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Docket No.: 50-322

Mr. M. S. Pollock
Vice President - Nuclear
Long Island Lighting Company
175 East Old Country Road
Hicksville, New York 11801

Dear Mr. Pollock:

Subject: Shoreham Nuclear Power Station - Multiple Control System Failure Concern (SER Issue No. 47)

In a letter dated August 27, 1982, (SNRC-761; J. L. Smith to Harold R. Denton) you submitted information to address a control system issue identified in Section 7.7 of the Shoreham Safety Evaluation Report. The staff has conducted a preliminary review of the information submitted and it has been determined that, while your response appears to satisfactorily address the effects of power supply failures, it does not address control system failures caused by common sensors, hydraulic headers, and impulse lines. While the control system issue identified in Section 7.7 does not specifically detail the review of failures caused by hydraulic headers or impulse lines to two or more control systems, informal NRC staff contact with your staff, and the precedent established in the closure of this item on other dockets, has identified these areas of concern. The common sensors concern was identified in Section 7.7. The specific request for information is included in Enclosure 1.

Please inform us, within seven (7) days of receipt of this letter, of your schedule of submittal of the requested information. If you have any questions on this matter, please contact NRC Project Manager, Edward Weinkam at (301) 492-8430.

Sincerely,

A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing

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Enclosure:
As stated

cc: See next page

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DATE	11/23/82	11/24/82					

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CONCERN THAT COMMON ELECTRICAL POWER SOURCES OR SENSOR MALFUNCTIONS MAY CAUSE MULTIPLE CONTROL SYSTEM FAILURES

A number of concerns have been expressed regarding the adequacy of safety systems in mitigation of the kinds of control system failures that could actually occur at nuclear plants, as opposed to those analyzed in FSAR Chapter 15 safety analyses. Although the Chapter 15 analyses are based on conservative assumptions regarding failures of single control systems, systematic reviews have not been reported to demonstrate that multiple control system failures beyond the Chapter 15 analyses could not occur because of single events. Among the types of events that could initiate such multiple failures, the most significant are in our judgement those resulting from failure or malfunction of power supplies or sensors common to two or more control systems.

To provide assurance that the design basis event analyses adequately bound multiple control system failures you are requested to provide the following information:

1) Identify those control systems whose failure or malfunction could seriously impact plant safety.

2) Indicate which, if any, of the control systems identified in (1) receive power from common power sources. The power sources considered should include all power sources whose failure or malfunction could lead to failure or malfunction of more than one control system and should extend to the effects of cascading power losses due to the failure of higher level distribution panels and load centers.

3) Indicate which, if any, of the control systems identified in (1) receive input signals from common sensors, common hydraulic headers, or common impulse lines.

The response should provide justification that simultaneous malfunctions of control systems which could result from failure of a power source, sensor, hydraulic header or sensor impulse line supplying power or signals to more than one control system are bounded by the analysis of anticipated operational ocurrences in Chapter 15 of the Final Safety Analysis Report.