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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF SECRETARY
DOCKETING & SERVICE
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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))	

STATUS REPORT ON DIESEL
GENERATOR CRANKSHAFT MATTERS

LILCO submits this Status Report on Diesel Generator Crankshaft Matters pursuant to the Board's Memorandum and Order Deferring Filing of Testimony and Commencement of Hearings on Diesel Generators dated August 16, 1983.

As LILCO previously reported to the Board promptly on Saturday, August 13, 1983, a failure occurred in the crankshaft of emergency diesel generator 102 in the vicinity of the no. 7 cylinder. Further investigation of the failure indicated that the crankshaft had experienced a crack that severed the shaft. As reported in LILCO's letter to the Board dated August 22, 1983, indications were found on the crankshaft of emergency diesel generator 103. Subsequent investigation confirmed that this crankshaft contained a crack approximately 2" long and

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1/2" deep. Examination of the crankshaft of emergency diesel generator 101 has revealed an indication similar to the indication found on the crankshaft of emergency diesel generator 103. The Staff and County were advised of these facts. The indication on the crankshaft of diesel generator 101 has since been determined to be a crack 1 1/2" - 2" long and approximately 360 mils deep. Additional examination of the crankshaft of emergency diesel generator 101 has also revealed indications in the vicinity of the no. 3 and no. 5 cylinder journals. Examination of the crankshafts on diesel generators 101 and 103 is still in progress.

Investigation of the cause or causes of the failure of the crankshaft of emergency diesel generator 102 is underway and will be conducted in accordance with a master plan which generally describes steps to be taken during the investigation and remedy of the crankshaft failure. The master plan also describes organizational responsibilities for this effort. A copy of the master plan, which was approved yesterday, has been made available to the Staff and the County and for the Board's information is attached to this Report. The plan was prepared prior to confirming the existence of cracks on the crankshafts of diesel generators 101 and 103 and therefore does not reflect that information. This Status Report will supplement the

information provided in the master plan with respect to emergency diesel generators 101 and 103.

As the plan indicates, LILCO will use the resources of appropriate LILCO organizations, Stone & Webster Engineering Corp., Transamerica Delaval and appropriate contractors to carry out the steps outlined in the diesel generator master plan. In addition, as the plan also reflects, Failure Analysis Associates (FAA), a highly qualified and experienced organization in the field of failure analyses, will conduct the investigation to determine the cause or causes of the crankshaft failure on diesel generator 102 and the cracks in the crankshafts of diesel generators 101 and 103. FAA, engineering and metallurgical consultants, have substantial experience investigating mechanical, structural and materials failures both in nuclear and non-nuclear applications.

The master plan calls for moving emergency diesel generator 102 from the diesel room to the turbine building where a clean area with controlled access will be established. Transamerica Delaval personnel will then disassemble the engine to permit removal of the failed crankshaft. At present, disconnection of diesel generator 102 from its auxiliary equipment has been completed and preparations for removing the engine from the diesel generator room are underway. Once the engine

has been placed in the turbine building and disassembled, the crankshaft will be sent to an appropriate facility off site for completion of failure analyses by or under the supervision of FAA. A similar process will be used to investigate the cracks on the crankshafts of diesel generators 101 and 103.

LILCO currently intends to replace the existing 13" X 11" crankshafts with 13" X 12" crankshafts on all three engines. Arrangements are now being made for shipment of the crankshafts to the site. The investigation being conducted will also determine whether the installation of these new crankshafts will remedy the problems experienced in the old crankshafts or whether other remedies will be required. LILCO is not certain at this time whether the replacement of the three crankshafts will resolve the problems encountered with the diesel generators or whether some other remedial measures may be required.

Crankshaft replacement is currently planned to take place in the turbine building where the engines will be reassembled. Once reassembly is complete, the engines will be returned to the diesel room where they will be installed and reconnected to auxiliary equipment. As described in the master plan, appropriate testing of the diesels will then be conducted.

As noted, the investigation into the cause or causes of the crankshaft failure in diesel generator 102 and the cracks found in the crankshafts of diesel generators 101 and 103 has commenced and is underway. The cause or causes of these cracks and failures have not been identified. LILCO expects that the crankshaft for emergency diesel generator 102 will be removed from the engine in approximately two weeks and that preliminary information concerning the failure analysis may be available two weeks thereafter. Thus, FAA estimates that a final report on the failure analysis will be completed 4-6 weeks from the date of this Status Report. A copy of this FAA report will be made available to the Board and parties. This estimate of 4-6 weeks will be revised if necessary.

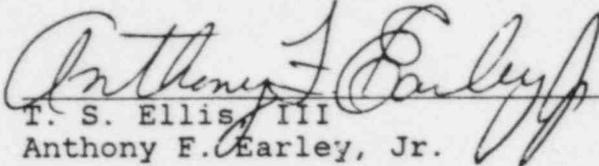
At the present time, as a result of the crankshaft failures and indications, it is LILCO's current judgment that under the most favorable known circumstances, Shoreham will not be ready to load fuel until sometime late in the first quarter of 1984 or early in the second quarter of 1984. More precise estimates of the time it will take to complete the investigation and to repair and test all three diesel generators must necessarily await receipt of further information from the failure analysis. Needless to say, LILCO will continue to take whatever steps are appropriate that would permit an earlier fuel load.

Given this situation, LILCO does not believe it would be productive to conduct any litigation on diesel generator issues until issuance of FAA's failure analysis report. Litigation of diesel generator issues prior to completion of that report would interfere with LILCO's efforts to investigate and remedy the crankshaft matters because key personnel at LILCO, Stone & Webster and Transamerica Delaval would be involved in discovery and testimony at the same time they would be involved in the crankshaft efforts. Accordingly, LILCO respectfully requests that litigation of diesel generator contentions be held in abeyance pending issuance of the FAA final report which is expected in approximately 4-6 weeks. LILCO respectfully suggests that the Board and parties review and consider the matter of scheduling litigation of the diesel generator contentions after the issuance of the FAA final report.

LILCO understands that the Staff supports deferral of any consideration of diesel generator issues. The substance of this status report was provided to the County late Tuesday and we understand that the County also supports deferral.

Respectfully submitted,

LONG ISLAND LIGHTING COMPANY


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DATED: August 25, 1983

CERTIFICATE OF SERVICE

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

I hereby certify that copies of LILCO's Status Report on Diesel Generator Crankshaft Matters were served this date upon the following by first-class mail, postage prepaid, or by hand as indicated by an asterisk:

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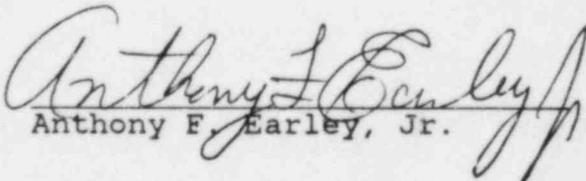
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