

October 1, 1984

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2 MR. DYNNER: About 15 or 20 minutes, Judge
3 Brenner, at the most.

4 JUDGE BRENNER: All right. Why don't you
5 proceed?

6 RE-CROSS-EXAMINATION

7 BY MR. DYNNER:

8 Q Mr. Henriksen, do you still have the transcript
9 from Wednesday, September 26th handy?

10 A (Witness Henriksen) Yes.

11 Q Would you look at page 23,617?

12 MR. ELLIS: Have any more transcripts surfaced?
13 Does the Staff have one to give the witness so we can look
14 at one?

15 JUDGE BRENNER: Let him ask his question and then
16 see if you need it.

17 BY MR. DYNNER:

18 Q Now, you see Judge Brenner asked you a question
19 last Wednesday about the piston skirt that was in the
20 photograph shown in Suffolk County Diesel Exhibit 71, and
21 asked you what you would expect to occur with respect to the
22 tinplating on the Shoreham engines at that many hours at
23 full load or above, assuming LILCO did all the right things
24 with respect to lubrication.

25 And you answered:

"If properly applied, I would not expect

1 WRBeb

1 MR. ELLIS: I don't believe I mischaracterized
2 it.

3 JUDGE BRENNER: I didn't say mischaracterized. I
4 was being very careful. I said "did not characterize quite
5 accurately."

6 Somebody listening to your question as the
7 witness and I were could believe that the figure were in the
8 table, and I don't want to belabor that.

9 MR. ELLIS: No, I did not mean to suggest that,
10 and if I did, I certainly didn't intend it. It was
11 unintentional. But the information is certainly there.
12 I've been trying to expedite things.

13 JUDGE BRENNER: I know. I just wanted to show
14 you how what you think is unfair when you are objecting--
15 Forget it. I'm never going to make my point with you.

16 (Laughter.)

17 I won't belabor whether or not it is accurate to
18 upgrade the number of cylinders when upgrading the range of
19 horsepower either. Somebody else can worry about that.

20 I think we have completed all feasible questions
21 of these witnesses on the subject of pistons.

22 Gentlemen, I won't be naive and say I hope you
23 had a pleasant time. Let me put it the other way and say I
24 hope your time was not too unpleasant. And somebody with a
25 terrible sense of humor might say that they hope that the

1 WRBeb 1 respect to the existence of polishing between the R-5 skirt
2 boss areas and the Shoreham AE skirt boss areas?

3 A I saw no difference in regard to the polishing of
4 the highly stressed region in the stud boss.

5 Q Did you see any evidence to suggest that the
6 fatigue resistance of the R-5 AE skirt boss area is or would
7 be any different from the fatigue resistance of the Shoreham
8 AE skirt boss area?

9 A No, Mr. Ellis, I saw no differences in that
10 regard.

11 Q Did anybody from FaAA accompany you this weekend
12 to inspect the R-5 AE piston skirts?

13 A Yes, Don Johnson and Duane Johnson both
14 accompanied me on my visit to TDI.

15 Q Is that Dr. Duane Johnson who is on the piston
16 panel?

17 A Yes, that's correct.

18 Q And is the second Mr. Johnson the author of the
19 memorandum that appears at LILCO Exhibit P-29-1 -- I'm
20 sorry, P-29-12?

21 A P-29, page 12?

22 Q Yes.

23 JUDGE BRENNER: Why don't you give him the date
24 if you have it?

25 MR. ELLIS: February 3rd, 1984.

1 WRBwrb 1

BY MR. ELLIS:

2 Q Look at P-29-27, if you would, please, Dr. Harris,
3 four pages from the end.

4 JUDGE BRENNER: You had better tell me what's on
5 the page.

6 MR. ELLIS: Yes, sir; it's entitled "Comments," 1
7 through 4.

8 BY MR. ELLIS:

9 Q Do you see the comment there on No. 1 where the
10 machined areas were very smooth in the boss area?

11 A Yes, I do.

12 Q Is that consistent with your interpretation of his
13 use -- Mr. Johnson's use -- of the term "boss?"

14 A That's consistent with my understanding of
15 Mr. Johnson's terminology as he was using it at that time.

16 Q Thank you.

17 JUDGE BRENNER: Well, Dr. Harris, who wrote these
18 comments?

19 THE WITNESS: I believe Mr. Johnson, Mr. Don
20 Johnson, did.

21 JUDGE BRENNER: Do you know?

22 THE WITNESS: I don't know for sure.

23 JUDGE BRENNER: All right.

24 I think that has completed the questions of the
25 parties for this witness; is that correct?

3 AGBpp

1 JUDGE BRENNER: I'm sure that throughout the rest
2 of this proceeding LILCO's cross examination will not take
3 us long as one might infer it possibly could, just by
4 looking at the number of pages in the cross plan.

5 MR. STROUPE: Judge Brenner, there are obviously
6 some things that we will not be covering as a result of
7 things that we have learned and some things that we think
8 have become less important as a result of testimony.

9 JUDGE BRENNER: All right.

10 Off the record.

11 (Discussion off the record.)

12 JUDGE BRENNER: Back on the record.

13 Are you, in fact, going to start with
14 shot-peening?

15 MR. STROUPE: Yes, Judge Brenner, if the Board
16 has no objection, I would prefer to.

17 JUDGE BRENNER: We will leave it up to you.

18 CROSS EXAMINATION

19 BY MR. STROUPE:

20 Q Dr. Anderson, directing my question to you, you
21 have indicated, have you not, sir, in your curriculum vitae
22 that you have a PhD in metallurgy from Stanford University?

23 A (Witness Anderson) Yes, I have that doctorate
24 degree.

25 Q Isn't that a PhD in extractive metallurgy?

2 AGBpp

1 several times.

2 Q What sorts of components, Dr. Anderson, have you
3 observed shot-peening being performed upon?

4 A I don't recall in detail. My father owned — or
5 directed the welding and other metallurgical operations for
6 ARAMCO, and he had such an operation there that I observed.
7 I also have been to a company that was doing it. I believe it
8 was in East Bay.

9 Q You believe it was where, sir?

10 A East Bay.

11 Q Have you ever participated, yourself, in the
12 actual shot-peening of a component?

13 A No, I have never been motivated to.

14 Q Other than the one instance you referred to in
15 which you were involved in a litigation, and the
16 shot-peening involved in the issue in this contention, have
17 you had occasion to do any analyses on a component that
18 involved shot-peening?

19 A No, I don't recall, no.

20 Q Other than the literature that you have
21 previously referred to in answer to one of my questions,
22 have you had occasion to study or document the metallurgical
23 effects of shot-peening?

24 A Not beyond the extent that is generally necessary
25 to teach it in my classes, no.

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JUDGE BRENNER: One?

2

WITNESS ELEY: Yes.

3

JUDGE BRENNER: And that --

4

WITNESS ELEY: I have also done a repair of a crankshaft that was fractured in two halves whilst working for George Clark and North East Marine, an engine builder on a Doxford engine which failed in a similar area. We had to remove all of the engine, replace the crankshaft with a new crankshaft and put the engine back in there.

10

JUDGE BRENNER: So your basis, as one of the sponsors of that first sentence, is the experience you have had with two problems, failures if you will, of a crankshaft rather than any analysis leading to the belief -- leading to that conclusion in the sentence, is that right?

15

WITNESS ELEY: I have also read the FaAA descriptions of where they have found where the maximum stresses occur.

18

JUDGE BRENNER: All right.

19

Of course that is contained in the rest of the answer.

21

WITNESS ELEY: Yes.

22

JUDGE BRENNER: Anything else, in terms of your experience leading to the conclusion in that first sentence?

24

WITNESS ELEY: I think not, Judge Brenner.

25

JUDGE BRENNER: Thank you.