



LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

P.O. BOX 618, NORTH COUNTRY ROAD • WADING RIVER, N.Y. 11792

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Direct Dial Number

March 9, 1984

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH SNRC-1018

Dr. Thomas E. Murley
Regional Administrator
Office of Inspection & Enforcement - Region 1
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Long Island Lighting Company
Shoreham Nuclear Power Station - Unit 1
Docket No. 50-322

Dear Dr. Murley:

On February 4, in accordance with 10CFR50.55(e), we reported verbally to Region 1 a potential deficiency concerning the failure of the turbocharger on one of Shoreham's Emergency Standby Diesel Generators. This letter serves as our 30-day follow-up written report regarding that potential deficiency.

Description of the Deficiency

On February 1, the turbocharger on Diesel Generator 101 (1R43*ENG101) failed in service causing a premature shutdown of Diesel Generator 101. On February 4, the turbocharger was disassembled for purposes of conducting a preliminary failure investigation. Based upon the results of that inspection, it appeared that the turbocharger failure resulted from inadequate lubrication of the turbine end thrust bearing.

Inadequate turbocharger thrust bearing lubrication was the subject of a previous reportable condition under 10CFR21 (ref: TDI memo Mathews to NRC 12/16/80), which was corrected on applicable nuclear engines, including Shoreham. As the Diesel Generator 101 turbocharger inspection results indicated, the design modification provided by Transamerica Delaval, Inc. (TDI), to correct this problem may not have been completely effective.

On February 5, the turbocharger on Diesel Generator 103 (1R43*ENG103) also exhibited indications of incipient failure which resulted in termination of the Diesel Generator 103 test run. Subsequent inspection of the turbocharger evidenced a failure mechanism similar to that of the Diesel Generator 101 turbocharger.

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Design Review/Quality Revalidation inspections conducted on the Diesel Generator 102 (1R43*ENG 102) turbocharger have shown excessive thrust bearing wear, which appears consistent with the Diesel Generator 101 and 103 turbocharger failures.

As this evidence strongly suggests the existence of a generic deficiency, we requested TDI to address reportability under 10CFR21. TDI has concluded that a reportable deficiency under 10CFR21 exists and has notified the NRC and all potentially affected owners (ref. memo Mathews to NRC, 2/15/84).

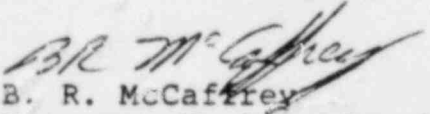
Corrective Action and Action to Prevent Recurrence

In order to confirm the findings of the preliminary failure investigation, the turbine end thrust bearings from Diesel Generators 101, 102 and 103 were sent to Failure Analysis Associates (FaAA) for inspection. A failure analysis by FaAA has determined that the damage to the bearings can be attributed to high wear while starting, when the turbocharger is accelerated with limited lubricant present.

Based upon recommendations made by TDI and Elliott (the turbocharger manufacturer), LILCO has installed a temporary by-pass valve around the turbocharger prelube drip line orifice. By opening the by-pass valve prior to engine start and allowing it to remain open until the engine is running and normal oil pressure is achieved, the turbocharger will receive adequate lubrication such that failures of the type experienced will be precluded. TDI has indicated that their recommended permanent corrective action will be provided to all affected owners by March 30, 1984. Upon receipt of this information, we will initiate the appropriate permanent modifications on all engines. The interim steps outlined above, however, will ensure that the diesel generators are available to perform their safety function until the permanent modifications are made. The schedule for completion of all corrective actions will be developed consistent with material delivery commitments and engine testing schedule requirements.

If you have any questions relative to this matter, please do not hesitate to contact this office.

Very truly yours,


B. R. McCaffrey
Manager, Nuclear Compliance & Safety
Shoreham Nuclear Power Station

WMJ/cf S4

cc: Mr. Richard DeYoung, Director
NRC Office of Inspection & Enforcement
Division of Reactor Operating Inspection
Washington, DC 20555
Mr. R. Caruso, NRC NRR
Mr. C. Petrone, Site NRC
All Parties Listed in Attachment 1

ATTACHMENT I
Diesel Generators

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USNRC

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OFFICE OF SECRETARY
DOCKETING & RECORDS
BRANCH

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

Dr. George A. Ferguson *
Administrative Judge
Atomic Safety and Licensing Board
School of Engineering
Howard University
2300 6th Street, N.W.
Washington, D.C. 20059

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

Edward M. Barrett, Esq.
General Counsel
Long Island Lighting Company
250 Old Country Road
Mineola, NY 11501

Mr. Brian McCaffrey
Long Island Lighting Company
P. O. Box 618
North Country Road
Wading River, NY 11792

Jeff Smith
Shoreham Nuclear Power Station
P.O. Box 618
North Country Road
Wading River, NY 11792

Joel Blau, Esq.
New York Public Service Commission
The Governor Nelson A. Rockefeller Building
Empire State Plaza
Albany, NY 12223

Martin Bradley Ashare, Esq.
Suffolk County Attorney
H. Lee Dennison Building
Veterans Memorial Highway
Hauppauge, New York 11788

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

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

Howard L. Blau, Esq.
217 Newbridge Road
Hicksville, NY 11801

W. Taylor Reveley, III, Esq. **
Hunton & Williams
P. O. Box 1535
707 East Main Street
Richmond, VA 23212

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

James B. Dougherty
3045 Porter Street, N.W.
Washington, D.C. 20008

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

Marc W. Goldsmith
Energy Research Group, Inc.
400-1 Totten Pond Road
Waltham, Massachusetts 02154

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

Hon. Peter F. Cohalan
Suffolk County Executive
H. Lee Dennison Building
Veterans Memorial Highway
Hauppauge, New York 11788

Ezra I. Bialik, Esq.
Assistant Attorney General
Environmental Protection Bureau
New York State Department of Law
2 World Trade Center
New York, NY 10047

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
1717 H Street, N.W.
Washington, D.C. 20555

Richard J. Goddard, Esq. *
Ralph Caruso
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Stuart Diamond
Environment/Energy Writer
NEWSDAY
Long Island, NY 11747

Gerald C. Crotty, Esq.
Counsel to the Governor
Executive Chamber
State Capitol
Albany, NY 12224

Fabian Palomino, Esq. #
Special Counsel to the Governor
Executive Chamber
Room 229
State Capitol
Albany, NY 12224

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

Jonathan D. Feinberg, Esq. #
Staff Counsel
New York State Public Service
Commission
3 Rockefeller Plaza
Albany, NY 12223

Stewart M. Glass, Esq.
Regional Counsel
Federal Emergency Management Agency
26 Federal Plaza
New York, NY 10278

Robert E. Smith, Esq.
Guggenheimer & Untermyer
80 Pine Street
New York, NY 10005

By Federal Express
* By Hand Delivery
** By Telecopier