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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of §
HOUSTON LIGHTING & POWER COMPANY § Docket No. 50-466
(Allens Creek Nuclear Generating §
(Station, Unit 1) §

SUPPLEMENTAL DIRECT TESTIMONY OF
JEROME H. GOLDBERG ON TECHNICAL QUALIFICATIONS

Q. Mr. Goldberg, have you previously testified in this proceeding?

A. Yes. I testified on October 7 and 8, 1981, in connection with the issue of HL&P's technical qualifications to construct ACNGS, which is TexPirg Additional Contention 31.

Q. Have you read the Licensing Board's order of January 28, 1982, wherein additional testimony was requested on HL&P's technical qualifications in light of the "Design Review of Brown & Root Engineering Work for the South Texas Project," prepared by the Quadrex Corporation in May, 1981 (hereinafter "Quadrex Report/B&R")?

A. Yes, I am familiar with the Order.

Q. Are you familiar with the Quadrex Report/B&R?

A. Yes, I am familiar with the report. It was prepared by Quadrex at my request.

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2 Q. Would you explain why you asked Quadrex to undertake
3 this review?

4 A. As was indicated in my earlier testimony, I was hired
5 by HL&P to bring to the company a person with broad ex-
6 perience in design and construction of nuclear power
7 plants. After joining HL&P and examining the nature of
8 some of the engineering problems at the South Texas
9 Project, I made some preliminary engineering observations
10 that suggested that a more thorough review of Brown &
11 Root's engineering work was appropriate. After consid-
12 ering which engineering firms were competent, willing
13 to do a third party review and previously uninvolved
14 with engineering of the South Texas Project, we selected
15 Quadrex. No regulation, order or suggestion from the
16 NRC led to the commissioning of the Quadrex Report/B&R.
17 Instead, that report was prompted by my determination
18 to see that HL&P spared no effort in evaluating the
19 work of its architect/engineer.

20 Q. What significance did you attach to the result of the
21 Quadrex review?

22 A. The Quadrex review highlighted a number of concerns
23 with nuclear engineering activities on the project,
24 although it did not place these concerns in a clear
perspective or substantiate all of them. As a matter

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2 of fact, a preliminary assessment by a Bechtel Task Force
3 has now been completed. That Task Force found that over
4 two-thirds of the Quadrex/B&R findings relate to matters
5 that would have either been resolved by previously
6 on-going Brown & Root activities or would have required
7 no further action. In general, Bechtel found that many
8 of the Quadrex/B&R findings "were not as serious as had
9 been perceived by Quadrex". Bechtel's final evaluation
10 of the Quadrex Report/B&R will not be ready until later
11 this year.

12 Q. Did the Quadrex Report/B&R provide the single most
13 significant reason for terminating Brown & Root as
14 architect/engineer at the South Texas Project?

15 A. No. Brown and Root's lack of engineering productivity
16 was holding back construction, thereby affecting project
17 costs and scheduling. As a result Brown & Root's work
18 was terminated. The Quadrex Report/B&R was simply
19 another indication that some of our concerns might be
20 well founded.

21 Q. In response to the Board's order, can you explain why
22 the Quadrex Report/B&R was not addressed in prior
23 testimony in this proceeding?

24 A. We did not consider the report to be relevant to our
prior testimony unless, of course, one considers the

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2 fact that HL&P took the initiative in commissioning the
3 engineering review to be a positive reflection on the
4 company's character and competence as well as its
5 commitment to assure a sound design of the South Texas
6 Project. In our view the primary thrust of the report
7 is not HL&P's technical competence or construction -
8 related problems of the type alleged in TexPirg's con-
9 tention. Moreover, the changes in HL&P's organization,
10 which Mr. Oprea and I described earlier and which were
11 begun before the issuance of the Quadrex Report/B&R,
12 were designed to cope with a broad range of problems at
13 STP, including a number of the problems that were later
14 reported by Quadrex.

15 Q. Does the existence of the Quadrex Report/B&R change any
16 of your prior testimony?

17 A. No.

18 Q. Have you made any organizational changes since you last
19 testified because of the Quadrex Report/B&R?

20 A. We have added an engineering assurance department since
21 I last testified. However, the decision to add that
22 group to our organization was not made solely as a
23 result of the Quadrex Report/B&R. It was my determina-
24 tion that we needed to enhance our engineering review
capability and the Quadrex Report/B&R confirmed that

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2 determination. This group will serve the needs of
3 Allens Creek as well as STP.

4 Q. Do you foresee any other changes that would be required
5 in HL&P's organization because of the Quadrex Report/B&R?

6 A. No, not at this time. I must emphasize that the Quadrex
7 Report/B&R deals with Brown & Root's engineering work.
8 As I testified earlier in these hearings, it is not
9 HL&P's job to do the engineering work of the architect/
10 engineer. It is our job to see that they do the job
11 right. When we concluded that Brown & Root could not
12 attract and retain the resources necessary to complete
13 the project in a timely and effective fashion, we
14 terminated them. I think that is very dramatic proof
15 of HL&P's commitment to effective management of its
16 nuclear projects.

17 Q. Did you retain Quadrex to review the engineering work
18 being done by Ebasco on Allens Creek?

19 A. Yes, we did. A copy of their report, which was previously
20 provided to the Board and the parties, is attached
21 hereto as Applicant Exhibit _____. The Quadrex Report
22 on Ebasco ("Quadrex Report/Ebasco") demonstrates that
23 Ebasco's work on Allens Creek meets or exceeds industry
24 standards.

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2 Q. Is it your opinion that Ebasco has and will continue to
3 perform so as to prevent the types of problems noted in
4 the Quadrex Report/B&R from happening at Allens Creek?

5 A. Yes. Nothing in the Quadrex Report/Ebasco indicates
6 that the types of problems noted in the Quadrex Report/
7 B&R exist at Allens Creek. In this regard, assuming
8 solely for purposes of this testimony that the generic
9 findings in the Quadrex Report/B&R cited by Mr. Doherty
10 are valid, we have asked Mr. Louis J. Sas of Ebasco to
11 describe how the Ebasco engineering group functions to
12 prevent such problems.

13 Q. Does that conclude your testimony?

14 A. Yes.
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