

DOCKETED
USNRC

LILCO, June 3³, 1983-6 A11:46

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of)	
)	
LONG ISLAND LIGHTING COMPANY)	Docket No. 50-322 (OL)
)	
(Shoreham Nuclear Power Station,)	
Unit 1))	

AFFIDAVIT OF EDWARD J. YOUNGLING

Edward J. Youngling, being duly sworn, deposes and says as follows:

1. My name is Edward J. Youngling and I am employed by Long Island Lighting Company (LILCO) as Startup Manager for the Shoreham Nuclear Power Station. My professional qualifications have been previously submitted to the Board. As Startup Manager, I am responsible for all preoperational test activities. I also coordinate Checkout and Initial Operation (C&IO) testing and preoperational testing. In this role I have been directly involved in the testing of Shoreham's diesel generators and in resolving related issues that develop during testing. Specifically, I am familiar with the matter raised by the County in "Suffolk County Submission of Data Regarding Shoreham Diesel Generators," (May 26, 1983). That submission transmits to the Board allegations that Diesel Generator 103 has a "cracked engine block" in the area of the camshaft bearing support and that "the NRC is not aware of the crack." SC Submission at 2.

2. The purpose of this affidavit is to demonstrate that each of the allegations reported in the County's submittal is false. First, there are no cracks in the cylinder block castings which will propagate or otherwise adversely affect the life or operation of the engines. Secondly, although surface discontinuities exist in the engine blocks, they were promptly reported to the NRC and, as this Affidavit reflects, they were thoroughly investigated and found to be without effect on the strength of the cylinder blocks and without significance to the operation and life of the Shoreham diesel engines. This Affidavit will first address the lack of significance of these discontinuities that were found in the camshaft bearing supports of the cylinder blocks, and then address the false County allegation that the NRC has not been informed of the indications.

3. On March 26, 1983, LILCO discovered that the camshaft bearing supports of the three diesel generators had surface discontinuities. Promptly upon this discovery, a LILCO Deficiency Report was issued and Transamerica Delaval, the vendor, was contacted. In addition, as I will discuss below, the NRC Senior Resident Inspector, James C. Higgins, was also promptly notified.

4. Transamerica Delaval, upon notification, preliminarily concluded that the discontinuities were only normal "surface

imperfections" and advised Stone and Webster Engineering Corporation to "dimple" or grind the area of the discontinuities, which is a standard engineering procedure used to evaluate the cause, depth, and significance of discontinuities. This work was performed under the supervision of Transamerica Delaval's on-site field representatives. Transamerica Delaval's representatives from its home office in Oakland, California then inspected the Shoreham Diesel generator engines on March 31, 1983. These efforts and other tests confirmed Transamerica Delaval's preliminary view that the indications were the normal result of the manufacturing process and are inconsequential to the operation or life of the engines. Specifically, they are the result of the differential cooling of the large castings which causes shrinkage discontinuities. To further substantiate this conclusion, LILCO personnel traveled to Lincoln, Kansas to inspect an essentially identical Delaval diesel generator engine that had in excess of 50,000 operating hours. In addition, LILCO personnel and LILCO's independent consultant, C.R. Isleib, traveled to Oakland, California, to inspect five as-cast, new Delaval cylinder blocks and another cylinder block in an engine on the test stand. These inspections revealed discontinuities on the 50,000 hour cylinder block, on the five new cylinder blocks, and on the test stand engine block that were essentially identical to each other and to those observed in the Shoreham engine blocks. In total ten engine blocks were inspected,

including the three at Shoreham; all of the engine blocks inspected revealed similar discontinuities. These inspections confirmed the conclusion that the indications are the result of the normal manufacturing process and not the result of operation and, further, that they are neither susceptible to propagation nor significant to the operation of the diesels or the strength of the cylinder blocks. The lack of significance of the indications is also demonstrated by the fact that, as Transamerica Delaval advised LILCO, Delaval has never experienced a cylinder block failure in the areas where the discontinuities were observed.

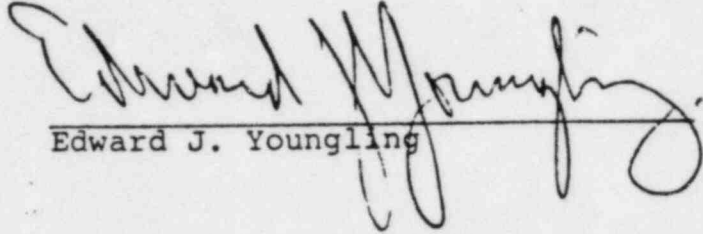
5. In addition to the efforts described above, LILCO contracted with C.R. Isleib and Associates for an independent evaluation of the indications. C.R. Isleib is a recognized authority in the field of metallurgy and has over 35 years of experience in the basic metals, iron, and steel industries. The conclusions of the Isleib analysis agreed with Transamerica Delaval conclusions, namely, (1) that the indications originated during the manufacture of the castings in the foundry and not as a result of operating conditions, and (2) that the indications will have no effect on the operating performance or life of the engine blocks.

6. In summary, the implication of the County's submission that LILCO decided that the discontinuities were normal merely

because they could not grind them away is erroneous. The conclusion that the discontinuities were normal and not significant was based upon a thorough and complete investigation by LILCO in which (1) the cylinder block from a substantially identical engine in service for over 50,000 hours was examined, (2) new as-cast Delaval cylinder blocks were examined, (3) a test engine block at the Delaval factory was examined, (4) the Shoreham cylinder blocks were inspected by the vendor, Transamerica Delaval, and (5) a highly qualified independent consultant examined the Shoreham diesel generator engines, new as-cast Delaval engine blocks, and the test stand engine block. The conclusions of all this investigation are that the discontinuities are the normal result of the manufacturing process, and that the discontinuities will not propagate or otherwise affect the life or service of the engines.

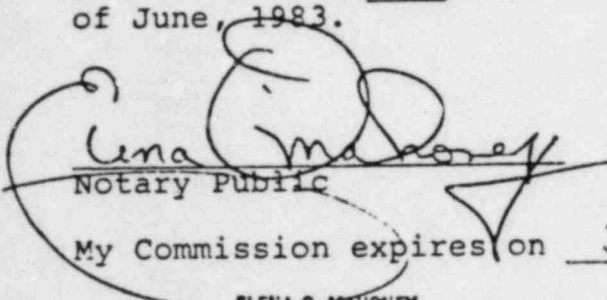
7. The second allegation reported in the County's submittal is that the NRC is not aware of the discontinuities. This allegation is totally false. I personally contacted NRC Senior Resident Inspector James Higgins on or about March 29, 1983 to inform him that an inspection had revealed surface discontinuities. We have kept him closely informed of our investigation and, in fact, he accompanied the lead diesel test engineer on an inspection of all three cylinder blocks on or about March 30, 1983. Contrary to the County's submittal, the

NRC Region I Staff was promptly informed and has closely monitored and reviewed the investigation of the surface discontinuities.


Edward J. Youngling

STATE OF NEW YORK)
COUNTY OF SUFFOLK)

Subscribed and sworn to
before me this 320 day
of June, 1983.


Notary Public

My Commission expires on 3/30/85.

ELENA O. MAHONEY
NOTARY PUBLIC, State of New York
No. 52-4508996
Qualified in Suffolk County
Commission Expires March 30, 1985

DOCKETED
LILCO, June 3, 1983

'83 JUN -6 A11:47

CERTIFICATE OF SERVICE

In the Matter of
LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1)
Docket No. 50-322 (OL)

OFFICE OF SECRETARY
OF ENERGY & SERVICE
BRANCH

I hereby certify that copies of LILCO'S Response to
Suffolk County's Submission of Data Regarding Shoreham Diesel
Generators were served this date upon the following by
first-class mail, postage prepaid, or by hand as indicated by
an asterisk:

Lawrence Brenner, Esq.*
Administrative Judge
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Dr. Peter A. Morris*
Administrative Judge
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Dr. James H. Carpenter*
Administrative Judge
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Secretary of the Commission
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Atomic Safety and Licensing
Appeal Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Daniel F. Brown, Esq.*
Attorney
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Bernard M. Bordenick, Esq.*
David A. Repka, Esq.
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Herbert H. Brown, Esq.*
Lawrence Coe Lanpher, Esq.
Karla J. Letsche, Esq.
Kirkpatrick, Lockhart, Hill,
Christopher & Phillips
8th Floor
1900 M Street, N.W.
Washington, D.C. 20036

Mr. Marc W. Goldsmith
Energy Research Group
4001 Totten Pond Road
Waltham, Massachusetts 02154

MHB Technical Associates
1723 Hamilton Avenue
Suite K
San Jose, California 95125

Mr. Jay Dunkleberger
New York State Energy Office
Agency Building 2
Empire State Plaza
Albany, New York 12223

David J. Gilmartin, Esq.
Attn: Patricia A. Dempsey, Esq.
County Attorney
Suffolk County Department of Law
Veterans Memorial Highway
Hauppauge, New York 11787

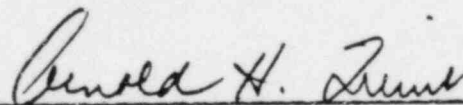
Stephen B. Latham, Esq.
Twomey, Latham & Shea
33 West Second Street
P. O. Box 398
Riverhead, New York 11901

Ralph Shapiro, Esq.
Cammer and Shapiro, P.C.
9 East 40th Street
New York, New York 10016

James Dougherty, Esq.
3045 Porter Street
Washington, D.C. 20008

Howard L. Blau
217 Newbridge Road
Hicksville, New York 11801

Matthew J. Kelly, Esq.
State of New York
Department of Public Service
Three Empire State Plaza
Albany, New York 12223



Arnold H. Quint

Hunton & Williams
707 East Main Street
P.O. Box 1535
Richmond, Virginia 23212

DATED: June 3, 1983