UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

APR 22 1985

MEMORANDUM FOR: Thomas M. Novak, Assistant Director
for Licensing
Division of Licensing

FROM: Robert J. Bosnak, Acting Assistant Director
Components & Structures Engineering
Division of Engineering

SUBJECT: UNISOLATED LOCA OUTSIDE DRYWELL IN SHOREHAM

The staff is currently performing a scoping study on unisolated LOCA's outside of the drywell in the Shoreham reactor building to identify high-energy line breaks (HELB) that are important with respect to isolation requirements. The study identifies isolation valves in the HPCI, RCIC, RWCU, and MSL lines (see enclosure 1).

The preliminary results of the analysis indicate that the estimate of core damage frequency for an unisolated LOCA outside the drywell, assuming the isolation valves failed to close upon demand, is about 2×10^{-5}/reactor-year. If the isolation valves were assumed to close the estimate would be about 4×10^{-7}/reactor-year. Therefore, the analysis indicates that a problem may exist should the valves fail to close.

To date no test results or analysis have been provided to show that the isolation valves will close under blowdown conditions. For the staff to complete its review of this issue it will be necessary to obtain additional information from the licensee to support the operability of the valves listed in enclosure 1. The licensee should provide documentation to demonstrate that these valves, which perform a safety function, will operate over the entire range of service conditions. For a pipe break downstream of the valve, it must be demonstrated that the capability exists to isolate the break. The information should be provided within 60 days of receipt of the request.

Robert J. Bosnak, Acting Assistant
Director
Components & Structures Engineering
Division of Engineering

cc: A. Schwencer
[redacted]
G. Bagchi
E. Chow
T. Speis
J. P. Knight
S. Israel

Contact: J. Lombardo
Ext. 28194

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299

Enclosure 1

SHOREHAM ISOLATION VALVES FOR HELB

(A)	HPCI line	(i) IE41*MOV-041 (ii) IE41*MOV-042
(B)	RCIC line	(i) IE51-MOV-041 (ii) IE51-MOV-042
(C)	RWCU line	(i) MOV-033 (F001) (ii) MOV-034 (F004) (iii) MOV-F100 (iv) MOV-F106 (V) MOV-F102
(D)	MSL drain line	(i) IB21-MOV-031 (ii) IB21-MOV-032

Ralph C.

MAY 6 1985

Docket No. 50-322

Mr. John D. Leonard, Jr.
Vice President - Nuclear Operations
Long Island Lighting Company
Shoreham Nuclear Power Station
P.O. Box 618, North Country Road
Wading River, New York 11792

Dear Mr. Leonard:

SUBJECT: UNISOLATED LOCA OUTSIDE DRYWELL - SHOREHAM NUCLEAR POWER STATION

The NRC staff is currently performing a scoping study of unisolated LOCAs outside of the drywell for the Shoreham reactor building to identify high-energy line breaks (HELB) that are important with respect to isolation requirements. The study has identified several isolation valves in the HPCI, RCIC, RWCU, and MS lines of concern (see Enclosure 1).

The preliminary results of the analysis indicate that the estimate of core damage frequency for an unisolated LOCA outside the drywell, assuming the isolation valves failed to close upon demand, is about 2×10^{-5}/reactor-year. If the isolation valves were assumed to close the estimate would be about 4×10^{-7}/reactor-year. Therefore, the analysis indicates that a problem may exist should the valves fail to close.

To date we know of no test results or analysis that have been provided by you to show that the isolation valves will close under blowdown conditions. For the staff to complete its review of this issue it will be necessary to obtain this information. We therefore request that you provide documentation to demonstrate that the valves listed in Enclosure 1, which perform a safety function, will operate over the entire range of service conditions. For a pipe break downstream of the valve, it must be demonstrated that the capability exists to isolate the break. We request that you provide this information within 60 days of your receipt of the letter.

Sincerely,

Original signed by:
A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing

Enclosure: As stated

cc: See next page

8505160400 1p.

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Sincerely,

A. Schwencer, Chief
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Division of Licensing

Enclosure: As stated

cc: See next page

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4pp.

SHOREHAM (5)

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Enclosure 1

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(D)	MSL drain line	(i) IB21-MOV-031 (ii) IB21-MOV-032