

COPY

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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In the matter of)
LONG ISLAND LIGHTING COMPANY)

(Shoreham Nuclear Power)
Station, Unit 1))

Docket No. 50-332-OL



DEPOSITION OF CLINTON S. MATHEWS

MAY 8, 1984

VOLUME II - Afternoon Session

Reported by:

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1 ~~load carrying threads lowered further down in the block and~~
2 ~~away from the top surface of the block.~~

3 Q When was the design for the replacement block developed
4 by Delaval?

5 A I don't know exactly. It stems out of development
6 work that we did on the 850 horsepower per cylinder R-5
7 engine development.

8 Q And can you state approximately when it was developed?

9 A The R-5 project started approximately 1973. And the
10 block cross-sections that we are talking about were part of
11 that product development effort that became incorporated
12 in the RV blocks first, probably three years ago, and in-
13 corporated in the in-line engine blocks more recently, within
14 the last year or two.

15 Q Is there any R-48 engine now operating in the
16 field which utilizes the new design of the replacement block?

17 A I don't know.

18 Q How was the new design replacement block tested by
19 Delaval, if at all?

20 A That portion of it was tested on the R-5.

21 Q By that portion, you are referring to what?

22 A The portion of it that was changed on the R-48, the
23 upper entablature section, the cross-section thicknesses, the
24 stud arrangement, the boss arrangement.

25 Q Was the entire newly designed engine block for the
26 DSR-48 engine ever tested in its entirety by Delaval?

27 A I can't answer that. It wasn't an entirely newly
28 designed block. It was design modification to the section at

1 the upper service of the block and the bosses.

2 Q Is the cylinder block that we are referring to
3 manufactured in pieces or as an entire casting, or some
4 other way?

5 A The cylinder block is manufactured as one casting.

6 MR. SMITH: Mr. Dynner, do you have any idea how
7 much longer you will be?

8 MR. DYNNER: Yes. I hope just about another ten
9 minutes, Mr. Smith.

10 Q Mr. Mathews, do you or does anyone at Delaval
11 know what caused the cracks in the cylinder block of the
12 Shoreham engine which is being replaced?

13 A I was told by LILCO personnel that the block being
14 replaced was exposed to some kind of accident where the
15 engine was operating at full power and some electrical upset
16 occurred overloading the engine, perhaps overheating the
17 engine, and the crack propagation was noticed prior to that,
18 immediately prior to that, I believe.

19 MR. SMITH: Prior to or after?

20 THE WITNESS: I mean subsequent to that. Thank you.

21 MR. DYNNER: Q Do you know when that occurred
22 approximately?

23 A Early to mid-April, approximately.

24 Q Did they tell you or do you otherwise know by how
25 much the engine was overloaded?

26 A No.

27 Q By reason of this accident? No?

28 A Enough, enough so the engine couldn't carry the load