unusual and different from their normal course of

1 business, then it's going to have an effect on their
2 operation that reports up through that area.

3 Q Are you saying that the leadership was
4 involved in responding to the order to show cause but
5 the line engineers were not?

6 A You know that's not what I said. I said I
7 don't know who all was involved in it. There were a
8 great number of people who were involved in it. I know
9 the leadership was, as well as a large number of the
10 others, and I can't give you a definition of who they
11 were.

12 Q Did you have anything more?

13 A No.

14 Q In response to a question about whether you
15 discussed reportability with any other attorneys other
16 than the licensing attorneys, you stated that you had
17 talked to Mr. Goldberg and Mr. Oprea, you didn't recall
18 talking to anyone else. And in response to the
19 particular findings, you said that you were generally
20 familiar with the HVAC problem when it was brought to
21 you; is that correct?

22 A We had had some discussions about -- it seems
23 to me we'd had some discussions about that HVAC problem
24 at that time. I know we've been talking about it an
25 awful long time. I don't believe that's the first time

1 I'd heard about it.

2 Q Do you remember at all what the conversations
3 were about prior to May 11th when you were briefed on
4 Quadrex as to what the problem was with HVAC?

5 A I can't give you any specific dates that we
6 had those conversations really, whether it was before or
7 after. But we changed contractor on it. We did a
8 variety of things on HVAC.

9 Q Do you know what the particular problems were?
10 Were they productivity problems? Were they too small
11 duct problems?

12 A You would have to go into those kind of
13 details with Mr. Goldberg. He's very familiar with it.
14 He probably could answer any question you can think to
15 ask.

16 Q I understand Mr. Goldberg will be very
17 familiar witness. What I'm asking is what your
18 knowledge was with the problem.

19 A No, I'm not knowledgeable with the details of
20 it.

21 Q You talked about the management chart that was
22 drawn at the April 10th meeting showing the nuclear
23 executive reporting directly to Mr. Feehan that I guess
24 Mr. Goldberg drew, but he gave it to you and then you
25 went and talked to Mr. Feehan about it?

1 A That's correct.

2 Q At that meeting?

3 A Yes.

4 Q Can you describe to me --

5 A I guess Mr. Goldberg drew it. It was a
6 hand-drawn chart and he gave it to me, so you can ask
7 him whether he drew it.

8 Q Okay. You got it from Mr. Goldberg then.

9 MR. AXELRAD: I'm not sure I understand the
10 question.

11 MR. SINKIN: I haven't asked a question.

12 MR. AXELRAD: No, the preliminary that the
13 management chart was drawn and discussed at the April 10
14 meeting or whether the management chart was drawn and
15 discussed after the April 10 meeting?

16 Q (By Mr. Sinkin) April 10. He drew the
17 chart --

18 A No, then that's wrong. I thought you were
19 talking about the meeting I had with Feehan later than
20 April the 10th when I discussed with him the chart.
21 Jerry drew the chart subsequent to the April 10 meeting,
22 as I recall it. We had the April 10th meeting. We
23 talked about doing this. Jerry drew the chart. I took
24 it over to Tom. In a very short time frame.

25 Q That's more or less the way you had

1 testified. And my impression was this all took place at
2 the April 10 meeting, but that's not correct.

3 A No. The April 10th meeting was in Corpus
4 Christi. My meeting with Tom Feehan was in his offices
5 over on Clinton Drive in Houston.

6 Q Do you remember the date? Are we very close
7 to April 10th? You said it was a fairly short time
8 frame.

9 A No, I don't know the date. There wasn't too
10 much time that expired in there. It could have been a
11 couple of weeks.

12 Q Can you describe to me in a little more detail
13 the nature of the chart? Are we talking about three
14 boxes? Are we talking about fifteen boxes?

15 A There were a few more boxes than three and
16 probably not as many as fifteen. But it showed -- it
17 showed the general -- it showed Tom Feehan at the top
18 level with the current reporting top level people like
19 Mr. Pieper and others, as I recall, who were drawn in
20 there running nuclear activity coming up through them
21 and there was not much detail below those top people.
22 It had a chief executive vice-president or a
23 vice-president or some title, senior vice-president,
24 some title nuclear executive reporting directly to Mr.
25 Feehan.

1 Q Was that then drawn off to the side as opposed
2 to within the structure that existed?

3 A No, it was within the structure.

4 Q It was added into the structure that existed?

5 A Well, it was a modification of the existing
6 structure that had the nuclear people, such as Mr.
7 Saltarelli. He was already reporting through somebody
8 else, he would then report through the new nuclear man
9 or at least somebody in that block would report to him.
10 Whether it was Saltarelli or not doesn't make any
11 difference.

12 Q Were there any other modifications to that
13 management chart other than the addition of this person?

14 A Not that I can recall. That was the primary
15 purpose of doing it. The purpose was not to restructure
16 the Brown & Root organization. As you well know,
17 they're a very competent and productive worldwide
18 organization that builds a lot of things very well. We
19 had no business talking about that at all.

20 Q In response to questions from the Board, you
21 were making it -- you gave them a clarification that you
22 did not intend to say that Brown & Root had
23 intentionally misrepresented the amount of engineering
24 completion. Do you remember that?

25 A Yes. I said I didn't think -- I didn't know

1 that we'd ever made a statement that they had
2 intentionally done that.

3 Q In this period of April-May 1981, did you
4 believe that Brown & Root was being honest and
5 forthright with Houston Lighting & Power?

6 A I believe that Brown & Root was making the
7 best effort they were capable of making or at least
8 believed they were making the best effort they were
9 capable of making, but that effort in our judgment
10 wasn't satisfactory.

11 Q I don't know that that's directly responsive
12 to my question.

13 A Okay. I'm sorry. Would you ask it again?

14 Q Yeah. Did you believe that Brown & Root was
15 honest and forthright with HL&P, whether or not they
16 were having problems, whether or not they were trying
17 hard, in their representations --

18 A Are you saying did I believe they were
19 intentionally misrepresenting things to me that they
20 didn't believe?

21 Q As a general observation, were they honest and
22 forthright with you?

23 A I don't believe they were representing things
24 to me differently than what they thought.

Q So, if they were wrong, it was in their own

1 mind they were wrong as well?

2 A That's my thought. Now, whether that's
3 accurate or not, I don't know.

4 Q Did you ever discuss with your top level
5 staff, Mr. Oprea or Mr. Jordan, as to whether they
6 perceived Brown & Root as being honest and forthright
7 with Houston Lighting & Power?

8 MR. AXELRAD: Mr. Chairman, I wonder whether
9 this particular line of examination is stemming from the
10 questions that the Board has asked? It appears to me
11 that it's straying quite far from the questions that
12 were asked at the time.

13 MR. SINKIN: I specified that at the very
14 beginning for the Board, clarified for the Board that he
15 was not intending to say Brown & Root had intentionally
16 misrepresented engineering completion. I'm taking that
17 opinion of their engineering completion and getting the
18 broader picture of did he ever feel they were being
19 dishonest or less than forthright with the company at
20 that time.

21 MR. AXELRAD: I'm not sure I understand the
22 basis for counsel or the representative of CCANP being
23 able to broaden any questions that the Board has asked.
24 It seems clearly his questioning should be limited to
25 the precise matters that the Board inquired about.

1 MR. SINKIN: We're in one of those situations,
2 Mr. Chairman, where if all I can ask are the questions
3 that the Board asked, there would be no reason for me to
4 be here.

5 MR. AXELRAD: Within the scope of what the
6 Board asked. And if you had any questions beyond that,
7 you could have asked those when you had your opportunity
8 to cross-examine.

9 MR. SINKIN: The Board has raised the issue of
10 whether Brown & Root intentionally misrepresented the
11 engineering completion. Mr. Jordan has said he didn't
12 believe they intentionally misrepresented it. I'm
13 trying to get at was his approach at that time -- what
14 was his attitude at that time that he didn't believe
15 they intentionally misrepresented. Had they previously
16 misrepresented? Did he believe they were not still
17 misrepresenting or did he have no history of them
18 misrepresenting?

19 JUDGE BECHHOEFER: The subject of the Board's
20 question was either engineering completion or
21 construction completion as reflected in the figures on
22 CCANP 79. That was the basis for the Board's question.
23 I think we shouldn't expand beyond those general subject
24 areas.

25 MR. SINKIN: But the answer given raised this

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1 issue.

2 MR. NEWMAN: No, it did not, Your Honor. The
3 answer given simply responded directly to the Board's
4 question as to whether there was an overstatement in
5 engineering or construction productivity. The witness
6 responded he did not think that there was any
7 intentional overstatement at that time, I zeroed in on
8 that matter.

9 MR. SINKIN: Well, Mr. Newman has relatively
10 accurately quoted my notes. I have it I don't believe
11 we accused Brown & Root of intentionally doing these
12 things.

13 MR. NEWMAN: The Board's question related
14 specifically to statements regarding engineering
15 production or may have included construction
16 production.

17 JUDGE ECHHOEFER: Well, I was referring to a
18 cross-reference to a document that did have
19 construction. But it did not go farther and was not
20 intended to.

21 I would be -- I don't think it would be fair
22 to ask the witness whether he knew of some misstatement
23 concerning some particular aspect of the project not
24 related to the progress of engineering or construction.
25 So, the questions will -- I don't recall your exact last

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1 question, but at least to the extent I've indicated, the
2 objection would be sustained.

3 Q (By Mr. Sinkin) Mr. Jordan, in your closing
4 comments you spoke of a nuclear committee --

5 A Yes.

6 Q -- that had been created at HL&P. Was there
7 such a committee in 1981?

8 A I don't believe so. I can't recall the exact
9 date we established it, but I don't believe it existed
10 then.

11 Q Were the board of directors -- one of the
12 functions of this nuclear committee I believe you said
13 is it includes four board members; is that correct?

14 A Yes, all outside the regulars.

15 Q And it's a way for the board to be informed
16 about what's going on on the project?

17 A The board as a whole gets informed through a
18 standing agenda item on the board each month. That
19 report is made to the board by Mr. Goldberg or by the
20 chairman of the committee.

21 We also have outside people coming in talking
22 to the board about this project. As I said, both Mr.
23 Collins and Mr. Martin have come in. But the board
24 meets -- the nuclear committee meets separate from the
25 board and goes into some of these issues in more detail

1 than does the full board.

2 Q What was the mechanism in 1981 for the board
3 to be informed of events at the project?

4 A It was through regular reports to the board,
5 to the full board without the existence of a nuclear
6 committee.

7 Q Were you the one that made those reports?

8 A Mr. Oprea normally was the one who made those
9 reports.

10 Q To your knowledge, in 19 -- in the period May
11 7, 1981 to, let's say, August 30th, 1981, that would be
12 the June, July and August board meetings, was the board
13 ever told about the Quadrex report?

14 A I can't tell you that for sure. They well may
15 have been, I just don't know.

16 Q Do you remember a particular board meeting at
17 which the Quadrex report was discussed --

18 A No.

19 Q -- in September of 1981? Do you know at what
20 point in the month those board meetings would have been
21 going on? Beginning of the month, end of the month?

22 A First Wednesday of every month.

23 Q The first Wednesday of every month. Then
24 let's skip to October 1981, the first Wednesday. Was
25 the board informed about the Quadrex report at that

1 time?

2 A What would be the reason to specifically on
3 that date inform them? You know, I don't know why
4 specifically on October the 1st, 1981, we would have
5 been talking about the Quadrex report as opposed to any
6 other time.

7 Q Isn't it true, Mr. Jordan, that in September
8 of 1981, the Quadrex report was released to the NRC,
9 formally to this Board and became a matter of front page
10 articles in the newspapers?

11 A I don't recall it being a front page article
12 in the newspaper. It may well have been. That is the
13 date it was released to the Board. The Board requested
14 it and we gave it to them.

15 Q Not front page, extensive publicity about
16 Quadrex that appeared in the meeting?

17 MR. NEWMAN: Mr. Chairman, I'll object to
18 that. This is really getting astray. We've got to get
19 the examination back onto the subject matter of the
20 Board questions and the witness' responses. We are just
21 wandering all over the matter as to what page the
22 articles were on. That's not what this hearing is
23 about.

24 MR. REIS: Mr. Chairman, I have another reason
25 why I believe it is beyond the scope. I don't remember

1 anything that dealt with that light. We are dealing
2 with the Quadrex report and whether it should have been
3 brought to the Board's attention prior to when it was.
4 Now, if we go to October 1st, that's after it was.
5 That's not within the issues. For that reason, it's not
6 relevant.

7 MR. SINKIN: Well, I was trying to refresh the
8 witness' memory as to when the Board might have been
9 first informed about Quadrex.

10 MR. PIRFO: Are you talking about the board of
11 directors at HL&P?

12 JUDGE SHON: One of the issues here is the
13 fact that there is a board and another the Board and I
14 think people are getting confused.

15 Q (By Mr. Sinkin) So the record is clear, I
16 trust, Mr. Jordan, we were both talking about the board
17 of directors of Houston Lighting & Power?

18 A That's what I understood.

19 JUDGE SHON: And I think what you were trying
20 to establish was whether the board of directors at HL&P
21 found out about the Quadrex report before, after or when
22 the Atomic Safety and Licensing Board did; is that
23 right?

24 MR. SINKIN: Yes. That time frame. That's
25 all the question was about.

1 A Okay. And I can't answer your question as to
2 when that may have been an item discussed by our board.
3 I just don't remember.

4 Q (By Mr. Sinkin) Mr. Jordan, I'm going to hand
5 you a document that I'd ask be marked as CCANP 83.

6 MR. SINKIN: For some reason I'm very short of
7 copies. Let me give you this for the moment and ask you
8 to share that with Judge Lamb.

9 Oh, here they are.

10 Q (By Mr. Sinkin) Mr. Jordan, in response to
11 questions from the Board, you outlined the chronological
12 sequence of meetings that took place as to who was
13 informed when about the decision to remove Brown & Root
14 from architect engineer and construction manager. And
15 you mentioned that on September 12th, you and Mr.
16 Goldberg and Mr. Oprea had briefed the participants in
17 the South Texas Nuclear Project on that decision.

18 I have handed you a document titled
19 Discussions Among STP Participants Regarding Replacement
20 of Architect/Engineer and Construction Manager, dated
21 September 22nd, 1981, that says at its first line, "At
22 1:00 o'clock p.m. on September 12th, 1981, the following
23 representatives of the participants met to discuss this
24 subject," and it lists who was there.

25 A Right.

1 Q I'd like to give you a chance to review this
2 document.

3 MR. SINKIN: I have attached at the back, for
4 some reason that I cannot now imagine, the rough notes
5 from which the document was generated. I'm not sure
6 there's any need for those to be on there.

7 As a matter of fact, I think Mr. Chairman,
8 just to avoid any problem with this document later, I
9 would remove the notes at the back of this document. I
10 don't think they're really necessary to the document at
11 all.

12 That would be the same document beginning on
13 the page that has a number at the bottom which I can't
14 read, so --

15 JUDGE BECHHOEFER: Are the first set of pages
16 what you want in?

17 MR. SINKIN: The first set of pages I want
18 in. Starting at the eighth page of the document, I
19 think you can just rip that off the back and we'll
20 ignore it.

21 (No hiatus)

22
23
24
25
012218

1 THE WITNESS: Is there something specific about
2 this you'd like to --

3 Q (By Mr. Sinkin) Certainly.

4 A You want to ask me -- it's seven pages long.
5 Rather than ask me to read the whole part, ask me a
6 question and I'll read the portion that's appropriate.

7 Q First of all, just in what you have had a
8 chance to read, does this appear to be the minutes of the
9 September 12 meeting that you attended?

10 A I don't remember who wrote them. But it looks
11 like somebody wrote them.

12 Q On Page 3, Mr. Jordan, the second full
13 paragraph starting, "Mr. Jordan inquired"?

14 A Okay.

15 Q In deciding whether to replace Brown & Root in
16 all capacities or only as architect engineer and
17 construction manager, were the opinions ventured on
18 September 12th, that are recorded here a significant
19 factor in your decision not to remove Brown & Root as
20 constructor?

21 A No. I think we'd already decided -- we will --
22 I know we'd already decided to ask Brown & Root to stay
23 as constructor. These are the kind of questions I'm sure
24 you can understand get asked in a general discussion of
25 trying to get all the information you can get in terms of

1 knowing the path that you're going to travel. We'd
2 already decided at that time, at least Houston Lighting &
3 Power Company had decided, that our position would be to
4 keep them as a constructor and the others agreed.

5 Q Did you have any plan at all for what would
6 have happened if the management committee had said no?

7 MR. NEWMAN: Mr. Chairman, I object to that
8 question. I have a couple of -- let a couple of
9 questions go on this. Clearly the response that Mr.
10 Jordan gave was in response to the Chairman's request
11 regarding chronology of events generally associated with
12 Mr. Jordan's discussion with Mr. Feehan early September.

13 The Chairman, I think, inquired about the
14 discussions on or about September 18th or 24th; Mr.
15 Jordan, as I recall, gave the chronology so that the
16 Board would have a full understanding of the chronology.

17 The Board did not inquire as to the substance
18 of any matter in any of these specific meetings. The
19 question is clearly outside the scope of the Board
20 questions.

21 MR. SINKIN: Mr. Chairman, in asking questions
22 about CCANP 79, the Board asked whether the original plan
23 to replace Brown & Root as -- whether the original plan
24 was to replace Brown & Root as architect engineer but
25 retained as contractor.

1 Mr. Jordan's answer was that consideration was
2 given to replacing Brown & Root on all parts of the
3 plant. The RFP indicated to him that they had decided to
4 keep Brown & Root at that time on construction, although
5 the RFP said they might drop them from that, that's his
6 answer.

7 That's what raises this question about how the
8 decision was made, to keep Brown & Root as architect
9 engineer and -- I mean as constructor and release them
10 from the architect engineering and construction
11 management responsibilities.

12 MR REIS: Mr. Chairman, I don't know how it
13 relates to the issues in this proceeding. Either -- and
14 I must say go back to the Board question and say even, I
15 did not rush in and object to the Board question, but I
16 really don't understand.

17 The question is -- there is a question here.
18 Did HL&P, should they have come forward earlier and told
19 the Board about Brown & Root and the substitution of
20 Brown & Root.

21 But really going into the details on
22 constructor or architect engineer or what, I don't
23 understand why that's probative of the issues before this
24 Board.

25 The issues before this Board is: Did they

1 perform their duties of coming to you early enough. But
2 why are these details probative? And I don't understand
3 why they're probative.

4 MR. SINKIN: Mr. Chairman, we're trying to
5 provide in the record a complete picture of the process
6 that took place from the very beginning of a
7 consideration to remove Brown & Root to when the event
8 actually happened. The Applicants in their own pleadings
9 have repeatedly argued that it was because of where the
10 process was and how the process was being conducted that
11 there was no need for Mr. Jordan or any of the other
12 witnesses to inform the Board about what was going on in
13 terms of Brown & Root being on the project or off the
14 project.

15 I saw in this document a possibility of filling
16 in a tiny gap in that decision making process, where Mr.
17 Jordan had originally testified that they were going to
18 replace them in all, we thought that's what the RFP said.
19 And then it turned out it said -- not that they weren't
20 going to replace them in construction; I thought this
21 highlighted why this decision might have been made and
22 that's what I was asking him.

23 MR. NEWMAN: Again, I submit that does not, in
24 any way, relate to the purpose of the Board's request and
25 clearly can't possibly be material to any issue before

1 the Board.

2 The Board is concerned about the chronology of
3 its information; the level -- as Mr. Sinkin would put it,
4 to close a tiny gap. I think in and of itself he's not
5 talking about anything that's material to this
6 proceeding.

7 MR. SINKIN: Well, if there are gaps in the
8 record, it certainly is material to the proceeding.

9 MR. NEWMAN: There's some gaps that are
10 material, Mr. Sinkin, and some that are not.

11 MR. SINKIN: Our position is this is one that
12 is.

13 JUDGE BECHHOEFER: Without expressing any
14 general ruling on the entire document, we will up uphold
15 the objection to that matter on Page 3, which does go
16 beyond the scope of either my particular question or
17 several other questions I asked about the subject matter
18 of the proceeding.

19 Q (By Mr. Sinkin) Mr. Jordan, in discussing with
20 the Board about the keeping of Brown & Root as
21 constructor, you were asked why you felt Brown & Root
22 should be kept as constructor. And you testified that
23 Brown & Root could do the job, that they had talented
24 construction company personnel who could do the job, and
25 the second point you made, I believe, is it would

1 simplify the transition if they weren't removed from
2 everything. Is that correct?

3 A Yes.

4 Q Calling your attention to CCANP 80, do you have
5 that document before you?

6 A Yes, I do.

7 Q And these are the notes you prepared for your
8 September 18th meeting with Mr. Harbin of Halliburton?

9 A Correct.

10 Q Looking on the first page to Item 4, Item 4
11 states: "Grave errors in construction."

12 A 2-C-4.

13 Q 2-C-4, I'm sorry.

14 A Okay.

15 Q States: "Grave errors in construction." It
16 has a Star by it. Out in the margin it says, "Perhaps
17 worst," exclamation point, underlined.

18 A Right.

19 Q Was it your view that Brown & Root had made
20 grave errors in construction?

21 A From the standpoint of what had taken place in
22 the QA, in the show cause order, is what I had in mind.
23 That had caused us to close the project down for awhile
24 and cost us some time and other things.

25 Q As of September 18th, 1981, was there

1 significant construction -- well, let me start -- order
2 to show cause comes out, construction at the project on
3 major safety related items essentially stops. Is that
4 correct?

5 A Yes, as I remember it.

6 Q And that's April, May, 1980.

7 By September 1981, had Brown & Root done any
8 significant amount of safety related construction at the
9 project?

10 A By September 1981? I think it had been started
11 but I can't tell you how much may have been done. Mr.
12 Goldberg can tell that you.

13 Q I realize he can. I'm just trying to see what
14 was in your mind when you were writing this.

15 A I'll tell you what was in my mind. I was
16 writing it, telling them that why we felt the decision
17 had been made. If you'll go back up to No. C, which is
18 the headnote of that, then I tried to go down through
19 this to provide an explanation to him, as to why we were
20 going forward with this decision.

21 Q Isn't it true that by September 1981, only a
22 very limited amount of restart had actually taken place
23 at this project?

24 MR. NEWMAN: That's been asked and answered and
25 is otherwise irrelevant, both grounds.

1 Q (By Mr. Sinkin) Let me ask a separate question
2 then, Mr. Chairman. What was it you saw between May 1908
3 or April 1980 when the order to show cause came out and
4 September 1981, that convinced you that Brown & Root was,
5 as of September '81, not going to commit the grave errors
6 that had been committed that led to the order show show
7 cause.

8 MR. REIS: I object, that's beyond the scope of
9 this hearing. What we're dealing with here, I take it,
10 is did they have an obligation to inform the Board prior
11 to the time they did of the removal of Brown & Root or
12 that they were thinking of removing Brown & Root and was
13 any of the testimony earlier misleading in any way. The
14 reasons for removing Brown & Root are irrelevant. And
15 he's going back and rehashing everything between the
16 order to show cause to the time of 19 -- September 1981.
17 This clearly is beyond the scope of this hearing and
18 beyond the scope of the Board's questions as well.

19 MR. SINKIN: I do have a response. I mean if
20 you're prepared to overrule the objection, I don't need
21 to. But I do have a response.

22 JUDGE BECHHOEFER: Well, you can respond.

23 MR. SINKIN: Okay. The problem with this kind
24 of objection is if the Board raises a matter in their
25 questions that may or may not have been outside the

1 scope, I don't think this is outside the scope of this
2 hearing. Mr. Reis does. But setting that aside for a
3 moment, as to whether or not it is outside the scope, if
4 the Board raises a matter in its direct questions and the
5 witness gives an answer and then I am precluded from
6 crossing on that answer because suddenly the question is
7 outside the scope, we're being denied a fundamental right
8 here and that is to be able to cross-examine the witness
9 on his answer to the Board's questions.

10 It gives the witness carte blanche to answer the
11 Board however he wants, if they can get the question
12 declared later outside the scope.

13 JUDGE BECHHOEFER: Well, the Board's question I
14 think I asked was whether any crucial, particular event
15 happened in a particular period of time which caused the
16 company to decide to terminate Brown & Root. I think
17 that's a little bit different from your --

18 MR. SINKIN: I'm looking at a different
19 question you asked. The question you first asked was the
20 original plan to replace Brown & Root as architect
21 engineer but retain them as contractor.

22 He responded by saying they gave consideration
23 to replacing them on all fronts. But the RFP later only
24 called for removing them as architect engineer and
25 contractor. You then asked why did you keep them as

1 contractor. He said they thought Brown & Root could do
2 construction work, they had a broad talented construction
3 company and also it would simplify the transition if they
4 didn't remove them from everything.

5 JUDGE BECHHOEFER: Would you repeat your
6 question? Your question wasn't within the scope of my
7 question but the one you just referred to was within
8 Judge Lamb's question.

9 MR. SINKIN: Was that Judge Lamb's question,
10 excuse me. Yes, you were asking questions about CCANP
11 79, Judge Lamb. The question was asked why keep them,
12 certain answers were given as to why they were kept. I
13 am now bringing up the subject that suggests there was
14 reason not to keep them, that they for some reason did
15 not make a significant part of their decision apparently.
16 I'm trying to get the full picture on why they decided to
17 keep them. That would involve reasons why they might not
18 have kept them as well as reasons why they would keep
19 them.

20 MR. REIS: Mr. Chairman, that's exactly my
21 point. Why is not material to this proceeding. It's
22 when. And when they did, they were late telling or in
23 any way mislead the Board. Why is not material. We're
24 going into why; we're re-trying what we tried before or
25 expanding the issues very, very greatly. Why is not

1 material.

2 MR. SINKIN: Mr. Chairman, I think why is
3 material but I would return to my earlier concern, that
4 if a member of the Board does ask a question like why
5 keep them, and there is no objection to the question from
6 any party and it is answered and then we are precluded
7 from cross-examining on that answer, then we're being
8 denied something very fundamental.

9 JUDGE BECHHOEFER: I think we'll overrule the
10 objection.

11 MR. SINKIN: Thank you.

12 MR. NEWMAN: May I have the question read back,
13 please.

14 (The last-above question was read back
15 by the reporter.)

16 THE WITNESS: Are you ready for answer?

17 Q (By Mr. Sinkin) Yes.

18 A I think I described to you that many of the
19 things that Brown & Root had done during that period of
20 time to bring additional experience into their area and
21 to prepare themselves to handle that job better, that was
22 one thing.

23 We would, in addition, have someone with great
24 experience in construction management who would be
25 working along with them on the project and they convinced

1 me that the combination of those things would cause them
2 to be successful in it.

3 Q The one you referred to was that Jerome
4 GoldgerG; is that who you were referring to?

5 You said someone with great experience in
6 construction management --

7 A We were talking to several people about the
8 possibility of taking that over as indicated in the RFP.

9 Q You are talking about the new company that was
10 coming --

11 A We were also doing more in our organization as
12 well.

13 MR. SINKIN: That's all I have, Mr. Chairman.

14 MR. PIRFO: Mr. Chairman, would you indulge us
15 for a moment, please.

16 JUDGE BECHHOEFER: Mr. Sinkin, do you plan to
17 do anything about CCANP 83?

18 MR. SINKIN: Im going to leave it right where
19 it is for the moment, Mr. Chairman.

20 MR. REIS: Mr. Chairman, was that even marked
21 for identification, 83 was?

22 JUDGE BECHHOEFER: Yes.

23 MR. REIS: No, the staff has nothing.

24 MR. NEWMAN: We have nothing, Mr. Chairman.

25 JUDGE BECHHOEFFER: Mr. Jordan, I'm going to ask

1 you a question that I really was going to save for Mr.
2 Oprea, but this -- would you look at CCANP 83 for
3 identification? --

4 THE WITNESS: Is that this last one?

5 JUDGE BECHHOEFER: Yes.

6 THE WITNESS: Okay.

7 JUDGE BECHHOEFER: The first page, the bottom
8 of the second full paragraph, there's a statement, last
9 sentence says that, "Mr. Oprea reported that the NRC was
10 leaning in the direction of a decision that the Quadrex
11 report required a 55 (e) report by HL&P on an" and I put
12 it in quotes, "'engineering control breakdown,' under
13 Criteria 7."

14 Was there any discussion of that subject at
15 that meeting, beyond just the fact that Mr. Oprea may
16 have reported it?

17 THE WITNESS: No, sir, there wasn't. I didn't
18 recall that he made this statement and would have --
19 would have said, had I not read it, that it wasn't
20 brought up at all, in my memory at that particular
21 meeting. So I would guess that you would have to get him
22 to expand on it, but it probably was a simple report that
23 was made; it was certainly not a part of our overall
24 discussion.

25 JUDGE BECHHOEFER: All right. Well, I had

1 intended to wait until he got here to ask him anyway.
2 But I just thought since you were here and the document
3 was brought forth, I'd just ask you. Anybody else have
4 anything?

5 That's all the questions the Board has. Any --
6 anything -- any re-redirect or whatever it is?

7 MR. NEWMAN: No, sir.

8 MR. REIS: The staff has none. However, the
9 staff -- before you ask and I indicated to the Board a
10 few days ago, that I would set out the vacation plans of
11 the staff because you were looking to when you could have
12 additional hearings and I just wanted to tell you before
13 lunch that for the week of -- I guess it is --

14 JUDGE BECHHOEFER: Why don't we see if we can
15 be finished with Mr. Jordan first; we may be -- did you
16 have anything further on that one question I asked?

17 MR. SINKIN: No.

18 JUDGE BECHHOEFER: Mr. Jordan, I believe you
19 are excused.

20 THE WITNESS: Thank you, very much, Mr.
21 Chairman.

22 JUDGE BECHHOEFER: Now, Mr. Reis.

23 MR REIS: I'm sorry, I jumped the gun. But for
24 the week of August, I guess it's 12th, starting on the
25 12th, the staff has -- the staff witnesses have no

1 vacation plans, although there are vacation plans the
2 following week of one of the staff witnesses.

3 It was just that one week that we were
4 inquiring about.

5 There are no vacation plans for the staff. Now
6 let me also say that Mr. Tapia is leaving for Korea on
7 September -- August --

8 MR. SINKIN: Do we need this on the record? Go
9 ahead, go ahead, I'm sorry.

10 MR. REIS: On August 12th, I believe it is.
11 And of course he would like a few days ahead of time to
12 pack and get ready so he would like to be here certainly
13 two beginning of that week, no later than the 5th or 6th
14 of that week of August; August 5th or 6th.

15 JUDGE BECHHOEFER: We had desired to have our
16 soils testimony as close together as close as possibly.
17 We may want to block out a segment for both the
18 Applicant's and Staff cases on soils for that period of
19 time. Perhaps early the week of the fifth. We're not
20 requiring anything like that, but if it could be worked
21 out so it's close together in the record, it would be
22 desirable.

23 MR. SINKIN: Mr. Chairman, I just want to raise
24 a possibility and hope that it doesn't become a reality,
25 that the scheduling plaintiff Tapia out of sequence

1 should it interfere with the date on which we have
2 subpoenaed our witnesses to appear and changes have to be
3 made to accommodate the NRC, I hope we will in no way be
4 jeopardizing our ability to produce those witnesses.

5 JUDGE BECHHOEFER: Well, I don't see why it
6 would. If I changed a date once, I can change it again.

7 MR. REIS: I just wanted to inform the Board
8 before lunch of those matters.

9 MR. AXELRAD: We will discuss with the staff,
10 our logical or appropriate date for the testimony of both
11 our source panel and Mr. Tapia and try to schedule it on
12 a one day or two days when all the people are available.

13 JUDGE BECHHOEFER: Right. We don't have any
14 strong preference, but we would like to accommodate Mr.
15 Tapia's schedule, if we could.

16 (Recess.)

17 (No Hiatus.)

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1 JUDGE BECHHOEFER: Back on the record.

2 The Board has made some inquiries and, if
3 necessary, although we hope it isn't, this room is
4 available for the week of August whatever it is, 12
5 through 16. We would plan that if we needed to hold
6 hearings, we would do it on Tuesday through Friday.

7 MR. AXELRAD: I can't hear a word you're
8 saying, Mr. Chairman.

9 JUDGE BECHHOEFER: I say, if necessary, we
10 would plan to hold hearings on the Tuesday through
11 Friday following the -- I guess that's the 13th through
12 16th of August. So, just plan to reserve those dates in
13 case it's necessary. We hope it isn't. And we would be
14 in this same room here.

15 We will put out a general notice which will
16 say to the extent necessary, hearings will be held on
17 the following days.

18 Anything further before we resume the
19 cross-examination of Mr. Goldberg?

20 MR. AXELRAD: Yes, Mr. Chairman. Just a few
21 minor matters with respect to Applicants' exhibits.

22 As you may recall, at the end of the hearing
23 yesterday there was some question raised as to the
24 contents of Applicants' Exhibit No. 59. We have given
25 to the parties and will now give to the Board and to the

1 Court Reporter a revised version of Applicants' Exhibit
2 59 which will consist of three typewritten pages and
3 three handwritten pages.

4 Applicants' Exhibit 59 had been moved into
5 evidence by CCANP, but at this time I would move without
6 objection that the version of Applicants' Exhibit 59
7 which I have just distributed to the parties of the
8 Board and to the Court Reporter be substituted for the
9 version of Applicants' Exhibit 59 that had previously
10 been admitted.

11 MR. SINKIN: No objection.

12 MR. PIRFO: No objection.

13 JUDGE BECHHOEFER: Without objection, it is so
14 admitted.

15 MR. AXELRAD: As a result of that change,
16 however, I would like to ask Mr. Goldberg just a couple
17 of questions.

18 JUDGE BECHHOEFER: Fine.

19 MR. AXELRAD: Mr. Goldberg, if you turn to
20 page 17 of your testimony where you refer, in the answer
21 to question 24, to Applicants' Exhibit 59. Is the
22 version of Applicants' Exhibit 59 which I have just
23 distributed to the parties and to you the version that's
24 referred to in your answer 24 to question 24?

25 THE WITNESS: Yes, it is.

1 MR. AXELRAD: Do you have a change in line 7
2 of page 17 to make in your prefiled testimony in light
3 of the revision of Exhibit 59?

4 THE WITNESS: Yes, I do. In view of the
5 addition of this third page, where I refer to the second
6 page in my answer on line 7, that should be changed to
7 read third page.

8 JUDGE LAMB: What page --

9 MR. AXELRAD: That's on line 7 -- page 17 of
10 his prefiled testimony, line 7, the first line of the
11 question, the word second should be changed to third.

12 JUDGE LAMB: Oh.

13 MR. AXELRAD: I might explain that the version
14 of Exhibit 59 which I provided to all the parties has
15 substituted a new second page from what was previously
16 the first page.

17 In the course of reviewing the exhibits to
18 prepare a set to be provided to the Board, we did note a
19 couple of other corrections which we'd like to make at
20 this time.

21 MR. AXELRAD: Mr. Goldberg, turning to page 22
22 of your testimony, do you have a correction to make on
23 line 21 of that page?

24 THE WITNESS: Yes, I do. Attachment B should
25 be changed to read Enclosure (1) with parentheses around

1 the 1.

2 MR. AXELRAD: And was that simply an incorrect
3 reference to the portion of the document you referred to
4 in your testimony?

5 THE WITNESS: That is correct. The portion of
6 the document referred to in my testimony should read
7 Enclosure (1).

8 MR. AXELRAD: We have one last change to
9 discuss. If you will please turn to page 14 of your
10 testimony, Mr. Goldberg. Answer 19 of your testimony on
11 page 14 refers to Exhibit 57, Applicants' Exhibit 57.
12 Do you have that document in front of you?

13 THE WITNESS: Yes, I do.

14 MR. AXELRAD: When I introduced that -- when I
15 described that document for identification, Mr.
16 Chairman, I identified it as consisting of six
17 handwritten pages.

18 Mr. Goldberg, are the first five pages of that
19 document your notes of the Quadrex briefing of April 13,
20 1981?

21 THE WITNESS: That is correct.

22 MR. AXELRAD: Is the last page, the sixth page
23 of Applicants' Exhibit 57, also a portion of your notes
24 of that meeting?

25 THE WITNESS: No, it is not.

1 MR. AXELRAD: Could you explain what that page
2 is?

3 THE WITNESS: This page -- and apparently when
4 this page was reproduced you can see at the very bottom
5 the outline of a second page. These two documents were
6 prepared following the April 10th meeting in Corpus
7 Christi to identify the particular skills that we felt
8 Brown & Root needed to supplement on the engineering
9 team, as well as just a small portion of the
10 organization chart that I drew up for Mr. Jordan when he
11 had his subsequent discussions with Mr. Feehan.

12 MR. AXELRAD: Okay. That is all we have, Mr.
13 Chairman. We don't propose to change the exhibit, but
14 we just wanted to be sure that it was clear on the
15 record that that sixth page was not a portion of the
16 notes of the April 13th meeting.

17 At this time --

18 JUDGE BECHHOEFER: What was the date of that
19 last page? Was that the same day?

20 THE WITNESS: I believe that both of these
21 were prepared following the April 10th meeting. I know
22 that in terms of skills I had spoken in rather
23 extemporaneous terms at the meeting, but I put them down
24 on paper prior to Mr. Jordan's visit with Mr. Feehan and
25 I shared the skills with Mr. Saltarelli and I think Mr.

1 Jordan focused attention on the organization chart with 12240
2 Mr. Feehan. And I believe that that probably occurred
3 during the first week following the April 10th meeting.

4 MR. AXELRAD: And by both of these, you're
5 referring to page number 6 and the portion of some other
6 sheet which is shown on page number 6?

7 THE WITNESS: That's right. At the bottom of
8 page 6 you can see an image that apparently was another
9 piece of paper that was below it at the time that this
10 particular sheet was reproduced.

11 JUDGE BECHHOEFER: A reference to Mr. Broom
12 someplace. So, there's a brief reference to Mr. Broom
13 at the bottom, but --

14 THE WITNESS: Yes, sir, he was part of the
15 organization, too.

16 JUDGE BECHHOEFER: I realize that.

17 MR. AXELRAD: At this point we have no further
18 preliminary matters and Mr. Goldberg is available for
19 cross-examination.

20 MR. SINKIN: We have just one minor
21 preliminary matter. Do the Applicants intend to produce
22 the documents that were attached to the back here?

23 MR. AXELRAD: No, we intend to produce only
24 what we have produced as part of our direct case.

25 JEROME H. GOLDBERG,

1 having been previously duly sworn, testified further
2 upon his oath as follows:

3
4 CROSS-EXAMINATION (Cont'd)

5 BY MR. SINKIN:

6 Q Mr. Goldberg, turning in your testimony to
7 page 42, question and answer 59, you earlier had made a
8 change in that testimony at line 18 to correct the
9 testimony to say that Brown & Root had initiated a
10 reanalysis of the heat loads; is that correct?

11 A That's correct.

12 Q Why did Brown & Root initiate that analysis?

13 A Well, the original analysis I believe was
14 performed a few years earlier, and periodically as
15 information might change, these analyses have to be
16 updated. As I understand it, the environmental
17 conditions based on environmental measurements was
18 judged to be slightly different than those used on the
19 original analysis.

20 Q Are you saying that the change was detected by
21 some physical measuring of an environmental condition
22 that was then compared to what the design had been?

23 A There is an environmental monitoring program
24 for things such as ambient air temperatures, relative
25 humidity, wind, a host of parameters. And there were

1 some refinements to that data which influenced the
2 calculation.

3 Q What particular measurement was made that
4 influenced the calculation?

5 A I frankly don't recall what changes there
6 were, I just understood that there were some changes.

7 Q Then later Brown & Root subcontracted with NUS
8 to do further reanalysis of the heat loads for the
9 essential cooling pond?

10 A Yes.

11 Q Before NUS began their reanalysis, in your
12 view did the existing work of Brown & Root represent a
13 potentially reportable deficiency?

14 A No.

15 Q Why is that?

16 A Well, Brown & Root was obligated by a reg
17 guide, I believe that -- I better be careful, it may be
18 1.27, I haven't looked at the numbers lately, to perform
19 the analysis for two different types of plant
20 conditions, which they had done.

21 Now, the fact that conditions might change
22 with further research that would influence the work in
23 itself would not constitute a reportable matter. In the
24 event, however, that after you do the analysis, if you
25 find that you've got equipment that you've procured that

1 may not satisfy those conditions, then that might turn
2 out to be a reportable matter.

3 Q Wasn't it discovered that there was a serious
4 discrepancy, as much as 80 or 90 degrees, between the
5 temperature Brown & Root had used in their design and
6 the temperature that would have to be accounted for?

7 A I don't believe so, Mr. Sinkin.

8 Q Earlier you testified about the postulated
9 pipe break outside of containment that Brown & Root had
10 not yet begun. Do you remember that?

11 A Yes, I do.

12 Q The question I have is whether the reason the
13 beginning of that design is untimely is that it's out of
14 sequence, it should have been done at some earlier point
15 in the design process and things followed after it that
16 should have -- are you following? Maybe I'm confusing
17 you with my question.

18 There's a certain sequence, I assume, in which
19 designs are carried out in nuclear power plants, certain
20 systems are designed before other systems; is that
21 correct?

22 A There are certain sequences that clearly are
23 more efficient than others, yes.

24 Q And the lag time of three or four years in
25 doing pipe break outside containment, was that a problem

1 of not being in the appropriate place in the sequence?

2 A I think I commented earlier that it was just
3 plain late.

4 Q What I'm really trying to get at, what is late
5 about it? I mean, it can be late just because people
6 think you should have gotten to it earlier. It can be
7 late because there is a sequence in which things should
8 be performed and other things had already been done
9 which should have followed after that.

10 A I believe it was late in the context that they
11 should have gotten the work started years before.

12 Q But not that it was out of sequence?

13 A No.

14 Q Turning in your testimony to page 44, answer
15 65. You state at line 20, "The TRD was in draft status
16 and still undergoing review."

17 By May 7th of 1981, in your view should that
18 TRD have been beyond draft status?

19 A Well, in the context of where the power plant
20 was, it wasn't necessarily out of sequence. The place
21 where this particular consideration is very important
22 has to do with the anchor associated with where main
23 steam and feedwater lines penetrate the main steam
24 isolation valve cubicle. That structure was in an
25 extremely early stage of construction. They had not

1 reached the point where they had designed in the anchors
2 for those two lines. As a matter of fact, that was the
3 major technical area that Brown & Root was still sorting
4 out.

5 Q Was the construction in an extremely early
6 stage because they had not yet sorted out this problem?

7 A I think that there's no question that the
8 details of the reinforcing steel for that structure did
9 depend on getting this particular area sorted out. And
10 it was clearly one of perhaps other issues that had to
11 be resolved before they could complete the design of the
12 reenforcement for that structure.

13 Q Do you have some insight as to why Brown &
14 Root had not successfully -- had not progressed as far
15 as they should have on the design of these anchors?

16 A I think that there is no question that Brown &
17 Root had not progressed very far in the design of many
18 areas and this was just one of them.

19 Q Well, any particular reason that you can give
20 why this particular -- I mean, it seems to me there
21 might be different reasons as to why they hadn't
22 progressed in many different areas. Do you have any
23 insight as to why they hadn't progressed in this area?

24 MR. AXELRAD: Mr. Chairman, I'd like to object
25 to this line of questioning. The issue again before

1 this Board is whether or not this particular finding
2 should have been reported. And the answer indicates
3 that the particular document was of draft status and had
4 not yet been prepared. Now, why Brown & Root was
5 delayed in preparing this particular document if, in
6 fact, it was delayed, does not appear to us to be
7 probative of whether or not the condition as it exists
8 on May 7 should have been reported.

9 MR. SINKIN: Well, Mr. Chairman, the condition
10 as it exists on May 7th is what Quadrex was looking at
11 and that's -- it is precisely why the condition that
12 existed on May 7th existed that would lead you to decide
13 whether it was potentially reportable or not to some
14 extent. Obviously, the finding itself has relevance and
15 the reason for the finding has relevance.

16 Mr. Chairman? If I -- I think maybe an
17 illustration would help you. If I said to Mr. Goldberg
18 why wasn't this design further along and he said because
19 an engineer got angry, took the drawings home and burned
20 them and those were the only drawings we had of that
21 system, we might have a serious quality assurance
22 problem there. And the fact the design hadn't been done
23 might we will be a notifiable event.

24 JUDGE BECHHOEFER: I'm not sure that would be
25 something at issue without putting in a new contention.

1 MR. SINKIN: No, but what I'm saying is --

2 JUDGE BECHHOEFER: I'm trying to fit it into
3 the contentions --

4 MR. SINKIN: What I'm trying to say is whether
5 the conditions that Quadrex found on May 7th, 1981 were
6 potentially reportable, part of the way you determine
7 that is ask why did that condition exist.

8 MR. AXELRAD: Mr. Chairman, if I can add, I
9 think that Mr. Sinkin has himself explained through his
10 example why his arguments are not valid. But if we
11 could focus on the finding itself, the finding itself
12 deals not with why Brown & Root was at a particular
13 stage of design, but a specific statement with respect
14 to the Brown & Root assumptions that existed in whatever
15 Brown & Root had done. And the answer explains that it
16 wasn't reportable because it was just a draft document.

17 Now, whatever the reasons might have been for
18 getting to that stage and whatever other QA deficiencies
19 Mr. Sinkin might think have existed or might have been
20 able to prove in a different proceeding if a different
21 proceeding dealt with the adequacy or inadequacy of
22 Brown & Root engineering is not an issue here. The
23 issue here is is that particular finding -- should that
24 particular finding have been reported back on May 7th.
25 And the type of questions Mr. Sinkin is getting into are

1 completely irrelevant to that finding or to the reason
2 given by EL&P for not reporting that finding.

3 MR. SINKIN: Maybe I'll --

4 MR. AXELRAD: I let Mr. Sinkin ask a question
5 or two because it's simpler just to do that than to
6 object, but we do have to in this proceeding make sure,
7 we have a lot of findings to go through, a lot of things
8 to explain, that we not stray beyond what the issue is
9 with respect to that particular finding.

10 MR. SINKIN: Maybe I'll ask a couple
11 preliminary questions where we can get at a possible
12 basis for this question.

13 Q (By Mr. Sinkin) Mr. Goldberg, if you
14 discovered that the design and engineering program was
15 being conducted out of sequence the way we discussed it
16 earlier, would that be a matter that would have quality
17 assurance implications?

18 MR. AXELRAD: May I have an explanation of
19 what "out of sequence as we discussed it earlier" means?

20 MR. SINKIN: Mr. Chairman --

21 MR. AXELRAD: There were a number of questions
22 asked, there were a number of answers given by the
23 witness. I'm not sure which out of sequence discussion
24 we're talking about.

25 Q (By Mr. Sinkin) Mr. Goldberg, do you remember

1 our conversation about what constituted designing
2 something out of sequence?

3 A I think I characterized a day or two ago that
4 clearly if you haven't performed an activity at all and
5 you thought you were completed with your work and then
6 you uncovered after the fact that lo and behold you had
7 totally ignored some design feature that was needed for
8 the power plant, if by testing that situation you were
9 to determine that it either, if left uncorrected,
10 constituted an adverse impact on safe plant operation or
11 it was of a systemic character and therefore it could
12 constitute a significant breakdown in quality assurance,
13 that you would have the makings of something reportable
14 and clearly it's out of sequence. I think I remember a
15 discussion of that character.

16 Q I was really referring to about four minutes
17 ago you and I were talking about the pipe break analysis
18 outside of containment and whether that was out of
19 sequence.

20 A I remember, Mr. Sinkin, we had a conversation,
21 but it escapes me what out of sequence you're referring
22 to.

23 Q All right.

24 MR. AXELRAD: My recollection is the witness
25 did not say it was out of sequence, he said it was

1 late.

2 MR. SINKIN: That was his answer to the
3 question, but the question was was it out of sequence.
4 We obviously had a concept in front of us we were
5 dealing with.

6 Q (By Mr. Sinkin) Mr. Goldberg, can you
7 conceive of any deficiency that exists only in a draft
8 document which could lead to a potentially reportable
9 item or which -- I should not say it could lead.

10 Can you conceive of any deficiency in a draft
11 document which would be a potentially reportable item?

12 A Yes, I can.

13 Q So, the mere fact that a document is a draft
14 does not rule out the possibility it contains
15 potentially reportable items?

16 A Certainly if one were to take what's called a
17 draft document and use it with the belief that it is
18 conservative and construct a safety-related device which
19 upon further subsequent development is shown to be
20 technically inadequate, and that failure to have
21 detected this problem would have constituted the
22 requisite tests for reportability, then that would be
23 reportable.

24 If it's not a normal reiterative program and
25 you undertook a risk and you didn't classify it as a

1 known risk and it wasn't of the character that is normal
2 to design development, that could be a case where it
3 would be reportable. But it would be very essential to
4 reach the point where that information was used to
5 construct the plant. If that information is just
6 sitting on an engineer's desk awaiting further
7 deliberation, the mere fact that it's not final and it
8 may not be correct in itself is not reportable.

9 Q Would you ever use a TRD that was still in
10 draft form for construction?

11 A I think we have to get more specific than
12 that. I think there are certain areas where that might
13 be appropriate.

14 Q Is it possible that while Brown & Root was on
15 the job April-May 1981, that they would have used one of
16 their draft TRD's for construction?

17 JUDGE BECHHOEFER: Mr. Sinkin, can you change
18 the word possible to anything else? Anything is
19 possible.

20 MR. SINKIN: Well, I think I'd like to first
21 establish that it's simply not impossible.

22 MR. AXELRAD: Mr. Chairman, I'll object to
23 that question anyway. I don't see what the relevance of
24 a general question of that type can have to this
25 proceeding.

1 We have specific discipline findings and
2 generic findings which are at issue in this proceeding.
3 Mr. Sinkin has been trying through some of the earlier
4 questions to obtain from Mr. Goldberg some explanation
5 of how draft documents may or may not sometimes be
6 used. But to then go on to a generic question with
7 respect to whether or not that could possibly have
8 happened could not be of any probative value in this
9 proceeding.

10 MR. SINKIN: Mr. Chairman, I think the flow of
11 it is very clear. I asked about a specific document,
12 the conditions of a specific document as to why that was
13 reportable or not reportable. That was objected to, so
14 I said I'd try some foundation questions. My first set
15 of foundation questions dealt with whether draft
16 documents could be used for construction. The answer
17 was yes. The second question was could TRD's in draft
18 be used for construction. The answer was possibly might
19 be appropriate. The third question was would you
20 expect, I'll word it that way, would you expect to find
21 Brown & Root using draft TRD's for construction. I
22 think there's a logical flow here towards where I'm
23 going.

24 MR. AXELRAD: There is certainly not a logical
25 flow with respect to the cross-examination which began

1 with respect to finding 4.7.3.1(k) with a statement in
2 the answer that begins that the design was not released
3 for construction. And I fail to see how the relevance
4 of whether or not any other draft TRD in any other
5 situation may or may not have been released for
6 construction or used for construction can have any
7 relevance to the explanation of this finding.

8 MR. SINKIN: I'm getting at the bases that Mr.
9 Goldberg is giving for why this was not potentially
10 reportable. I am trying to get some foundation
11 questions in. We will then get to the specific things
12 that are in this finding.

13 JUDGE BECHHOEFER: Just a second.

14 JUDGE SHON: I guess the difficulty here seems
15 to be that you made an effort to ask a question that I
16 think then had changed in the answer in a sense. I
17 think Mr. Sinkin really meant to ask you whether it was
18 possible that a draft still undergoing review could
19 reveal a significant breakdown in QA. Your answer had
20 been a draft that's still undergoing review could only
21 represent a reportable circumstance if, in effect, it
22 had been used for construction without knowing that it
23 was simply a draft. Isn't that correct?

24 THE WITNESS: And if -- I think the context of
25 the answer, as I recollect it, was that if you issued

1 for construction a document by whatever character you
2 wish to call it which contained an error and resulted in
3 a situation which would be reportable, then clearly that
4 situation would be reportable.

5 JUDGE SHON: But there is another horn to the
6 dilemma, so to speak, or another edge to the sword in
7 that I think Mr. Sinkin was trying to visualize a TRD
8 which is in draft and which has some sort of error in
9 it, but which represents a significant breakdown in
10 quality assurance. Can you envision such a thing?

11 THE WITNESS: I guess in my mind if we're
12 talking about work that is still under development and
13 if one were to take a photograph at a point in time
14 before the development is completed and conclude it
15 contains a potential error, that that in itself doesn't
16 in my mind make the case for something reportable in the
17 context of a quality deficiency. The engineering
18 process goes far beyond just capturing a segment of it
19 and looking at it and saying I see a problem without
20 regard to what other things are going to have to go on
21 before that product is finalized.

22 Apparently this whole area -- the context of
23 this particular question addressed an area which Brown &
24 Root was still in the pioneering stage. They had not
25 sorted out technically how they were going to handle

1 this anchor problem because it was related to pipe break
2 outside containment. They hadn't even addressed the
3 pipe break outside containment. They didn't know what
4 the loads were.

5 And at that point in time, as I understand it,
6 they had a rule, I call a rule of thumb that many
7 engineers were using back in the seventies that if one
8 treated rigorously the loads on the safety-related side
9 of the anchor and then doubled those loads, that that
10 was an adequate accountability for what was happening on
11 the non-nuclear side of the anchor. Engineers came to
12 find out that that wasn't always true, that one had to
13 go to at least one anchor beyond that anchor to ensure
14 that you quantified those loads. And they may or may
15 not be just double. Sometimes it might be more than
16 double.

17 I think that there's no question that Brown &
18 Root would not have failed to find that out because they
19 hadn't gotten to that point in time. At the risk of
20 sounding immodest, I was on the project and Quadrex had
21 reported to me that this was an area that they hadn't
22 properly sorted out. There's no question in my mind it
23 would have been sorted out long before it got released
24 for construction.

25 JUDGE SHON: Does that sufficiently restrict

1 the answer and sum it up for you, Mr. Sinkin?

2 MR. SINKIN: It's very helpful, Judge Shon,
3 very helpful.

4 Q (By Mr. Sinkin) Did Quadrex find any
5 engineers involved in this seismic to non-seismic
6 boundary anchor design group who were aware that the
7 doubling of the load was not an appropriate technique?

8 A I don't really know. The fact that it existed
9 in the document would suggest that somebody there must
10 have thought it made sense, but I frankly don't know if
11 they interviewed people and asked was this your idea.

12 Q I want to get an idea with this example of
13 what quality assurance functions are performed before a
14 design is released for construction. For example, would
15 it have been somehow appropriate for there to be a
16 quality assurance audit of design and engineering that
17 would look at whether the B&R assumptions for seismic to
18 non-seismic boundary anchors were conservative or not?

19 A I think in the process of the design
20 activities there would be calculations performed that
21 would identify the modeling technique and assumptions
22 used. Those have to be specified by the individual
23 performing the analysis. And then quite independent of
24 that individual, another individual with equal or
25 comparable skill would have to perform an independent

1 design verification and he would have to review the
2 reasonableness of the modeling techniques and the
3 reasonableness of the assumptions.

4 And that, incidentally, is precisely how this
5 same rule of thumb was challenged in another architect
6 engineering firm of far greater experience than Brown &
7 Root and precisely how it was determined that it was not
8 a conservative assumption. And there's nothing to
9 suggest that that wouldn't have happened in this case as
10 well.

11 (No hiatus)

1 Q Distinguishing between quality assurance small
2 QA, which applies to all safety related activities and
3 quality assurance big QA which refers to the department
4 that conducts that function; is that a distinction you
5 are comfortable with?

6 A Yes, I am.

7 Q Prior to the release of a design for
8 construction, is there any point where quality assurance
9 capital QA might have come in to examine the Brown & Root
10 assumptions for seismic to non-seismic boundary anchors?

11 A There's always that possibility.

12 Q If there had been such an audit and the quality
13 assurance personnel found that the assumptions were
14 probably un conservative, but the design verification
15 that you just spoke of had not been done yet, would there
16 nonetheless be a non-conformance report written on the
17 fact that the assumptions were not conservative?

18 A No, I don't know that there would have been a
19 non-conformance report. I'm pretty sure --

20 Q I don't want excuse me. I didn't want to get
21 stuck in the terminology. If some other document would
22 be used by quality assurance and design engineering,
23 whatever the document would be, would they write up a
24 deficiency?

25 A There would be clearly concerns noted if

1 somebody observed work in process that wasn't yet
2 completed and felt that they may have observed a concern,
3 an error or a potential mistake or an uncertainty, that
4 that would be highlighted.

5 Now, you use the characterization a quality
6 assurance type audit. If in fact quality assurance had
7 audited that particular area and if they made that
8 observation, they undoubtedly would have at least
9 highlighted that while the work isn't finished, "It does
10 not appear in every respect to be potentially correct,
11 somebody better take a look at this."

12 Q Would they have written an audit deficiency
13 report?

14 A I don't think so.

15 Q How would they have highlighted it?

16 A As a concern.

17 Q They would are have written it as a concern in
18 their audit report?

19 A They have in audit reports an opportunity to
20 provide cogent comments that they feel would be useful to
21 the organization that they're auditing.

22 Mr. Sinkin, I'd like to perhaps use an
23 illustration, if I might, that might help in this
24 particular area. You know, if you were in the process of
25 performing an analytical work, let's say back in college,

1 and you had undertaken to do the job but you hadn't
2 finished; a professor came along and looked over your
3 shoulder and noticed that you were doing it wrong.

4 I would hope that he wouldn't grade you then
5 and there until you had finished your work. It's
6 distinctly possible that you would sort it out and get it
7 right before you turned it in as find work.

8 Q Well, there's no question that we are far more
9 concerned with finished work that's being used for
10 construction than for draft work that might have to be
11 verified later but the question still remains whether the
12 deficiency in the draft before verification is a
13 potentially reportable finding.

14 MR. AXELRAD: There's no question pending, I
15 assume.

16 Q (By Mr. Sinkin) In our discussion about design
17 verification, we talked about the qualifications of the
18 verification engineer and how the verification engineer
19 would be selected by management. If I remember
20 correctly, you said that you know an engineer is
21 qualified if he has a degree in the field of engineering
22 and is on the job at the plant, you know that he's
23 basically qualified as an engineer. Is that correct?

24 MR. AXELRAD: I object to that characterization
25 of the testimony, Mr. Chairman. I do not have any

1 recollection of any such testimony having been given.
2 The best of my recollection, the testimony was that the
3 qualification of engineers are judged by their
4 supervisors and not that not a degree in and of itself is
5 sufficient qualification.

6 MR. SINKIN: Other than checking to see -- and
7 I'll withdraw the question, Mr. chairman.

8 Q (By Mr. Sinkin) Other than checking to see if
9 an engineer is in fact degreed, how do you check whether
10 an engineer is qualified?

11 JUDGE BECHHOEFER: For what purpose?

12 Q (By Mr. Sinkin) Well, we're talking about the
13 design and engineering group at a nuclear power plant,
14 let's restrict it to that group. You want to know
15 whether a particular engineer in a discipline is
16 qualified, some questions come up in your mind or you're
17 just checking to make yourself comfortable.

18 Other than checking to see if that engineer is
19 in fact degreed, how would you go about deciding whether
20 the engineer was qualified?

21 A In the case of engineering, and it may apply to
22 law, when an engineer graduates from college, he
23 invariably has a good understanding of the basic
24 fundamentals of his chosen field of endeavor.

25 Unless he's been fortunate enough to get a lot

1 of field exposure, perhaps, in a co-op program, the
2 likelihood is that that engineer has not had too much
3 exposure to actual working environment where you must
4 apply these principals.

5 It's been the practice in most of the
6 engineering projects that I've ever been associated with,
7 that brand new engineers coming out of college are
8 usually assigned fairly low key and not too sophisticated
9 assignments where they can be more or less shepparded by
10 more seasoned engineers in their early development.

11 And through that process, they do develop
12 certain working skills. And when those skills are
13 recognized by the person responsible for assigning work,
14 then that person is given more responsible work on their
15 own.

16 So it's not a simple matter of just taking
17 somebody with a label and assuming they're qualified.
18 You have to have some demonstrated confidence that
19 they're ready for that particular role.

20 Q Well, in the idea that the supervisor selects
21 the person based on their qualifications, if quality
22 assurance personnel, QA capital QA, wanted to come along
23 and check on whether a given engineer was qualified or
24 not, would they have any other means than going to the
25 supervisor and saying, "Is it your opinion that that

1 engineer is qualified?"

2 MR. AXELRAD: Mr. Chairman, I would like to
3 object to this line of questioning. It's very general,
4 very broad. I don't believe that we have either the
5 training program or the qualification program for
6 engineers at issue in this proceeding.

7 If there is a particular finding which Mr.
8 Sinkin wants to link this particular line of questioning
9 to, and if he can get to the point of whatever the
10 difficulties he has with the explanation that HL&P is
11 giving for non-reportability, then perhaps we can develop
12 a useful record in this proceeding.

13 I do not see how we can get anywhere with this
14 broad, vague and irrelevant line of questioning.

15 MR. SINKIN: Mr. Chairman, I seem to be
16 generating a lot of objections from foundation questions.
17 In the previous proceeding, I generated a lot of
18 objections by not asking foundation questions, so I made
19 it a deliberate undertaking in this proceeding to ask
20 foundations questions. These are simply foundation
21 questions to get the general picture of how you measure
22 the competence of an engineer. They are then going to
23 move into specific examples where we can talk about that
24 topic.

25 I'm trying to determine in this question

1 whether there is a means by which even quality assurance
2 can know whether an engineer is qualified, other than
3 just to ask the supervisor.

4 MR. REIS: Mr. Chairman, if the staff can be
5 heard. In each of these discipline findings, of course,
6 the engineering is generally not qualified or the
7 engineers are generally not qualified it might have some
8 relevance.

9 But really, it's pretty far removed. I wonder
10 from the particular matters of whether it be the seismic
11 anchors or the instruments to air piping, and the
12 question's here, or should each of these or any of these,
13 should any of these matters have been reported under
14 50.55(e).

15 It isn't a question of whether the -- HL&P
16 should report that a particular Brown & Root engineer was
17 unqualified or that a group of Brown & Root engineers
18 were unqualified. Even if we look at the report as a
19 whole and consider whether the report should have been
20 submitted as a whole, I still don't think that it comes
21 to a question of qualification of engineers, the
22 standards for qualifications of engineers.

23 MR. SINKIN: Mr. Chairman, I may be able to
24 make this easier. If you'll turn to Page 45, Line 20,
25 where it speaks of ALARA reviewers were selected by the

1 B&R project manager who was responsible to assure they
2 were qualified to perform their assigned functions.

3 Now, here's a specific instance wherein a
4 Quadrex finding, the finding addresses whether there
5 exists a procedure to define the minimum qualification
6 for ALARA reviewers.

7 The answer says: "You don't need a specific
8 procedure, because they are selected by the B&R
9 engineering project manager who is responsible to assure
10 they are qualified."

11 My question I could rephrase, the question I
12 just asked: Is there a method by which the quality
13 assurance department could determine whether the Brown &
14 Root engineering project manager was indeed selecting
15 people who were qualified, other than by asking him?

16 JUDGE BECHHOEFER: That's however, relating
17 this specifically to finding 4.8.2.1(b), and only that
18 one, because that is --

19 MR. SINKIN: We'll limit it to that for the
20 moment, fine.

21 JUDGE SHON: Good.

22 JUDGE BECHHOEFER: Weren't you a page back?

23 JUDGE SHON: I thought you were on another page
24 entirely, myself.

25 MR. SINKIN: I was. The example I was using

1 was growing out of the information I found there and I
2 was proceeding to go ahead and explore the topic, but we
3 can do it this way.

4 MR. AXELRAD: Could we have the question
5 repeated for the witness?

6 JUDGE SHON: I think there's one other detail.
7 This thing mentioned here on Page 45, Question 68 and 69,
8 seems to discuss the minimum qualifications for ALARA
9 reviewers.

10 You were talking about the minimum
11 qualifications for engineers, while in ALARA reviewer may
12 well be an engineer. It's not clear in my mind that all
13 or either of these things are the other ones.

14 MR. SINKIN: Let me clarify that. Let's start
15 with the basic question and we'll try this again.

16 Q (By Mr. Sinkin) Can any engineer competently
17 conduct an ALARA review or are there specific
18 requirements that must be met before you qualify to
19 review ALARA?

20 A There's clearly are certain skills that would
21 be very desirable for an ALARA reviewer to have if he
22 were to perform his job effectively.

23 Q What would those skills be?

24 A Well, someone who has had responsibility for
25 perhaps health physics activities, at another facility;

1 ALARA in itself is a program to reduce insofar as
2 practical the radiation exposure of operators and
3 maintenance personnel in the plant as well as exposure to
4 the public in the event of an accident. And kind of
5 skills that would serve a person well in carrying out
6 that rule would be those of either a health physics
7 profession or a nuclear engineer who was charged with the
8 responsibility for performing radiological assessments
9 and therefore has some appreciation for the things that
10 can minimize those exposures.

11 Q Now, if the quality assurance department on its
12 audit list had a question to be checked into, "Are the
13 ALARA reviewers adequately qualified," and they went to
14 the department, discipline, and wanted to determine
15 whether the ALARA reviewers were adequately qualified,
16 what would they look at as the required qualifications to
17 know whether a given ALARA reviewer was qualified if
18 there was no procedure which defined these minimum
19 qualifications?

20 A They clearly would walk up to the technical
21 supervisor and inquire on what basis they could ask that
22 of any engineer on the project for that matter, "Is that
23 person qualified to perform the role that he is
24 performing."

25 Q Do the ALARA -- does the quality assurance

1 department have its own criteria list for ALARA reviewers
2 that it takes out on the audit?

3 A No, I don't believe so. I think that they
4 would probably -- now we're going back to this point in
5 time, we're taking --

6 Q May 1981?

7 A -- May 1981. I think the way they would have
8 gone about it is just as I pointed out. They would have
9 to ask the person in technical charge, "What gives you
10 the basis to believe that engineer 'X' is qualified to
11 perform his or her particular role."

12 You know, the same will hold true if I walked
13 up to the quality assurance manager and asked him what
14 were the qualifications for each and every person in the
15 quality assurance organization itself.

16 Q Are you saying that in the quality assurance
17 organization, there aren't certifications in the files of
18 the person showing what their qualifications are?

19 A It depends on their respective jobs. Their
20 qualifications for a quality assurance engineer is
21 probably very similar, in his field of expertise, as it
22 would be for an engineer on the project.

23 Q When I think of quality assurance auditing, I
24 don't think of it as just simply taking someone's word
25 for something. There's something against which you are

1 checking. The quality assurance auditor is going into
2 the department, he wants to know if an ALARA reviewer is
3 qualified, and he asks the engineering project manager,
4 "Is this ALARA reviewer qualified?"

5 And the manager says, "Yes." And he stops
6 there; is that what you're saying; that's it?

7 A In the absence of job descriptions, which is a
8 product of far more recent technological advancement of
9 this industry, which wasn't vogue in 1981, there's a lot
10 more now going for a quality assurance auditor regarding
11 qualifications of everyone on a project, just about.

12 Q So in your view, the absence of a document
13 which defined the minimum qualifications requirements for
14 ALARA reviewers did not create a quality assurance
15 problem.

16 MR. REIS: Asked and answered.

17 MR. SINKIN: I'm not so sure that particular
18 question was exactly asked and answered.

19 JUDGE BECHHOEFER: I don't remember. I'll
20 overrule the objection.

21 A I believe I previously stated that there were
22 no specific written documents, to the best of my
23 knowledge, that identified what were the requisite
24 qualifications for each engineering assignment on the
25 project.

1 But if someone questioned the qualifications of
2 an engineer, they'd have to present that concern to the
3 technical manager and identify either on what basis do
4 you believe that person is qualified or in lieu of our
5 review of his work which has been found to be
6 consistently faulty, we believe that person is not
7 qualified.

8 But there did not exist, to the best of my
9 knowledge, at that point in time in the project, with a
10 document that formally structured qualifications of each
11 technical position on the project.

12 JUDGE BECHHOEFFER: Limiting it only to ALARA,
13 were there any such requirements with respect to persons
14 participating in the ALARA program?

15 THE WITNESS: To the best of my knowledge,
16 there were no written prescriptions, if you will, on what
17 skills, what person required, would be required to have,
18 but that, in my mind, would be in the same category as
19 asking the question about any other discipline.

20 In other words, there was no written
21 prescription to the best of my knowledge, either for
22 ALARA reviewers or for civil engineers or for mechanical
23 engineers or for nuclear engineers, that we start with
24 certain formal training and then certain knowledge about
25 the ability of the person to perform certain tasks.

1 And in -- I answered earlier, the types of
2 backgrounds that I would suspect would be useful to have
3 if were one an ALARA reviewer.

4 JUDGE BECHHOEFER: Were there any construction
5 commitments to develop any such standards?

6 THE WITNESS: Not that I'm aware of.

7 Q (By Mr. Sinkin) Do you consider the effective
8 implementation of ALARA reviews to be a quality assurance
9 requirement?

10 A ALARA was one of the technical roles to be
11 performed by the project. ALARA review was certainly the
12 vehicle by which that was to be performed; they had
13 established separate engineers designated as ALARA
14 reviewers; and the plan was to use that skill to review
15 the work performed by other technical disciplines to
16 determine if there were opportunities to further reduce
17 in a practical way, the possible exposure to plant
18 personnel, to radiation.

19 If that program hadn't functioned, that would
20 have constituted a breakdown in quality since that was
21 part of the plan for the design process.

22 Q At the time Quadrex conducted there study, they
23 said there is limited evidence that proper follow-up has
24 occurred to verify incorporation of ALARA specified
25 designs. That's in the finding in answer 68. If indeed

1 there was not proper follow--up, to verify incorporation
2 of ALARA specified design, would that in your view be a
3 quality assurance breakdown?

4 A If we found a systematic failure by the project
5 team to deal with the ALARA requirements, and that that
6 was in direct defiance of project established procedural
7 requirements, and as a result of that systematic failure
8 we were not achieving the desired objectives set forth in
9 the ALARA program that that might well have been a
10 reportable item.

11 Q In your view as of May 7, 1981, did the work of
12 Brown & Root on ALARA meet the minimum requirements in
13 your view for that kind of work?

14 A I think Brown & Root was literally just getting
15 started in this ALARA program. I can't recall with
16 confidence exactly when I signed out the ALARA policy
17 manual for the South Texas project, but it was either
18 slightly before that point in time or it may have even
19 been after.

20 I think that the project had established some
21 very lofty ALARA goals and I think they were still in the
22 process of developing the machinery to carry it out. The
23 nuclear plant design was in an extremely preliminary
24 stage of completion. I didn't perceive that the current
25 state of the union on ALARA was out of touch with the

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1 current state of the rest of the design.

2 Q On page 47, the question and answer '75, Mr.
3 Goldberg. If you would just review those for a moment.

4 Are you ready?

5 A Yes, I am.

6 Q In your view, you state that the requirement
7 for radiation zone drawings based upon accident
8 conditions was a post TMI requirement that Brown & Root
9 had not yet addressed in its design work?

10 In your view, had Brown & Root begun addressing
11 that requirement for radiation zone drawings by May of
12 1981?

13 MR. AXELRAD: Mr. cchairman, I'm going to
14 object to that question. Again, the finding is that the
15 drawings had not been prepared. And the answer that's
16 provided by HL&P does not contest this but simply says
17 that that fact is not reportable. I don't think that the
18 personal views of the witness as to when work should have
19 been done affects the reportability of that particular or
20 the fact that particular work had not yet been done.

21 JUDGE BECHHOEFER: I think we'll overrule the
22 objection at this stage and we'll have to see how get
23 into this.

24 A I don't think so. And let me explain why.
25 Sometime in this time frame, and again I can't be sure

1 whether it was before, during, or after the Quadrex
2 review, NUREG 0637 was being promulgated by the NRC; that
3 contained a substantial portion of the TMI action plan.
4 The projects that were scrambling to try to deal with the
5 post TMI issues were units that were either very close to
6 being finished or units that may have already been
7 operating and for which the NRC was identifying selective
8 areas where backfitting would be required.

9 The fact that the project hadn't reacted
10 instantly to the post TMI requirements may well represent
11 a benefit rather than a risk, because had they reacted as
12 rapidly as some of the other utilities, particularly the
13 ones that had plants that were almost complete, they
14 would have done a lot of things before even the NRC's
15 final feelings about it had settled down.

16 So I don't see this as a fundamental character
17 defect by Brown & Root. They were busy trying to deal
18 with issues for which they thought the regulations were
19 firm, and I don't think I'd fault them for not rushing
20 into dealing with areas where the regulations were still
21 somewhat volatile.

22 Q Turning to page 48, finding 4.8.2.1 (g). If
23 you would just review question 77 and answer 77.

24 In your view, Mr. Goldberg, should the design
25 basis for removable concrete walls been completed by May

1 7, 1981?

2 A I believe that portion dealing with the seismic
3 adequacy of the walls would have had to have been firmed
4 up before the walls were installed. As I understand it,
5 the portion of the standard that still hadn't been
6 addressed -- well, let's go back and talk about concrete,
7 or block walls.

8 These were put in in areas where maintenance
9 access required the ability to remove the wall for
10 maintenance access. And I think the question raised by
11 Quadrex was that what would be the shielding
12 considerations if we took the wall down in order to
13 provide access or maintenance.

14 And Brown & Root hadn't gotten around to
15 discussing that in their standard.

16 Now, there's a lot of different scenarios. One
17 scenario is that the wall might have its most important
18 application during operation as opposed to when the
19 particular piece of equipment might be shut down.
20 Another scenario is that if it had an area of high
21 residual radioactivity and yet the wall was needed to be
22 removed for possible access for maybe pulling the tube
23 bundle of the heat exchanger, some temporary shadow
24 shielding would have to be provided for the maintenance
25 personnel so as to limit their exposure.

1 So to the degree that we understand this
2 statement to be incomplete, we did not feel it
3 constituted a problem.

4 Q Well, my question was should they have done
5 this work by may the 7th, and your answer is --

6 A The portion of the work that needed to be done
7 by May 7, to the best of my knowledge, was done.

8 Q Was done?

9 A That is correct.

10 Q Are you saying that they had done the portion
11 that dealt with whether it was a wall whose shielding was
12 more required during operation than a wall whose shield
13 wall was not required?

14 A No, I hope I didn't confuse you. The portion
15 that needed to be in place before walls where erected was
16 the portion dealing with the seismicity capability of the
17 wall. Some of these walls had to be designed so that
18 they would not fall down during an earthquake.

19 Q And that was the only missing piece?

20 A No, that was the piece that was there.

21 Q That was the piece that was there, okay. Thank
22 you.

23 Mr. Goldberg, I'm handing you a page from a
24 report that perhaps is now familiar to you to some
25 extent, which I will ask be marked as CCANP 85.

1 JUDGE BECHHOEFER: 4.

2 MR. SINKIN: I'm sorry, 84.

3 (CCANP Exhibit 84 marked
4 for identification.)

5 Q (By Mr. Sinkin) Have you had a chance to
6 review this, Mr. Goldberg?

7 A Yes, I have.

8 Q This, in this document, it says that Brown &
9 Root general structural design criteria were in place at
10 the time of the Quadrex review that included a design
11 basis and required consideration of shielding
12 requirements when removable concrete walls are used. Are
13 you saying that such a criteria was not in place at the
14 time Quadrex did their study?

15 A I think what I said was that if you take the
16 wall down or if you remove a plug from the wall and you
17 create a hole where you previously had concrete, I don't
18 think Brown & Root had addressed in this standard how
19 they would deal with the associated radiation.

20 I said that there are different radiation
21 considerations. One deals with what needs to be there
22 routinely when the plant's operating versus what do you
23 do when the plant is being maintained and you have a need
24 to remove either the whole wall or any part of it.

25 And I think it's that facet that was

1 highlighted when Quadrex performed its review and I don't
2 think that Brown & Root supplied an answer to that
3 question. But I don't see that question that that
4 question is a particularly onerous one. There are other
5 ways that you can deal with that problem given that you
6 have to provide access for maintenance.

7 Q Had any of these walls, to your knowledge, been
8 installed?

9 A I think there were some.

10 Q So is this the sort of activity where you would
11 use preliminary documents and actually do construction,
12 do a later analysis and if the design did not meet your
13 requirements for shielding, rebuild the wall or otherwise
14 modify the wall?

15 A I don't think that has anything to do with this
16 issue. I think the issue here is that Brown & Root had
17 in place the necessary technical direction for the use of
18 these block walls; that they were properly addressed from
19 a standpoint of seismicity and radiation protection under
20 normal plant conditions. The question, as I understand
21 it, it was raised by Quadrex, is when you remove the
22 removable plug or you take down a wall, this does in fact
23 change the radiation environment to possible maintenance
24 personnel that are going to be in the area, and what have
25 you done to address that, and is a different kind of a

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1 question.

2 Q That is a shielding question?

3 A That's the radiological protection question,
4 associated with maintenance operations and that would
5 invariably be something that would have to be developed
6 as a separate issue.

7 (No Hiatus.)

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1 JUDGE BECHHOEFER: Mr. Goldberg, I'm not sure
2 how that is consistent with what you said in the answer
3 to -- in answer 77.

4 THE WITNESS: It was really referring to that
5 part of the temporary walls. The structural part and
6 the amount of concrete needed for the radiological
7 protection was settled. As I understood the point at
8 issue was what are the radiological considerations when
9 those walls have to be taken down in part or in total.

10 JUDGE SHON: In other words, you might say
11 that a better way of putting the finding was that a
12 design basis governing the conditions when a removable
13 concrete block wall is removed in whole or in part;
14 isn't that right?

15 THE WITNESS: Yes. Yes, sir.

16 JUDGE BECHHOEFER: And, normally, if you were
17 looking at a design for such walls, would you expect
18 that latter portion of the criteria to be developed
19 after the fact or after the wall is built?

20 THE WITNESS: Yes, sir. There's no
21 question -- in my mind it's a totally separate
22 evolution.

23 JUDGE BECHHOEFER: Well, doesn't the way you
24 build the wall have some impact on what the removable
25 portion would be?

1 THE WITNESS: Well, clearly if we're
2 talking -- let's take a simple example. Let's take a
3 wall that has to have a removable section, let's say, to
4 gain access to a particular piece of machinery. And
5 maybe it's fitted with a particular set of blocks that
6 have to be removed. There has to be access to get to
7 the blocks certainly so they can be removed. And then
8 once they have been removed, personnel have to work in
9 the area to remove the machinery. And if the use of
10 supplemental shielding, you know, will reduce their
11 whole body exposure, then that will be designed as a
12 separate, you know, effort.

13 JUDGE BECHHOEFER: This is like putting the
14 block on a hinge so that it could be taken out and put
15 back faster or something like that?

16 THE WITNESS: Well, in the context of ALARA,
17 if you're able to come up with a more efficient
18 removable device which will minimize the amount of time
19 that personnel are down there in the removal and the
20 reinstallation, that that certainly will enhance the
21 ALARA considerations.

22 JUDGE BECHHOEFER: Well, could you say that
23 the wall as built, say, and if not corrected would not
24 constitute a safety hazard?

25 THE WITNESS: Well, if we're talking first off

1 about, let's say, the seismic competence of the wall, if
2 this wall was located contiguous to safety-related
3 machinery, it would be important that this wall be able
4 to withstand earthquake so that in the event of
5 earthquake it didn't topple down and compromise the
6 machinery. And that's one of the early considerations
7 for the use of block walls is to ensure that they have
8 structural integrity for earthquake motion given that
9 that's a design feature that they need.

10 The second consideration is that they be
11 constructed of sufficient material and thickness to deal
12 with whatever radiological objectives that wall has to
13 serve under normal plant operation because it's, in
14 effect, just a substitute for a reinforced concrete
15 wall. And the reason for the use of the block wall is
16 to gain access with far less difficulty than trying to
17 remove a reinforced concrete wall. I mean, that's
18 principally the application for the use of block walls.

19 But once you take the block wall down to
20 perform whatever the maintenance practice is that you
21 seek to do, that raises another separate question which
22 is for the persons involved in the activity, once the
23 wall is down, what additional protection might you have
24 to provide those personnel? And that's a whole separate
25 area, design of special shadow shields for the

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1 particular maintenance operation. It usually does not
2 go hand in hand with designing the block wall.

3 JUDGE BECHHOEFER: Well, then, this doesn't
4 relate to the exposure, if any, that persons outside the
5 site, the general public would receive?

6 THE WITNESS: No, sir. This would be all
7 internal structure.

8 Q (By Mr. Sinkin) Is it possible that the
9 actual thickness of the wall would determine whether it
10 would have to be removed or not?

11 A No. Usually the requirement for the wall
12 being removable is associated with needing to gain
13 access for the performance of some uncommon but clearly
14 maybe a potentially necessary operation of the life of
15 the plant.

16 Q As I read CCANP 85, there is some shielding
17 calculation that goes into the actual wall itself.

18 A That is correct.

19 Q And that would be with the wall in place where
20 personnel have to pass by it, are they adequately
21 shielded; is that correct?

22 A That's correct.

23 Q And that's an ALARA kind of review and a
24 shield --

25 A It's precisely an ALARA consideration because

1 here you have a host of options. When one designs a
2 nuclear power plant, in any given place which has some
3 potential exposure to ionizing radiation, depending on
4 what shielding is in place will define the level of
5 radiation in that particular location.

6 Now, depending on where personnel are likely
7 to reside either for plant operation activities or
8 maintenance activities will help to dictate what kinds
9 of consideration should be paid to an area that is
10 infrequently traversed by personnel. Clearly to spend
11 time and financial resources to reduce radiation levels
12 would be most inappropriate. But to the areas where
13 personnel are likely to reside for any length of time,
14 either for plant operation or maintenance activities,
15 those would be the places that one should be spending
16 some effort to look for practical ways to reduce the
17 levels.

18 Q Is ALARA at all associated with accident
19 conditions?

20 A You must in the context of the TMI
21 considerations certainly examine what kinds of
22 anticipated radiation levels you're going to be facing
23 following postulated accidents in order to determine
24 whether or not locations in proximity to where personnel
25 may have to proceed to redress for recovery of the

1 accident, that they can get to those areas and can
2 perform their associated functions without being exposed
3 to undue amounts of radiation.

4 JUDGE BECHHOEFER: Mr. Sinkin, I think you in
5 your previous question or one of several, probably
6 several pages back, referred to CCANP 84 rather than
7 85.

8 MR. SINKIN: Excuse me. You're correct. I
9 marked it wrong.

10 MR. AXELRAD: Mr. Chairman, if Mr. Sinkin is
11 proceeding to another subject, this might be an
12 appropriate time to take a short break.

13 MR. SINKIN: Just before I do that, I would
14 move CCANP 84 into evidence in the same fashion that
15 CCANP 81 and CCANP 75 were admitted, for the limited
16 purposes as defined at that time.

17 MR. AXELRAD: No objection, Mr. Chairman.

18 MR. REIS: No objection.

19 JUDGE BECHHOEFER: Okay. CCANP 84 will be
20 admitted subject to the limitations referred to.

21 MR. SINKIN: And this is a fine time for a
22 break, Mr. Chairman.

23 JUDGE BECHHOEFER: Okay. Why don't we take a
24 fifteen-minute break.

25 (Recess.)

1 JUDGE BECHHOEFER: Back on the record.

2 Mr. Sinkin?

3 Q (By Mr. Sinkin) Mr. Goldberg, at the time of
4 the Quadrex report being delivered and you made your
5 review as to potentially reportable items, May 7th, May
6 8th, you made a preliminary decision as to which items
7 were potentially reportable on May the 8th, or your
8 committee did, and the items that you decided were
9 potentially reportable were then forwarded to the
10 Incident Review Committee for their review. Is that
11 correct?

12 A No. At that point in time we gave our
13 conclusions to the chairman of the Incident Review
14 Committee, Mr. Powell, for his forwarding to the Nuclear
15 Regulatory Commission.

16 Q Did you subsequently send any of the Quadrex
17 findings to the Incident Review Committee for their
18 review?

19 A I don't believe so. Not in that time frame.

20 Q I'm not sure the record will be clear on the
21 time frame. Let's pick a time frame. Between -- in the
22 May-June period, were those three potentially reportable
23 findings sent to the Incident Review Committee for their
24 review?

25 A I'm referring to the point in time when we

1 made report to the NRC, the Incident Review Committee,
2 per se, had not participated. I don't recall whether
3 they went back as a matter of routine and reviewed the
4 particular matters that we reported. I just don't
5 recall it.

6 Q Do you know if the IRC, the Incident Review
7 Committee, received the entire Quadrex report?

8 A I would have to say probably they had access
9 to it. There were a number of copies available in
10 engineering and clearly there was a member of the IRC
11 from engineering. I'm only speculating. I would
12 suspect they did only because there were a number of
13 copies floating around on the project.

14 Q Was Mr. Powell given a copy on May the 8th to
15 take away with him?

16 A I don't recall.

17 Q In that time period of April-May 1981, if an
18 item came to you for review from any source, you
19 received information and conducted a review on whether
20 it was potentially reportable and decided it was not
21 potentially reportable, would it be your practice to
22 then send that same item, that same information to the
23 Incident Review Committee to see if they agreed with
24 your determination?

25 A It was not my practice to routinely make

1 determinations of reportability. We had the Incident
2 Review Committee established for that purpose. If I
3 came upon any information that I thought in the routine
4 scheme of things might fall into that category, I might
5 refer it to the IRC. The Quadrex matter was a totally
6 different type of situation.

7 Q But is it possible -- let's talk about under
8 the current system at the project. Is it possible that
9 information would come to you that you would decide
10 needed to be reviewed for whether it was potentially
11 reportable or not and that you would decide no and that
12 that would be the end of it, there's no required review
13 by anyone else of your decision?

14 A No. The way we're established in the current
15 situation I think is useful to review. There are
16 occasions, for example, where I may come upon
17 information that I think needs to be reviewed by the IRC
18 for reportability and I'll bring it to the attention
19 either of the manager of licensing or the chairman in
20 the IRC and request that they undertake a reportability
21 review.

22 I've even gone as far sometimes as to say that
23 you ought to review it. But I will tell you that I
24 think it has very high potential, so I'll be very
25 disappointed that I don't get a feedback that it's going

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1 to be reported at least as a potential. Now, that may
2 seem at times to be a little undemocratic. But since
3 I'm responsible for how these matters are addressed, if
4 I see enough concern, I'll make sure that that concern
5 is shared with members of the IRC.

6 I have never, to the best of my knowledge,
7 ever said to the IRC that I disagree with your finding
8 and you will not make that report to the NRC. I have on
9 occasion discussed with the IRC chairman or to the
10 manager of licensing how the decision on reportability
11 was arrived at. I have never changed that decision.

12 I may have caused people to focus on other
13 matters which would help them make a decision, but I
14 have never disagreed with a finding of the IRC. If they
15 say it's reportable, it gets reported. And clearly if
16 it turns out later that they're wrong, then the
17 appropriate information is provided to the NRC as to
18 what its true character is.

19 Q I understand, but my question went to
20 information that comes to you that you decide in your
21 own mind is not potentially reportable. Might you then
22 stop there or are you under any requirement to review
23 that information, make your determination and send it on
24 even if you don't feel it is potentially reportable?

25 A Almost every single day on a nuclear project,

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1 Mr. Sinkin, my eyes and my mind consider something. I
2 might see something, I might look at it and ask myself
3 what is it I'm looking at. Is that a problem? Is that
4 the kind of a problem that needs to be brought to the
5 attention of the IRC? I do, in fact, make decisions
6 from time to time that say that isn't the kind of a
7 problem that needs to go to the IRC. That's kind of a
8 routine situation, not just for myself, but for every
9 other responsible manager and technical supervisor on
10 the project.

11 Q In terms of your current understanding of
12 50.55(e), do you have any plans to do any further
13 training of yourself, take any further courses, do
14 anything else to educate yourself any further about what
15 50.55(e) means to you?

16 MR. NEWMAN: I'm going to object to that
17 question, Mr. Chairman. I can't conceive of what
18 relevance that has to the proceeding.

19 MR. SINKIN: Well, number one, the Board
20 raised the question of the competence of the Applicants
21 in terms of their current 50.55(e) reporting
22 procedures. That's an issue in the proceeding. One of
23 the people who makes a decision on information as to
24 whether it will even be considered for potential
25 reportability is Mr. Goldberg, as he has just

1 testified. So, my question is if for any reason his
2 competence was in question now, whether he planned any
3 further training on the use of 50.55(e). I think it's a
4 perfectly legitimate question.

5 MR. PIRFO: The Staff would object, Your
6 Honor, in the sense that the question is not going to
7 get a probative answer. If the answer is yes, then it
8 becomes a question of, well, you weren't qualified to
9 make the determination before or are not qualified now.
10 If the answer is no, then it's a question of saying,
11 well, then you're satisfied with it and you're not going
12 to be good enough in the future. It's a no-win
13 situation he's placing the witness in.

14 MR. SINKIN: No, Mr. Pirfo's assumption is
15 that the witness has already been found to lack
16 competence. I don't think that assumption is made in
17 this hearing. That's to be proven.

18 MR. PIRFO: My assumption is that the answer
19 is not probative of anything. Whether it's an
20 unqualified yes or an unqualified no, the answer will
21 not be probative of the issues in this case.

22 MR. SINKIN: What I'm trying to establish, Mr.
23 Chairman, for the purpose of this line of
24 cross-examination is whether or not Mr. Goldberg's
25 current view of 50.55(e) is the view he will be applying

1 from here on in on the project. That's what I'm trying
2 to establish. That's why I asked if he had -- if he
3 planned any further training.

4 MR. NEWMAN: Mr. Chairman, I tell you, it's
5 probably faster to get -- I don't think it's probative
6 of anything, but if the witness wants to answer the
7 question, I apologize for objecting. I just hope that
8 we end up with a record that has some meaning for
9 somebody.

10 A Mr. Sinkin, I feel very comfortable with my
11 understanding of my requirements to make reports to the
12 Nuclear Regulatory Commission under 50.55(e). I am very
13 comfortable with the level of expertise and training and
14 experience that now rests within HL&P, both with the
15 manager of nuclear licensing, the project technical
16 manager, and with the Incident Review Committee. I feel
17 that we have an excellent record of both orderly and
18 timely reporting of potential matters under 50.55(e) and
19 I don't think that that's a coincidence. I think that
20 we have worked hard at putting into our program both an
21 intelligent procedure and extremely competent
22 professional people to function under that procedure.

23 Q (By Mr. Sinkin) And you were expressing that
24 on behalf of yourself too? You feel comfortable with
25 your own expertise, training and experience?

1 A I feel very comfortable in that. And if
2 that's not correct, then everything else I've said isn't
3 correct because all of these matters obviously are as I
4 view them.

5 MR. SINKIN: Mr. Chairman, I'm going to
6 distribute what I ask be marked as CCANP 85 for
7 identification. And in order to avoid confusing the
8 witness, and I will explain this, I would ask that the
9 witness not look at all of these yet because they change
10 and it may confuse him as to his answer. So, obviously
11 he's entitled to do it, but it may confuse him when we
12 go to ask questions.

13 MR. AXELRAD: I trust the witness will not be
14 confused and that he should look at the entire document
15 before you ask any questions based on it.

16 MR. SINKIN: That's counsel's choice
17 obviously.

18 Q (By Mr. Sinkin) Mr. Goldberg, let me just
19 outline for you what I trust these drawings represent.
20 And if you have any problems with what I say, please
21 stop me and, if necessary, we'll correct them or alter
22 them or whatever.

23 A Would I be permitted to look past the first
24 page?

25 Q You can if you want. I was just saying that

1 for the purposes of progressing through, there's two
2 different situations created, one in the first set of
3 drawings and one in the second set of drawings. They're
4 very similar but different. And I was afraid if you
5 looked at both sets, you would have that in your mind
6 and we'd have some confusion. But you're more than
7 welcome and if your counsel wishes, please go forward
8 and look at them all.

9 MR. AXELRAD: I wish to have the witness look
10 at all of the drawings before the questioning starts.

11 I believe the witness is ready, Mr. Sinkin.

12 Q (By Mr. Sinkin) Mr. Goldberg, turning to
13 drawing 1 as numbered in the upper left-hand corner --

14 JUDGE SHON: Drawing numbered where?

15 MR. SINKIN: Upper right-hand corner, excuse
16 me.

17 Q (By Mr. Sinkin) Drawing number 1, what is
18 represented here as A is a pipe that's already
19 completely installed. The focus of this inquiry will
20 not be on that pipe. It's there and it's done right,
21 okay?

22 Item B is a beam installed on the pipe. The
23 two C's are angles dropped from the pipe and D is HVAC
24 duct installed and supported by the angles dropped from
25 the beam.

1 Is this type of construction as represented
2 here in any way unusual to you?

3 MR. AXELRAD: Mr. Chairman, before we begin
4 this entire line of inquiry, I would object unless CCANP
5 can relate this drawing and the other drawings in any
6 way to a specific finding which is at issue in this
7 proceeding.

8 (No hiatus)
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1 MR. SINKIN: Mr. Chairman, the purpose of this
2 entire inquiry is to examine Mr. Goldberg's understanding
3 of 50.55(e).

4 MR. AXELRAD: There is absolutely no reason why
5 Mr. Goldberg's understanding of 50.55(e) could not be
6 explored within the confines of the specific findings and
7 generic findings which are at issue in this proceeding.

8 We have ten generic findings, 16 discipline
9 findings. We have more than enough examples within those
10 categories that can be used and it appears to be an utter
11 waste of time to proceed with an examination into
12 engineering drawing concocted by CCANP.

13 MR. NEWMAN: Is this something he made up? I
14 can't believe it.

15 JUDGE BECHHOEFER: Mr. Sinkin, before we permit
16 any questions along this line, we would like an offer of
17 proof of what you intend to use CCANP 85 for.

18 MR. SINKIN: Yes, Mr. Chairman. While the
19 Applicants point to the findings the Quadrex report as
20 material that can be used to testify Mr. Goldberg's
21 understanding of 50.55(e). Those are findings that are
22 four years old and have been extensively discussed in
23 various context, what we're attempting to do with this
24 drawing is create various situations and determine from
25 those situations Mr. Goldberg's view as to whether that

1 situation would be potentially reportable or not.

2 That's the purpose of the drawings.

3 JUDGE SHON: It is, so to speak, an examination
4 on his capacity to discover reportable situations.

5 MR. SINKIN: More his application of the
6 regulation to an identified situation, how he applies
7 50.55(e) today in his OWN mind.

8 MR. AXELRAD: Mr. Chairman, if I might just
9 interrupt the Board's deliberation for a minute. Perhaps
10 we can all be enlightened as to how current competence of
11 Mr. Goldberg has any relationship to any of the issues in
12 this proceeding. The question was whether or not
13 findings were properly reported back in 1981.

14 There is a separate contention with respect to
15 our current 50.55(e) procedures where there is a witness
16 who will be testifying as to that. I am not aware of any
17 contention that deals with the present competence of the
18 vice-president of nuclear construction and engineering.

19 JUDGE BECHHOEFER: It's my understanding that
20 Mr. Sinkin is asking Mr. Goldberg questions on the
21 issue, the issue B and D, for which you do have another
22 panel. But he is asking Mr. Goldberg this series of
23 questions on that issue rather than on Quadrex report
24 issues.

25 MR. AXELRAD: Which issue is that?

1 JUDGE BECHHOEFER: The competence issues, under
2 issues B and D.

3 MR. AXELRAD: But the only thing that the board
4 admitted under that particular -- we litigated issues B
5 and D in Phase I. The only thing that's been admitted in
6 Phase II is soils; and on 50.55(e) procedure.

7 JUDGE BECHHOEFER: That's it. You just named
8 it. That's it.

9 MR. AXELRAD: But he isn't --

10 JUDGE BECHHOEFER: We think that's the source
11 of the questions.

12 MR. AXELRAD: Our current 50.55(e) procedure?

13 JUDGE BECHHOEFER: That's correct.

14 MR. AXELRAD: But this is a competence of a
15 particular individual.

16 MR. SINKIN: But he has testified in response
17 to my questions that there will be times when he will
18 make the actual determination under 50.55(e) as to
19 whether there is a potentially reportable finding and
20 that his determination may be final. That's part of your
21 50.55(e) reporting program.

22 MR. AXELRAD: That was not the testimony of
23 this particular witness. He testified that just as any
24 other individual who is employed at the South Texas
25 Project, he and others are confronted every day with any

1 number of matters that they see, they see what the plant
2 looks like, they look at drawings, they have discussions
3 among each other and each of them have to at one point or
4 another decide whatever they see is something which is
5 then processed under the procedures to determine
6 reportability, including setting out the IRC.

7 MR. REIS: Mr. Chairman, so far, it does appear
8 that Mr. Goldberg is in charge of the nuclear operations
9 of HL&P and the leadership he gives and how he views this
10 I don't see as being beyond this proceeding. It may be
11 that as we go on, we get lost in a morrass and that
12 things have to be cut off at a point.

13 But right now we don't really have a question
14 pending, we don't know where we're going. I think it is
15 within the scope of two issues presently being looked at,
16 although we'll have to see as we go along. But right
17 now, I don't think there's any reason to stop this line
18 of inquiry at this point.

19 MR. AXELRAD: There is a question pending, the
20 one I objected to, and the one that the Board then asked
21 for a offer of proof.

22 JUDGE SHON: It is true, Mr. Axelrad, that at
23 page 25, question 35, question and answer 35, Mr. --
24 well, I think he did. Mr. Goldberg suggested that they
25 might use a procedure that would even bypass the IRC and

1 use only his expertise and that of two others and that's
2 what they did in the Quadrex report, because of its
3 importance.

4 MR. AXELRAD: Yes, that is true, Mr. Chairman.
5 I mean Judge Shon.

6 JUDGE SHON: It seems then that he figures
7 properly into and has figured importantly into the
8 procedure by which the reportability of these things that
9 have been admitted, the findings that have been admitted
10 was judged or determined.

11 MR. AXELRAD: Certainly in the 1981
12 determinations, that is correct. But that's not what Mr.
13 Sinkin alluded to. Mr. Sinkin wanted to test his present
14 competence which has nothing to do -- I would say won't
15 have anything to do, but is not the same question as to
16 whether or not the reportability determinations were
17 correctly made in 1981.

18 I would add that if Mr. Sinkin wishes to use a
19 hypothetical a hypothetical should be in some fashion
20 related or have some kind of foundation that are somewhat
21 related to the particular findings that were before us.
22 This particular group of drawings, unless Mr. Sinkin can
23 relate them in some fashion, just have nothing to do with
24 the substantive matters in this proceeding.

25 MR. SINKIN: Mr. Chairman, I think if my

1 purpose is to test the current competence of Mr. Goldberg
2 in 50.55(e), there's no requirement that I use as my
3 hypothetical something that necessarily comes from the
4 Quadrex report.

5 JUDGE BECHHOEFER: I think we will overrule the
6 objection at this stage. It isn't clearly irrelevant at
7 least at this point. We'll see where it goes.

8 Q (By Mr. Sinkin) Mr. Goldberg, in drawing No.
9 1, is the installation as shown in any way unusual from
10 your experience in viewing construction?

11 A Why don't you tell me what I'm looking at in
12 drawing No. 1 and then I'll tell you if it's unusual.

13 Q I thought I went through what each piece was,
14 Mr. Goldberg, but I'll be happy to do it again.

15 A Well, you said that A is a pipe.

16 Q Right.

17 A But you didn't say whether it was a fluid
18 system pipe, you didn't say whether it was
19 high-temperature fluid, you didn't tell me whether it was
20 maybe a high energy system, steam, or compressed air. I
21 don't know whether these things are supposed to be
22 seismic, whether they're safety related. You know, we're
23 starting with just a picture and there's a whole lot of
24 information that one needs to have if we're going to get
25 down to the subject of reportability.

1 Q What the attempt was in this drawing was to
2 provide you with a drawing in which HVAC duct has been
3 installed beneath a pipe by the use of the beam B and the
4 angles C. We can assume, for purposes of this inquiry,
5 that the type of pipe to which it is installed is
6 appropriate; there is no problem with what type of pipe
7 it's installed to; the pipe will not be of concern in the
8 example. I guess the first question would be: Are you
9 familiar with installing HVAC duct by the use of a pipe
10 and angles to a pipe as shown in this drawing?

11 A With no other support?

12 Q With with no other support.

13 A And is this in a nuclear power plant?

14 Q Well, we were going to start with general
15 construction, but we can go right to nuclear power plant.

16 A Well, I can't pretend that I've seen every
17 piece of construction that every existed. I have to have
18 a frame of reference to understand whether this is common
19 to some frame of reference.

20 Q Have you ever seen in a nuclear power plant air
21 conditioning duct installed by attaching it to a pipe
22 with beam and angles?

23 A And no other support than what's shown here.

24 Q Yes.

25 A No, I'm not used to seeing it.

1 Q What other support would be necessary?

2 A Well, if this pipe, for example, were strictly
3 a pipe of circular beam, you know, pipes are circular
4 beams, they can be and are used for structural support,
5 not just to carry fluids; and if there was nothing but
6 dead load that I needed to worry about, it might well be
7 that this is perfectly adequate.

8 If I had to worry about seismic, then this
9 might not been enough because I'm sure I have a
10 horizontal component and this may not be adequate to
11 handle horizontal accelerations; it may not even be
12 adequate for handling vertical acceleration, it depends
13 on the strength of the members there.

14 Q You are saying if it was dead loads you had to
15 worry about, you'd have to have a horizontal component
16 for support of the duct?

17 A No, I said if it had to withstand earthquake
18 accelerations.

19 Q Okay.

20 A This May not been adequate for horizontal
21 movement.

22 Q Assuming that this pipe is a circular beam that
23 is adequate to be used for structural support, that the
24 duct work is not seismic, needs no further support than
25 the two angles as shown, is there anything else that

1 would trouble you about this drawing?

2 MR. REIS: Mr. Chairman, I object to this
3 point. I can't tell, since it is not seismic, I am not
4 sure that it falls under Appendix B at all and therefore
5 doesn't relate to quality assurance. And therefore, I
6 think the inquiry is immaterial and not probative.

7 MR. SINKIN: One moment, Mr. Chairman.

8 JUDGE BECHHOEFER: As asked, we'll sustain the
9 objection to that question.

10 Q (By Mr. Sinkin) What would we have to add to
11 drawing No. 1 for it to be comfortable for you that there
12 was sufficient seismic support.

13 MR. NEWMAN: Mr. Chairman, that question is
14 absolutely incapable of an answer that will assist in the
15 development of a sound record. I really am concerned
16 that we're developing a record here that is totally out
17 of control.

18 MR. SINKIN: Go ahead, Mr. Reis.

19 MR. REIS: I concur in that. The question is
20 much to general.

21 MR. SINKIN: Mr. Chairman, Mr. Goldberg
22 testified that if it was seismic, it would need a
23 horizontal component of support. My question was simply
24 where would that horizontal component of support be, what
25 would have to be on this drawing.

1 JUDGE BECHHOEFER: The Board doesn't think that
2 that question is capable of --

3 JUDGE SHON: It's clear that the horizontal
4 support would have to be at least in two different
5 directions and you haven't specified what kind of
6 loadings it's got or anything else; no one can tell you
7 that.

8 JUDGE LAMB: It's just inadequate information.

9 JUDGE SHON: Totally inadequate, you haven't
10 specified the problem.

11 Q (By Mr. Sinkin) Is it possible, Mr. Goldberg,
12 looking at --

13 JUDGE BECHHOEFER: You better not use the word
14 "possible."

15 Q (By Mr. Sinkin) What what I'm after is: You
16 would expect to see some horizontal component of support
17 on drawing No. 1 if this was seismic. Could that
18 horizontal support exist at some point outside the area
19 of this drawing or would it have to be right where the
20 angles are?

21 MR. AXELRAD: Mr. Chairman, that's an
22 incredible --

23 MR. SINKIN: I tell you exactly where I'm going
24 with the question, Mr. Chairman. I think we can get to
25 the point where the witness and I can agree that this

1 could represent a seismic installation; it's just that
2 certain components of support are not shown in this
3 drawing but do exist at another point in the installation
4 and that does not make the drawing no longer useful.

5 MR. AXELRAD: I don't know whether that
6 explanation contributes anything. But I can't imagine a
7 question that will follow up that explanation which will
8 capable of being answered that would provide any useful
9 contribution to this record.

10 Mr. Sinkin is trying to take a simple drawing
11 and out of that, develop some kind of a theory of design
12 of nuclear piping that the witness can answer in simple
13 terms, and that is just not possible.

14 What the witness has tried to explain from the
15 beginning is that there is no possibility that something
16 as simple as this can be answered without many other
17 considerations, many other factors, which you couldn't
18 begin to guess at until you have more information with
19 respect to what's in the pipe, probably what the duct is
20 composed of, what the purpose of the installation is;
21 where it's located, what's nearby, what's below and
22 above.

23 MR. SINKIN: Maybe it would help, Mr. Chairman,
24 if I, as a form of offer of proof, walked through the
25 drawings and spoke to directly what they are meant to

1 represent. I think if I do that, perhaps the problems
2 that have been raised will evaporate.

3 Q (By Mr. Sinkin) Okay. Drawing No. 1 was meant
4 to represent duct as installed to a pipe by the use of a
5 beam and two angles. Drawing No. 3 is a side view of
6 that same installation A being the pipe. B the beam to
7 which the angles are attached two B; you now get a view
8 of two of them; both C's, the angles on one side of the
9 pipe; the solid box being the duct, the HVAC duct; the
10 dashed lines representing cable tray supported to the
11 floor by supports.

12 The problem illustrated in the drawing is that
13 the cable tray cannot be installed because there is an
14 interference given the existence of the already installed
15 duct.

16 That is the essence of the example. You can
17 see it again on drawing four, where you have the pipe,
18 the beam, the angles and the ducts installed; the cable
19 tray represent bid the cable tray, itself, E, and the
20 supports F, cannot be installed because in order to do
21 so, it intersects the same area already occupied by the
22 duct.

23 That's the first example in the drawings.

24 The drawing No. 5 is a just a schematic
25 of various components, A the pipe, E and F the

1 cable tray and supports; and off to the right again a
2 view of the cable tray just for clarification. That is
3 the hypothetical example I've created in the drawings
4 that I wanted to use as a means of examining Mr. Goldberg
5 at various points in the process of this drawing, were a
6 potentially reportable finding might arise.

7 JUDGE SHON: You are not focusing entirely on
8 the facts that the cable tray interferes with the duct.

9 MR. SINKIN: Absolutely, that's all it was
10 meant to illustrate.

11 MR. AXELRAD: Mr. Chairman, I just cannot
12 imagine how CCANP can provide sufficient detailed
13 information with respect to each of the factors that
14 would have to be known by any engineer before he could
15 make a rational decision on any of these questions. I
16 just can't imagine how Mr. Sinkin can do that in the
17 course of the time we have available today and next week.

18 MR. SINKIN: My questions --

19 JUDGE BECHHOEFER: I guess you may continue for
20 the moment.

21 MR. SINKIN: Okay.

22 Q (By Mr. Sinkin) Mr. Goldberg, as I walked
23 through the drawings and explained what they were
24 attempting to illustrate, a cable tray to be installed
25 but the installers find that it cannot be installed

1 because already installed duct work interferes with that.
2 Have you seen that kind of condition in a nuclear power
3 plant?

4 A I'm sure at some point in time, I've probably
5 seen every manner of interference between cable tray and
6 duct, between duct and piping, between piping and
7 structure, duct and structure. It is well within the
8 realm of possibilities that almost anything might
9 interfere with anything else.

10 (No Hiatus.)
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1 Q When a designer at the South Texas Nuclear
2 Project sits down to design, to draw an installation
3 diagram for cable tray in a particular area of the
4 plant, does that designer have a master drawing that
5 demonstrates what's already installed in that particular
6 area of the plant?

7 MR. AXELRAD: Mr. Chairman, are we now talking
8 about current design efforts or are we talking about
9 design as it took place before May 1981 when Brown &
10 Root was on the project?

11 MR. SINKIN: Well, let's ask both.

12 Q (By Mr. Sinkin) In 1981, would it have been
13 common for the designer of a cable tray to be installed,
14 drawing -- the installation drawing just for the cable
15 tray, to have before him or her a master drawing that
16 would show what had already been installed in that same
17 area?

18 MR. AXELRAD: Well, I will object to that
19 question because if Mr. Sinkin is trying to develop
20 information with respect to design practice before May
21 1981, before the Quadrex report, then certainly he has
22 to tie that question to specific findings in the Quadrex
23 report.

24 Q (By Mr. Sinkin) Well, then, we'll just ask it
25 in terms of now, Mr. Goldberg.

1 MR. AXELRAD: And the reason we're asking for
2 it now is because we're trying to test Mr. Goldberg's
3 present competence to evaluate 50.55(e) conditions; is
4 that the Board's ruling before?

5 MR. SINKIN: Absolutely.

6 Q (By Mr. Sinkin) Okay. Now, today, Mr.
7 Goldberg, if you were on the project --

8 JUDGE BECHHOEFER: The company's present
9 competence is the issue.

10 MR. AXELRAD: Yes.

11 Q (By Mr. Sinkin) -- would you expect the
12 person drawing the installation design for cable tray to
13 have a master drawing that showed what had already been
14 installed in that area of the plant?

15 A In terms of present, there are three different
16 techniques that are currently in use on South Texas. In
17 heavily congested areas we have attempted to model those
18 areas showing the different types of equipment, duct
19 work, cable trays, piping. In some areas we didn't
20 model and where the congestion might be not quite as
21 severe, they have attempted to use composite drawings.

22 And more recently I think Bechtel is working
23 with some computerized equipment which can not only
24 provide a composite on a cathode ray tube type display,
25 but also has the program which can identify certain

1 interferences. But I wouldn't say that that's reached
2 the point in development where it is an exclusive tool
3 that's depended upon for interference control.

4 So, we have a spectrum of tools available.

5 JUDGE LAMB: Could I ask a question for
6 clarification on that? When you say model, you're
7 referring to physical models as opposed to mathematical
8 models or some other type?

9 THE WITNESS: Yes, Judge Lamb, we have a
10 plas --

11 JUDGE LAMB: Actual physical model of the
12 plant?

13 THE WITNESS: -- an actual plastic model of
14 selected areas of the plant. We do not have the whole
15 plant modeled.

16 Q (By Mr. Sinkin) And does that model show
17 what's in place only or what's ultimately going to be in
18 place?

19 A Well, the model is dynamic. It will reflect
20 the status of the design at a point in time, and then,
21 of course, as a design might progress beyond that
22 current status of the model, the model has to be
23 updated.

24 Q Okay. To simplify what we're dealing with,
25 let's limit it in this line of questioning to areas that

1 are not modeled and are not yet subject to control by
2 the computer modeling program so that the basic thing
3 available to the designer is the composite drawings.
4 Are you comfortable with that?

5 A All right.

6 Q Okay. The composite drawing, if correct,
7 should show the designer what is already installed in
8 that area; is that correct?

9 A That's correct.

10 Q Okay.

11 JUDGE SHON: Mr. Sinkin, it may well be that
12 it shows him not what is already installed in the sense
13 of it being physically in place, it may show him what is
14 projected so far in the design for installation.

15 Q (By Mr. Sinkin) Is that --

16 A I appreciate Judge Shon's point there. That's
17 the more correct situation. The composite drawing is a
18 reflection of the design status, not necessarily what's
19 actually in the plant.

20 JUDGE LAMB: Another clarification. Does a
21 composite drawing include information from all of the
22 disciplines, the electrical, the mechanical, as
23 contrasted with being composite drawings for each?

24 THE WITNESS: It's supposed to reflect the
25 basic structural outline for the area under discussion,

1 as well as the inputs from piping, electrical and
2 ventilation.

3 JUDGE LAMB: Including elevations as well as
4 plant layout?

5 THE WITNESS: Yes, sir.

6 Q (By Mr. Sinkin) I'm sorry. You said
7 structural outline plus piping, electrical and --

8 A Ventilation.

9 Q Ventilation, HVAC.

10 A And, of course, outlines of major machinery,
11 whether it be mechanical or electrical.

12 Q Well, if the designer looks at the composite,
13 are the items actually installed in any way
14 differentiated to him than any items that are projected
15 to be installed?

16 A No.

17 Q Okay. In the hypothetical as created by these
18 drawings, which again is an installation drawing calling
19 for a cable tray to be put in, but it turns out there's
20 duct in the way. Are you with me on what we're dealing
21 with?

22 MR. AXELRAD: I'm not sure I understand how
23 this hypothetical came up. We started discussing the
24 design process at STP right now. Is Mr. Sinkin now
25 assuming that a designer at STP has looked at these

1 composite drawings and is purposely placing cable trays
2 where HVAC's are presently located?

3 MR. SINKIN: All right. Let me ask some
4 preliminary questions. Maybe we can get it straight.

5 Q (By Mr. Sinkin) The hypothetical I'm trying
6 to present to you, Mr. Goldberg, is that for some reason
7 the installation drawing for the cable tray is sent to
8 the field. When the installation crew gets it, they
9 look at it, they turn to install the cable tray and
10 there is the duct and they can't install the cable
11 tray. Somehow that has happened. All right?

12 MR. AXELRAD: Is there any foundation for that
13 hypothetical in anything that's in this record?

14 MR. SINKIN: It's a hypothetical precisely
15 because it's a hypothetical.

16 MR. REIS: Mr. Chairman --

17 MR. SINKIN: Mr. Chairman -- wait a minute. I
18 have to object at this point, Mr. Chairman. We have
19 made quite clear exactly what we're trying to show and
20 that it's to be a test of Mr. Goldberg's 50.55(e)
21 knowledge. The Applicants are objecting in such a way
22 that we can't even get to the real questions.

23 I think the example is clear to everybody as
24 to what we're dealing with. It certainly has been Mr.
25 Goldberg's indication to me that he understands what I'm

1 talking about.

2 MR. REIS: Mr. Chairman? Can I say we've gone
3 on a half an hour now with these drawings. Why don't we
4 just ask very simple direct questions. At which point
5 would you be reporting on the 50.55(e), what would be
6 the status of what is installed and what is projected to
7 be installed, and let's ask the questions directly
8 without trying to put in drawings that are incomplete,
9 without trying to ask questions that are incomplete.
10 Let's do this directly.

11 We've wasted now a half an hour on this. At
12 first I said, well, he could go forward and try and show
13 that, he might have a basis for showing that. We didn't
14 have a basis at that point in the record to stop or to
15 see whether he could go forward. We now do have a
16 basis. We've gone forward for half an hour.

17 We think if there is a question of when there
18 is conflicting equipment, when it comes to be installed
19 or when in the design process, let's ask it very
20 directly. Ask the witness particularly looking at
21 50.55(e) under what conditions and when there would be a
22 necessity to report.

23 MR. SINKIN: Mr. Chairman, what we're
24 attempting to do with these drawings was create a very
25 specific example so we would not face objections to

1 questions that were too generalized, does any
2 interference represent a potentially reportable
3 deficiency. Obviously, that's not an acceptable
4 question or it gets an answer that's three hours long.
5 That's exactly why the hypothetical was created, to make
6 it a specific example.

7 All I have been attempting to do in this first
8 line of questioning is be sure that Mr. Goldberg and I
9 have the same thing in mind as to what the example is.
10 All of the objections have gone to what the example is.

11 I think Mr. Goldberg understands at this point
12 that what I'm saying is there's been an installation
13 drawing sent out to the field for the installation of
14 cable tray and the installation crew discovers they can
15 not install the cable tray because there is duct
16 occupying the same space where the cable tray is
17 supposed to go. That's a very simple hypothetical
18 example that is illustrated by the drawing. And I think
19 Mr. Goldberg and I can go forward from there.

20 JUDGE BECHHOEFER: Mr. Goldberg, do you
21 understand what he's driving at at this stage?

22 THE WITNESS: I think I've got a picture of a
23 condition that Mr. Sinkin is postulating. If I follow
24 what he's saying, we have one or the other installed, I
25 guess it's the duct is installed, and we're going to try

1 to install the cable tray and it's trying to take up the
2 same real estate that's currently occupied by the duct
3 and that's the postulated problem.

4 MR. SINKIN: That's it.

5 JUDGE BECHHOEFER: Okay. Now --

6 THE WITNESS: And if I add a few assumptions,
7 that we're talking about something that is
8 safety-related to put it in the context of nuclear.

9 MR. SINKIN: Right.

10 THE WITNESS: We're talking about designs that
11 have been released for construction.

12 MR. SINKIN: Right.

13 THE WITNESS: And now we have to apply the
14 reportability test.

15 Now, since I don't know whether this is the
16 only interference found on the projects as opposed to
17 this may be repetition of many interferences found on
18 the project, the first test has to be is this an
19 isolated situation. Clearly if it's isolated, it
20 doesn't come under the broad categorization of a
21 significant breakdown in quality assurance.

22 It's impossible for this matter to go
23 undetected because you can't put a cable tray inside of
24 a ventilation duct unless it's done with extreme care
25 far beyond the skill level of the work force on a

1 nuclear power plant as I understand them. So, I don't
2 think that that in itself would constitute
3 reportability.

4 On the other hand, if I had a situation where
5 I had in place a certain design control program for
6 interference control and through a large number of
7 interferences I found that the people in the design
8 organization were totally ignoring the application of
9 that program and that that was a systemic breakdown in
10 the quality of activities in the design organization,
11 that even though I don't have a physical deficiency
12 because I can't install things that interfere, I would
13 probably call that a reportable item because it would
14 represent a disregard for a control process and would
15 cause me some concern as to what were the attitudes in
16 the design organization. If they were to ignore that
17 process, it's quite possible they might be ignoring
18 other processes. So, that would be a potentially
19 reportable matter.

20 JUDGE BECHHOEFER: Now, what about the one
21 other possibility that I see at least of a single design
22 released for construction where we run into a barrier or
23 interference. Would or would that -- when does that
24 fall under the criteria of a deficiency in a design
25 released for construction?

1 THE WITNESS: Well, there's no question, Mr.
2 Chairman, that the design was released and there's no
3 question that there is a deficiency because there is an
4 interference. But you cannot leave it undetected. You
5 can't put it in the power plant. It represents a
6 physical impossibility. And I find that the rule would
7 be you can't have the kind of problem that we're talking
8 about. We have just reached a physical impossibility.

9 So, on an isolated basis, I would not treat
10 that as a breakdown. I wouldn't treat that as a
11 significant deficiency if left uncorrected because I
12 cannot leave it uncorrected. I can't even install it.
13 Whoever got there first owns it.

14 Q (By Mr. Sinkin) You said that if this were to
15 occur repeatedly, you would have a concern that the
16 interference control program was not being implemented;
17 is that --

18 A We certainly would want to investigate the
19 character of these repetitive acts to understand why do
20 we have a repetition of this kind of a situation. And I
21 said further that that might well turn out that there is
22 some systemic failure of persons to comply with the
23 requirements of the design process.

24 Q Right.

25 Looking for a moment at just a single failure

1 of this nature, would that cause you to be concerned
2 about the competence of the engineer that drew this?

3 A I must tell you, Mr. Sinkin, that if I only
4 had one interference on a nuclear power plant, I would
5 believe that I had the finest project ever in the
6 history of the industry for now and all time.

7 Q And you'd probably be right.

8 Let's move it up. You have four examples of
9 this all drawn by the same engineer. Do you then have
10 concerns about the competence of that engineer?

11 MR. AXELRAD: Mr. Chairman --

12 MR. REIS: Mr. Chairman --

13 MR. AXELRAD: -- at this time it's going to be
14 impossible for anyone to answer a question with respect
15 to the precise numbers that cause a serious enough
16 concern to report without any significant amount of
17 information with respect to what the actual
18 interferences were, what the actual problems were, what
19 the safety impacts were. It is not possible to answer
20 that question based upon only the number four.

21 MR. SINKIN: Well, let me ask a separate
22 question.

23 Q (By Mr. Sinkin) Do you have a program in
24 place, Mr. Goldberg, that would tell you or any other
25 manager of the engineering program if a particular

1 engineer repeatedly drew drawings that could not be
2 installed?

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3 MR. REIS: Mr. Chairman, I object to the
4 question. I don't know which contention it refers to at
5 this point. I really don't think it has enough
6 materiality. I guess the contention would be is the
7 plant being properly constructed.

8 MR. SINKIN: No.

9 MR. REIS: But I don't think it's probative
10 enough of that.

11 MR. AXELRAD: In addition to which we started
12 off this line of questioning allegedly in order to
13 explore Mr. Goldberg's competence to analyze a problem
14 under 50.55(e). And I do not see at this time how the
15 question of whether or not there is a program to review
16 the competence of engineers doing design has any
17 relationship to that question. Mr. Sinkin is going to
18 have to tie his question to some other issue before this
19 Board before we go any further on this line of inquiry.

20 MR. SINKIN: As a sort of offer of proof, Mr.
21 Chairman, the line of questioning would be do you have a
22 program that identifies engineers who repeatedly draw
23 designs that cannot be installed. If the answer is yes,
24 we do, the second question would be if you find there is
25 an engineer who has repeatedly drawn designs that could

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1 not be installed, is that a potentially reportable
2 deficiency. Very simple.

3 MR. REIS: Mr. Chairman? Mr. Chairman, may I
4 be heard for a moment?

5 JUDGE BECHHOEFER: Unless you're going to
6 argue that we shouldn't, we're going to sustain that
7 objection --

8 MR. REIS: Okay.

9 JUDGE BECHHOEFER: -- to that one. We don't
10 think the answer could be probative.

11 MR. SINKIN: All right.

12 Q (By Mr. Sinkin) If we're in the situation in
13 the field, the installation drawing has been delivered
14 to construction, construction looks at the drawing and
15 finds they cannot install the cable tray and a quality
16 assurance person is at that point at that time, does the
17 quality assurance person in your view write up a
18 deficiency?

19 A It's not likely because the first thing that
20 will happen is the constructor will inquire of
21 engineering through probably a field change request
22 pointing out that I cannot install or that person could
23 not install the cable tray because it was interfering
24 with the duct. And, in effect, the constructor is
25 asking for engineering assistance to resolve the

1 problem. Since there is no interference to physically
2 install, the man couldn't proceed, quality control would
3 not have a nonconforming condition yet to report.

4 Q How about quality assurance as opposed to
5 quality control which monitors design and engineering as
6 well as installation?

7 MR. AXELRAD: I'm sorry, Mr. Chairman, are we
8 talking --

9 Q (By Mr. Sinkin) Well, quality control is part
10 of quality assurance, but quality control is not all of
11 quality assurance. There is a quality assurance
12 department that audits design engineering, is there not?

13 A Quality assurance does from time to time audit
14 design engineering.

15 Q Assuming the person at that point in the field
16 is a member of that team as opposed to a QC inspector,
17 would there be a deficiency?

18 MR. AXELRAD: Let me make sure I understand
19 the hypothetical. There is a QA audit going on by the
20 quality assurance department and the QA auditor happens
21 to be in the field looking over drawings that have been
22 sent to the field? Is that the hypothetical?

23 MR. SINKIN: That's a nice one.

24 JUDGE BECHHOEFER: I'm not sure I heard the
25 word audit.

1 MR. SINKIN: I hadn't included the word audit,
2 but we'll make it that there's a QA audit going on and
3 part of that QA audit is that someone from QA
4 engineering is out in the field looking at drawings.
5 They're standing there and here comes this drawing that
6 doesn't work. Do they write up a deficiency?

7 A On the basis of a single observation, they
8 would probably write it up as a deficiency. But the
9 character of it would be obviously a little bit
10 different than if they had been witness to more than
11 one.

12 Q (By Mr. Sinkin) To change the hypothetical a
13 bit, what if the reason that there's an interference is
14 that the composite drawing was in error? The engineer
15 did everything right based on the composite drawing, but
16 the composite drawing is in error.

17 MR. REIS: Mr. Chairman --

18 Q (By Mr. Sinkin) Do you then --

19 MR. REIS: I'm sorry.

20 MR. SINKIN: Do you then have a potentially
21 reportable --

22 MR. REIS: Mr. Chairman, I object too in that
23 it has no relation to 50.55(e). What you are talking
24 about in 50.55(e) is a defect had it gone uncorrected,
25 had it remained uncorrected, that's the language. We've

1 had substantial testimony that it could not remain
2 uncorrected because you just can't construct two pieces
3 of equipment in the same physical space, therefore it
4 cannot go uncorrected. Therefore, the hypothetical has
5 no foundation and can have no foundation in anything
6 that scientifically could be done and it's improper.

7 MR. SINKIN: Mr. Chairman, I believe that
8 specific interpretation of 50.55(e) has been rejected
9 more than once in licensing proceedings in the NRC. I
10 don't have the cases with me today, but I'd be happy to
11 provide you with citations that that particular
12 interpretation of 50.55(e) is simply not correct.

13 MR. REIS: I think that's for the Board to
14 decide in the matter of law. But I think the important
15 thing is that we again had a question of whether it is a
16 pattern of breakdowns -- I mean a pattern of conflicts
17 which Mr. Goldberg testified to or a single one.

18 I don't think we're advancing the record or
19 getting anyplace in getting in these hypotheticals. We
20 have now been on the subject for forty-five minutes and
21 we're still not getting anywhere. I think Mr. Goldberg
22 gave a complete statement for the record and it's there
23 and I don't see where these hypotheticals are going any
24 further. They certainly don't conform with the words in
25 the regulation.

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1 MR. SINKIN: Well, Mr. Chairman, when I
2 changed the hypothetical to postulate a defect in the
3 composite drawing, then we're no longer dealing with the
4 problem of whether or not it can be installed, we're
5 dealing with a flaw in a more fundamental design
6 document. That's why I changed the hypothetical. We're
7 not dealing with this whole question of what 50.55(e)
8 means in terms of can it be installed or not.

9 I would presume that a defect in a composite
10 drawing that is used by many different designers to do
11 different things can result in other than designs that
12 cannot be installed. It can result in designs that
13 could be in error. So, I'm trying to get at that
14 different hypothetical now.

15 MR. AXELRAD: Mr. Chairman, but at this point
16 we have a hypothetical that has absolutely no bounds.
17 We don't know what type of composite drawing we're
18 talking about or what its theoretical uses were besides
19 this one example which has turned out to be not possible
20 in installation. And we, of course, don't know what
21 type of defects Mr. Sinkin is talking about. But if the
22 only defect is a defect which caused this particular
23 installation not to be able to take place, we're back at
24 the same non-physically possible hypothetical.

25 So, Mr. Sinkin has not provided any kind of

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1 hypothetical which is possible of answer.

2 MR. SINKIN: Mr. Chairman, I have a further
3 response when you're finished.

4 If you are at this point preparing to rule
5 that 50.55(e) cannot be triggered if a design as
6 released to construction cannot be installed, then we
7 would request time to brief that question before you
8 rule because we think that is an absolutely erroneous
9 interpretation of 50.55(e). Presumably a design could
10 be released that called for the reactor to be installed
11 upside down and that wouldn't be a deficiency because
12 they couldn't have installed it upside down. We think
13 that's simply an erroneous interpretation of that
14 regulation. You're carving out a whole new area of
15 deficiencies.

16 (No hiatus)

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1 JUDGE BECHHOEFER: We will sustain the
2 objection only on the grounds that the answer would not
3 be probative of anything we could figure out. We will
4 not rule as a matter of law one way or the other on this
5 impossibility of performance. I don't think we have to
6 reach that. We won't. But we will uphold the objection
7 on that question.

8 MR. SINKIN: Mr. Chairman, I guess in the form
9 of a motion to reconsider, I will offer one other
10 observation.

11 MR. REIS: Mr. Chairman, the staff would object
12 to that. It's re-arguing a ruling that has been made.
13 And whether it's a motion to reconsider or what -- how
14 it's labeled, it's still re-arguing a ruling that has been
15 made.

16 MR. SINKIN: And I'm specifically asking
17 permission to do that. I will be very short.

18 JUDGE BECHHOEFER: Okay, be very short. We'll
19 decide if we have to hear responses or not.

20 MR. SINKIN: The original hypothetical, the
21 hypothetical as created is cable tray cannot be installed
22 because there's an interference with the ductwork. There
23 are two possible reasons, primary reasons that
24 could have happened: The engineer incorrectly drew
25 the drawing or the composite drawing from which the

1 engineer worked did not accurately show where the duct
2 was.

3 We have explored one leg of that possibility
4 for potential reportability; we were attempting to
5 explore the second leg of that possibility and there were
6 a total of three questions to be asked to end the
7 cross-examination. I think two questions at this point.

8 JUDGE BECHHOEFER: The Board will sustain our
9 ruling; we don't think it would be probative. There are
10 many other reasons why there could be interferences. The
11 duct size could be wrong, it could be installed
12 incorrectly, too many other possibilities or
13 probabilities, potential methods for their to be
14 interferences for this to be very meaningful. So that's
15 why at least that last question, we will sustain the
16 objection.

17 MR. SINKIN: Mr. Chairman, how long did we plan
18 to go today?

19 JUDGE BECHHOEFER: 6:00.

20 MR. SINKIN: I think, Mr. Chairman, for the
21 sake of the record, I will move CCANP 85 into evidence
22 simply to illustrate the record, itself, as to what we
23 were talking about; I'm not offering it as an accurate,
24 to scale, drawing, but simply to make the record clear
25 what it is we're talking about.

1 JUDGE BECHHOEFER: Could that just travel with
2 the record?

3 MR. SINKIN: It could travel with the record.

4 JUDGE BECHHOEFER: It could remain for
5 identification and travel with the record, serve that
6 same purpose.

7 MR. SINKIN: That's fine.

8 MR. AXELRAD: Mr. Chairman, I would like to
9 point out we have spent three hours and 20 minutes,
10 considering a short recess, in the cross examination of
11 Mr. Goldberg this afternoon. And the substantive
12 questions inquired into my CCANP have been very limited
13 in number and have dealt only with a couple of the
14 specific findings which are at issue in this proceeding.

15 Mr. Goldberg has been on the witness stand all
16 day Friday, Saturday morning, three hours yesterday
17 afternoon, and three hours and 20 minutes today. I think
18 the time is drawing near for Mr. Sinkin to either
19 indicate that he is nearing the end of his
20 cross-examination or for the Board to consider imposing a
21 limit on the amount of time that such cross-examination
22 will continue. Does not appear to us that it's
23 developing a very useful record.

24 MR. REIS: Mr. Chairman, the staff would join
25 in that. Things are going along now, at relatively a

1 snail's pace. I think the Board can judge just allow
2 productive cross-examination is becoming. I think it's
3 incumbent upon the Board at this time to set a very
4 definite time limit for cross-examination.

5 MR. SINKIN: Mr. Chairman, I think a review of
6 the record will reveal that our cross-examination was
7 going fairly expeditiously until today, the great deal of
8 time -- I didn't expect to take more than twenty minutes
9 with these drawings to explain to them what they were and
10 to ask the five or six or eight questions I had about
11 them. But it took quite a lengthy time because of the
12 Applicants' objection and the NRC's objection. I don't
13 think that filling the record with objections is a reason
14 to argue that the cross-examiner should be cut off.

15 And I think if you review the record of the
16 cross-examination of Mr. Goldberg, the questions have
17 been focused, they've been on the substance of his
18 testimony, the substance of the issues in this
19 proceeding, we've been moving along as expeditiously as
20 we can. And I don't believe there's any basis for
21 cutting off my cross-examination at any time in the near
22 future.

23 JUDGE BECHHOEFER: Mr. Sinkin, would you like
24 to approach the bench for a minute?

25 (Discussion off the record.)

1 (CCANP Exhibit 86 marked
2 for identification.)

3 JUDGE BECHHOEFER: Okay, back on the record.

4 Q (By Mr. Sinkin) Mr. Goldberg, I'm going to
5 hand you a document marked for identification as CCANP 86
6 and ask you to look at it and see if you recognize it.

7 Do you recognize this as a letter that you sent
8 to Mr. Halligan of the Bechtel Power Corporation?

9 A Yes. I haven't finished reading it. I haven't
10 seen it in a long time, but it's certainly a letter
11 carrying my signature.

12 Q I would call -- direct your attention to the
13 part of the letter that we're really going to deal with
14 here and that is the last sentence or the last two
15 sentences. Perhaps to be complete, we better start at
16 the sentence that has the word "such documentation would"
17 on the second page. Do you see that, second page, second
18 line, "such documentation would." If you would read that
19 to the end.

20 A Let me just get the context of what we're even
21 talking about.

22 All right, where would you like me to read?

23 Q Have you read the whole letter now, Mr.
24 Goldberg?

25 A I've perused the whole letter. Where would you

1 like me to read?

2 Q In the last paragraph on the second page, you
3 state that in the last sentence, "Please note that
4 although it may not be evident by reading the Quadrex
5 report due to its lack of explicit detail, three items
6 (Line Items 1, 100 and 146) are are also related
7 deficiencies reported to NRC prior to the Quadrex
8 review."

9 Do you see that sentence, Mr. Goldberg?

10 A Yes.

11 Q Was it your view on April the 7th 1982 that
12 those three line items in Bechtel Task Force report
13 related to deficiencies reported to NRC prior to the
14 Quadrex review?

15 A It was my view on April 7th 1982 that those
16 three line items were related to deficiencies reported to
17 the NRC prior to the Quadrex review.

18 Q Was it your view in May of 1981 that those
19 three deficiencies related to prior notifications to the
20 NRC?

21 A I'd have to see what the items are.

22 Q Fine.

23 MR. AXELRAD: Are you going to show him the
24 items?

25 MR. SINKIN: I would ask that counsel share

1 with him the Applicants' exhibit that's been marked and
2 entered already, the Bechtel Task Force report.

3 MR. AXELRAD: Those aren't items in the --

4 MR. SINKIN: It hasn't been entered yet? Okay,
5 fine.

6 I don't have my copy with me, Mr. Goldberg, so
7 we'll belay that for the moment.

8 MR. REIS: Can we ask that the record -- Mr.
9 Sinkin at least state for the record where those line
10 items appear under those numbers so that the staff did
11 look at what those line items may be in relation to?

12 Q (By Mr. Sinkin) Perhaps it's better for the
13 witness to, if he can, based on the letter which talks
14 about the task force report done by Bechtel, tell us
15 whether those three line items refer to items in the task
16 force report done by Bechtel.

17 A Mr. Sinkin, you know, it's been, you know,
18 almost three and-a-half years since I wrote this letter.
19 Not quite three and-a-half. But the point is it's over
20 three years. I'd have to look at both the Quadrex report
21 again and also look at the Bechtel assessment to find out
22 whether I was making reference to one or the other.

23 It appears that I may have been making
24 reference to the Quadrex report, but I would just be
25 guessing. I think we have to break out those documents

1 and look.

2 Q Okay. We won't take that time this afternoon,
3 Mr. Goldberg. We'll do that at another date.?

4 When you went to meet with Mr. Sells --

5 MR. REIS: Mr. Chairman, I move to strike the
6 previous question and answer in that it's meaningless.
7 We have a reference to line items 1, 100 and 146, and
8 it's just meaningless as to what those matters are. We
9 don't have any sort of a record.

10 MR. SINKIN: You can do whatever you want, Mr.
11 Chairman.

12 JUDGE BECHHOELFER: Well, the line items in this
13 report seem to be tied to specific findings; would it be
14 useful to identify them?

15 MR. SINKIN: Mr. Goldberg has said in order to
16 identify the items we would have to pull out the Quadrex
17 report and the Bechtel task force report and see if the
18 two match up and remind him of what his letter said;
19 that's a process of time I'd rather not use right now.
20 We can certainly do it.

21 MR. AXELRAD: In addition to which, Mr.
22 Chairman, I do not believe those are line items in the
23 Quadrex report.

24 MR. SINKIN: I'm sorry if I said Quadrex
25 report. I meant Bechtel task force report.

1 JUDGE BECHHOEFER: I was saying that the line
2 items relate to specific Quadrex findings by the Bechtel
3 task force report.

4 MR. SINKIN: That's correct.

5 JUDGE BECHHOEFER: For instance, line item one,
6 just for example, seems to be a portion of finding
7 4.1.2.1(a), that is; appears on page B-1 one of the --
8 task force report.

9 MR. AXELRAD: I understand. But Mr. Sinkin
10 expressed the preference and not taking the time to do
11 this now and I suggest we do that.

12 JUDGE BECHHOEFER: I don't want to rule on the
13 motion to strike prior to the the time that --

14 MR. REIS: I withdraw the motion.

15 MR. SINKIN: The motions been withdrawn.

16 JUDGE BECHHOEFER: Okay.

17 Q (By Mr. Sinkin) Mr. Goldberg, when you went to
18 meet with Mr. Don Sells during the first week of
19 licensing hearings in Bay City, did you take the Quadrex
20 report to that meeting?

21 A I thought I had taken it to the meeting, yes,
22 sir.

23 Q You say you thought you took it to the meeting.
24 Did you take it to the meeting or did you not take it to
25 the meeting?

1 A That's my recollection, that I took the report
2 to the meeting.

3 I'm well aware of the fact that Mr. Sells has a
4 different recollection. And on that point, we differ.

5 Q And is it you are recollection that you took
6 one volume or all three volumes?

7 A I believe I had all three with me.

8 Q And is it your recollection that Mr. Sells read
9 through those volumes while you all talked about the
10 Quadrex report?

11 A My recollection was that he perused possibly
12 only volume one, the executive summary. I do not believe
13 he looked at anything else as my memory serves me.

14 Q Did you give Mr. Sells a copy of that report to
15 read at that time to take away with him?

16 A No, I did not.

17 A I did inform Mr. Sells at the time that the
18 report would be on file within Houston Lighting & Power
19 Company and he was free to read it at his leisure.

20 Q Mr. Goldberg, I hand you a document which I
21 request be mark for identification as CCANP 87 and ask
22 that you review that document.

23 (CCANP Exhibit 87 marked
24 for idntification.)

25 Q (By Mr. Sinkin) Is this document, Mr.

1 Goldberg, your sworn statement to the nuclear regulatory
2 investigator Mr. Driskill, as to the events surrounding
3 the reporting or non-reporting of the Quadrex report to
4 the Nuclear Regulatory Commission?

5 A Yes, it is.

6 MR. SINKIN: Mr. Chairman, I would move CCANP
7 87 into evidence.

8 MR. AXELRAD: No objections.

9 MR. REIS: No objection.

10 JUDGE BECHHOEFER: Without objection, CCANP 87
11 will be admitted into evidence.

12 One inquiry. Is this the statement that would --
13 that would accompany INE report 82-02?

14 MR. AXELRAD: Yes, I believe --

15 MR. REIS: I believe it's summarized in there.

16 MR. SINKIN: It's summarized in 82-02; it
17 wasn't actually attached to 82-02. It was later
18 produced.

19 Q (By Mr. Sinkin) Mr. Goldberg, I'm not going to
20 have any questions about that statement at this time. So
21 you if you will turn to page 51 of your testimony, answer
22 81 --

23 JUDGE LAMB: Excuse me, is that page 51?

24 MR. SINKIN: Page 51, answer 81.

25 Q (By Mr. Sinkin) Mr. Goldberg, when did you and

1 Mr. Oprea first discuss the hiring of a third party
2 reviewer for Brown & Root's design and engineering?

3 A I would say it was either in late November or
4 early December of 1980, maybe -- let's say it was
5 somewhere from late November through the middle of
6 December of 1980.

7 Q Did you and Mr. Oprea discuss the ongoing
8 review after each of the Quadrex briefings and I have in
9 mind there was one on March the 18th, one on April the
10 13th and one on April the 30th?

11 A I'm not sure I had much dialogue if any, with
12 Mr. Oprea following the March meeting. I'm reasonably
13 certain I did after the April 13th meeting.

14 Q And what did you and Mr. Goldberg talk about in
15 terms of what Quadrex had to say in the April 13th
16 briefing?

17 MR. AXELRAD: I'm sorry, is that question meant
18 to be --

19 Q (By Mr. Sinkin) What did you and Mr. Oprea
20 have to discuss; what did you discuss?

21 A I think I just gave Mr. Oprea a general update
22 that the review seemed to be identifying a number of
23 areas where the engineering was potentially further
24 behind than anybody may have realized; that there was a
25 considerable amount of analysis work remained to be

1 undertaken that in certain instances hadn't been started;
2 that there may well be some matters that may prove to be
3 reportable once we've got more information from Quadrex
4 and have had a chance to evaluate the significance.

5 Q Did you go into any detail with Mr. Oprea on
6 what Quadrex was finding or did you give him basically a
7 general overview that there were things behind that
8 shouldn't be behind or did you go into detail about that?

9 A I suspect it was more of a general overview; if
10 I got into any detail, I can't recall specifically where
11 that might have been.

12 Q And after the April 30th meeting, briefing, by
13 Quadrex, did you meet with Mr. Oprea again?

14 A I did call Mr. Oprea, as I recollect, and had a
15 conversation with him to the effect that we had gotten
16 practically the whole report; we still didn't have
17 answers to certain questions and we still didn't have the
18 written document in hand.

19 And I told him that we expected to get the
20 document within a matter of a week, and that we would
21 have to undertake an expeditious review once in hand to
22 determine if there were any matters for the
23 reportability.

24 Q Was it the April 30th briefing that Quadrex
25 used a series of overhead slides to demonstrate what they

1 were finding?

2 A I believe Quadrex used overhead slides for both
3 the April 13th as well as the April 30th meetings.

4 (No Hiatus.)
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1 MR. SINKIN: I'd ask that this be marked as 12342
2 CCANP Exhibit 88 for identification.

3 Q (By Mr. Sinkin) And I would ask Mr. Goldberg
4 if you recognize these as productions of the slides that
5 were used in the Quadrex briefing on April 30th?

6 A It does appear somewhat familiar. There seems
7 to be any number of them that were ultimately in the
8 report, so I'd say it looks like these are the slides.

9 Q And is it your understanding that these same
10 slides were used in the briefing of Brown & Root on the
11 May the 1st?

12 A That is my understanding, yes.

13 MR. SINKIN: Mr. Chairman, I would move CCANP
14 Exhibit 88 into evidence subject to the Applicants
15 having time to assure themselves that this is what it
16 says it is. It was provided by them on discovery and
17 I'm sure they want to check that it is complete and
18 accurate. But subject to that, I offer it into
19 evidence.

20 MR. AXELRAD: I have no objection, Mr.
21 Chairman.

22 It might be useful, though, when an exhibit of
23 this type is produced and Mr. Sinkin has it marked for
24 identification if just for the record he identifies what
25 it consists of or number of pages or things of that kind

1 so we won't have any difficulty in the future.

12343

2 MR. SINKIN: Fine.

3 JUDGE BECHHOEFER: I think you probably should
4 since these are not numbered.

5 MR. SINKIN: CCANP 88 by my count has
6 twenty-one pages. The first page has a handwritten
7 notation in the upper right corner 8 A with a circle
8 around it. The printed material starts "B&R systems
9 level integration." And on each page is a presentation
10 in a different area by Quadrex. Some of them seem to be
11 general presentations, others are specific discipline
12 findings that are presented.

13 MR. REIS: The Staff has no objection.

14 MR. AXELRAD: I think that characterization
15 perhaps went a little too far, but --

16 MR. SINKIN: I'm sorry.

17 MR. AXELRAD: There is a heading on the first
18 few pages and thereafter it is just a number such as
19 4.1.2.1(a) which may or may not be a specific finding in
20 the Quadrex report.

21 MR. SINKIN: Right.

22 JUDGE BECHHOEFER: For what it's worth, there
23 are some handwritten notes saying slides used and the
24 rest is unintelligible.

25 MR. SINKIN: Yeah, illegible. There are some

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1 handwritten notes on the first page, but all I can read 12344
2 is slides used.

3 JUDGE BECHHOEFER: In any event, CCANP Exhibit
4 88 will be admitted.

5 Q (By Mr. Sinkin) Turning now, Mr. Goldberg, to
6 the meeting on May 11th, you and Mr. --

7 MR. AXELRAD: Excuse me, Mr. Chairman.

8 MR. SINKIN: I'm sorry.

9 MR. AXELRAD: I'm sorry. I just had a
10 thought. I just want to make sure for purposes of
11 clarification, there's been no testimony with respect to
12 slides. That exhibit has been admitted only for the
13 purpose of showing that those were the slides used at a
14 briefing on April 30th and not for the truth of any of
15 the matter stated therein. There has been no testimony
16 going to the substance of the document. I just want to
17 make sure we understand that.

18 Q (By Mr. Sinkin) All right, Mr. Goldberg, let
19 me deal with that a little bit then.

20 MR. SINKIN: The exhibit was offered as the
21 slides that were used and was accepted as the slides
22 that were used.

23 MR. AXELRAD: Right. And not for the truth of
24 the matter therein.

25 JUDGE BECHHOEFER: For what it's worth, I

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1 think I asked Mr. Goldberg a question about these slides
2 yesterday or the day before. They still don't have to
3 be -- for the purposes I asked them, they don't have to
4 be admitted, however.

5 MR. AXELRAD: They have been admitted as
6 slides, but not for the truth of the matter therein.

7 JUDGE BECHHOEFER: Right.

8 Q (By Mr. Sinkin) Mr. Goldberg, starting with
9 page 1, B&R's systems level integration, when Quadrex
10 put this slide up, however they did that when they
11 projected it, was there discussion of this particular
12 finding?

13 A As I recall, there was virtually little or no
14 discussion of any of these at that particular meeting.
15 As I recollect, the purpose of the slide show was to
16 show us where Quadrex seemed to be coming out.

17 There were some questions, as I recall, that
18 had been raised originally on this review which occurred
19 back on April 13th. We did talk about some of those
20 issues, many of which were still questions. And this
21 was more of a preview of the kinds of things we were
22 likely to find in the report once the report came out.
23 But there were still some caveats that Quadrex was
24 putting the report together and that things could change
25 in certain areas. This wasn't their final report, this

1 was just parts of it.

2 Q The first four pages, five pages -- I'm sorry,
3 six pages, Mr. Goldberg, have headings on them, whereas
4 the latter pages all begin with a number. Do you note
5 that distinction?

6 A Yes.

7 Q Were the first six findings presented to you
8 as generic findings as contrasted with specific
9 discipline findings?

10 A I believe they were general observations which
11 later appeared as generic findings in the report. So,
12 for all intents and purposes, they certainly could be
13 characterized as generic.

14 Q Did Quadrex characterize them as generic at
15 that time?

16 A They might well have. I'm sure the
17 connotation of it being of broader perspective than of
18 an isolated observation was our understanding. I
19 suspect the word generic could have been used. I know
20 if it wasn't that, it was general. It was words that
21 would have suggested a broader perspective.

22 Q In terms of the issues that were still
23 questions from the April 13th briefing, can you identify
24 what those issues were?

25 A No, I can't. As I recall, this wasn't a

1 report, these were parts of a report yet to be issued.
2 I couldn't begin to recall what was characterized with
3 caveats. I mean, you're asking me to go back to a
4 verbal conversation that was held many years ago. I'd
5 be just guessing if I could tell you what exactly was
6 said about each item.

7 Q Moving along to your meeting on May the 11th
8 with Mr. Oprea and Mr. Jordan at which youall, you and
9 Mr. Oprea briefed Mr. Jordan on the Quadrex report
10 findings. Do you remember that meeting?

11 A Yes.

12 Q Was that the first time that you had discussed
13 the Quadrex study with Mr. Jordan since it had begun?

14 A Yes. That's the only briefing that I'm
15 personally familiar with that Mr. Jordan received, at
16 least from myself certainly. I can't speak to what
17 briefings Mr. Oprea may have given him between the time
18 we talked about commissioning the study until the time I
19 made my briefing.

20 Q At the May 11th meeting, did you give Mr.
21 Oprea and Mr. Jordan a copy of the report?

22 A They all, I believe, had copies there and I
23 don't recall whether they kept them or what they did
24 with them.

25 Q So, when you arriveed at the meeting, each of

1 you had brought a report with you?

2 A No, I think I had some copies of the report
3 there and I frankly don't know whether they kept them or
4 they left them. I had a report there, but I can't
5 recall whether the people actually took it away with
6 them or left them on the table.

7 Q Did you sit down with them and read through
8 the report highlighting certain parts of it? How did
9 you convey to Mr. Jordan what was in that report?

10 A Well, I had some agenda which I can't tell
11 whether it was right out of the report or it was in my
12 head or a combination of the two. And it was to go over
13 the high points of where I felt the report had clearly
14 signaled some areas within Brown & Root's engineering
15 operation that they better be aware of as it will
16 clearly have an influence on the timely completion of
17 the project.

18 Q You've looked at that agenda recently and you
19 don't know if it represents --

20 A I'm saying that agenda was either reading out
21 of the report or what I had in my head or some
22 combination of the two.

23 Q Do you still have that agenda?

24 A What was in my head?

25 Q No, the piece of paper.

1 A No, I said the agenda was a combination of
2 what thoughts were retained in my mind as foremost
3 elements to discuss, coupled with having the report
4 available to go through it and pick out matters that I
5 wanted to make sure they were aware of.

6 Q When you used the term agenda, you did not
7 mean to indicate that there was a piece of paper that
8 contained agenda?

9 A I hope I was clear that the agenda was a
10 combination of what was in my head and what was on the
11 report. I didn't talk about another piece of paper.

12 Q Okay. All right.

13 Page 51, line 16 of your testimony, Mr.
14 Goldberg, you state that you have told Mr. Jordan about
15 the identified weaknesses in the Brown & Root
16 engineering organization. What were the specific
17 identified weaknesses that you told Mr. Jordan about?

18 A I think the areas that I highlighted that I
19 saw as particularly significant was the fact that they
20 had very limited inhouse nuclear analysis capability,
21 that most of the nuclear analysis that had been
22 performed on the project had been performed by the NUS
23 Corporation. And I expected that if Brown & Root was to
24 continue to perform nuclear analysis in any kind of
25 timely way, they would have to be very dependent on

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I felt that there was a number of indications that they had too few really solid managers, given the size of the organization, that it was going to take to get the job done and that they were going to have to infuse more seasoned, experienced persons in any number of disciplines in order to enable us to go forward with any kind of a timely program. We just were working with too few resources to get the job done in any reasonable time frame.

Q Were there any other weaknesses that you identified to Mr. Jordan other than the resources weakness?

A Well, I certainly pointed out that I didn't think they had a very good understanding of how to design nuclear heating ventilation and air conditioning. I highlighted the fact that there was a question regarding the adequacy of the verification program they had in place for verifying computer programs, and that that represented a fairly substantial question that had to be answered.

I may have -- in fact, I'm sure I probably mentioned that we had some question regarding the adequacy of their verification of shielding analyses. I clearly highlighted those. The concern about the

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1 numbers of people.

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2 I know I was very much concerned and probably
3 the most lasting impression that I got out of the whole
4 report was the absence of the start of the work on pipe
5 break outside containment. That struck me as a very
6 substantial portion of work that remained to be
7 accomplished. And as I think I commented earlier, it
8 was my feeling that that work should have probably
9 gotten started two to three years earlier. And if that
10 perception was correct, I didn't know what impact it
11 would have on the completion of the project, but I was
12 reasonably persuaded that it would never be finished in
13 the time frame being predicted by Brown & Root.

14 Q Is there anything else you conveyed to Mr.
15 Jordan as weaknesses in the Brown & Root program that
16 you remember?

17 A I pretty much think those are the high points
18 of the conversation. There were occasional questions
19 that I'm sure were asked. I can't really recall the
20 particular questions, per se, but at least the substance
21 of what I remember of that conversation I have just
22 described.

23 Q One of the items you pointed out was that
24 Brown & Root had no good understanding of how to design
25 nuclear HVAC. Were there other areas that you perceived

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1 Brown & Root did not have a good understanding of how to
2 do nuclear design?

3 A Well, we talked about nuclear analysis. Now,
4 nuclear analysis is kind of a broad area that involves
5 dealing with the consequences of postulated energy
6 releases inside containment, that deals with, of course,
7 consequences of pipe break outside of containment as
8 well. There are certain aspects of the radiological
9 analysis that are related to the nuclear analysis.

10 I felt that lack of resource constituted a
11 concern because unless they contracted for these
12 services from the outside, then those services would not
13 be available.

14 Q Well, but my question really went to a lack of
15 understanding on the part of Brown & Root of how to do
16 certain things and you mentioned nuclear design and
17 HVAC. Are you saying that in these other areas of
18 nuclear analysis, the consequences of postulated energy
19 releases inside containment or the radiological
20 analysis, Brown & Root also lacked an understanding of?

21 A They had very few people who had a good
22 understanding. They didn't have sufficient numbers of
23 people with that correct understanding, so they would be
24 very dependent upon outside resources to be able to
25 carry out the responsibilities in that particular area.

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1 JUDGE BECHHOEFER: Mr. Sinkin?

2 MR. SINKIN: Yes.

3 JUDGE BECHHOEFER: In current terms of the
4 current topic you're on here, how close are you to
5 conclusion of that, it being a little after 6:00 right
6 now?

7 MR. SINKIN: One more question.

8 JUDGE BECHHOEFER: Will that be a good time to
9 break then?

10 MR. SINKIN: That will be fine.

11 JUDGE BECHHOEFER: Okay.

12 Q (By Mr. Sinkin) In the topics you list on
13 page 51 of your testimony, Mr. Goldberg, at line 18, you
14 include the lack of analyses to confirm the preliminary
15 design. Does that apply to the items you've already
16 mentioned or does that cover additional items?

17 A I'm sorry. Where are you reading from, Mr.
18 Sinkin?

19 Q Page 51.

20 A Yes.

21 Q Line 18.

22 I'm sorry, strike that question. That was not
23 an identified weakness, that was a large amount of
24 design work yet to be performed, so it doesn't relate to
25 weakness. So, strike that question and I'm finished.

1 JUDGE BECHHOEFER: Before we break, we think
2 we ought to set a specific time when we're going to hear
3 the argument about quashing subpoenas. I realize not as
4 much as the Applicants' case will have been completed as
5 we expect, but we would hope that by maybe the first
6 thing Friday morning we could hear those arguments. We
7 would like to hear those before we break at the end of
8 this week.

9 MR. SINKIN: First thing Friday morning you
10 said?

11 JUDGE BECHHOEFER: Right.

12 MR. SINKIN: That's fine.

13 MR. AXELRAD: Fine. We will try to prepare a,
14 if we can, written motion to quash by Thursday evening
15 so the Board and the parties can have the advantage of
16 that.

17 JUDGE BECHHOEFER: That's up to you.

18 MR. AXELRAD: I understand.

19 JUDGE BECHHOEFER: We're not requiring it, but
20 if you submit it, we'll read it.

21 MR. AXELRAD: Is this also related to the
22 Staff witnesses or what is the status of the --

23 MR. REIS: There's still a motion outstanding
24 that we thought we were going to reply to orally down
25 here on compelling the testimony of Messrs. Dircks,

1 Collins, Seyfrit, Driscoll and I don't remember --

2 MR. SINKIN: Herr.

3 MR. REIS: All right.

4 JUDGE BECHHOEFER: We ought to hear that,
5 too.

6 MR. SINKIN: I would think -- either way. It
7 doesn't matter.

8 JUDGE BECHHOEFER: We would like -- in
9 connection with the motion with respect to the staff, we
10 would like to put the Staff on notice that while we do
11 not necessarily expect Mr. Dircks to be here, we would
12 like some staff witness to be able to address Mr.
13 Dircks' testimony to which Mr. Sinkin quoted from in
14 his --

15 JUDGE SHON: His testimony before Congress.

16 JUDGE BECHHOEFER: Before Congress. And what
17 he had in mind and -- well, whatever. It does not
18 necessarily have to be Mr. Dircks, but perhaps one of
19 the staff witnesses particularly from headquarters could
20 address that. That would bear on that motion that we'll
21 deal with on Friday. We do want that subject covered.

22 MF. SINKIN: Well, of course, I would be
23 rerelement to have someone else testify to what was in
24 Mr. Dircks' mind as to what he testified in Congress.

25 JUDGE BECHHOEFER: Well, we'll discuss that

1 later. But we would like the Staff to tell us how they
2 might plan to address that question.

3 With that, we'll adjourn till -- well, wait a
4 minute. Mr. Newman?

5 MR. AXELRAD: Well, before we go off the
6 record, one of the things I would like to ask is where
7 we now stand with respect to the status of Mr.
8 Goldberg's cross-examination. We do have to plan other
9 witnesses. We had been told by the Board yesterday, I
10 believe yesterday, that possibly by Wednesday afternoon,
11 which is tomorrow afternoon.

12 JUDGE BECHHOEFER: That won't happen.

13 MR. AXELRAD: That will not happen?

14 JUDGE BECHHOEFER: We are still hoping that we
15 will finish with Mr. Goldberg by the end of tomorrow.
16 We don't even know that. But we have conveyed that to
17 Mr. Sinkin and that means he has to finish sometime
18 before the end of tomorrow. The Board has a number of
19 questions.

20 MR. AXELRAD: Fine. But there is a reasonable
21 expectation that Mr. Goldberg may be finished tomorrow?

22 JUDGE BECHHOEFER: There's a chance. I can't
23 put any probabilities on it.

24 MR. AXELRAD: Thank you, Mr. Chairman.

25 JUDGE BECHHOEFER: It's not likely that he'll

1 be finished in time -- it's almost impossible that he'll
2 be finished in time to start any other witness tomorrow,
3 so that I can assure you of.

4 MR. AXELRAD: Thank you.

5 (Hearing recessed at 6:10 p.m.)
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CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceedings before
the UNITED STATES NUCLEAR COMMISSION in the matter of:

NAME OF PROCEEDING: EVIDENTIARY HEARING
HOUSTON LIGHTING AND POWER COMPANY,
ET AL (SOUTH TEXAS PROJECT, UNITS 1
AND 2)

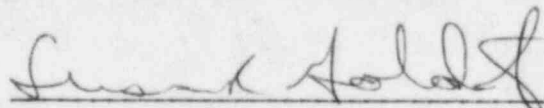
DOCKET NO. : STN 50-498-OL
STN 50-499-OL

PLACE: HOUSTON, TX

DATE: Tuesday, July 16, 1985

were held as herein appears, and that this is the
original transcript thereof for the file of the United
States Nuclear Regulatory Commission.


R. Patrick Tate, CSR


Susan R. Goldstein, CSR

Official Reporters