



LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

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Direct Dial Number

April 7, 1983

SNRC-869

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Electrical Separation in NSSS Panels
Shoreham Nuclear Power Station - Unit 1
Docket No. 50-322

Reference: Letter SNRC-823 dated 1/21/83

Dear Mr. Denton:

In the reference letter, LILCO advised that they were utilizing three options to resolve the issue of separation of class 1E and non-class 1E circuits within the NSSS Panels.

The purpose of this letter is to further address and resolve NRC verbal questions regarding those circuits for which LILCO has chosen to utilize option number 2 as detailed in the reference letter. This option involves the installation of redundant circuit protection for non-1E circuits which are in close proximity to Class 1E (essential) circuits in the NSSS panels. The following criteria will be applied:

In those circuits where redundant protective devices are utilized, they will be appropriately sized and located so that the worst fault condition postulated would not prevent the proper functioning of Class 1E (essential) circuits. The worst case condition postulated encompasses the following:

- 1) Open Circuit
- 2) Short Circuit
- 3) Transients and Electromagnetic Interference (EMI)

The analyses assume the application of the maximum credible fault, voltage line-to-line, and line-to-ground. Short circuits will be cleared by either the primary or the redundant backup

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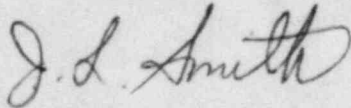
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protective device. In theory, fault currents generated prior to clearing by fuse or circuit breaker could induce EMI in adjacent Class 1E circuits. An evaluation of the worst case circuit assuming perfect coupling between a parallel pair of conductors (faulted non-Class 1E to Class 1E wiring) reveals a negligible induced voltage on the Class 1E circuit.

The information furnished herein should be sufficient to alleviate any remaining staff concerns on this issue. Should you have any questions please contact this office.

Very truly yours,



J. L. Smith
Manager, Special Projects
Shoreham Nuclear Power Station

RWG:bc

cc: J. Higgins
All Parties Listed in Attachment 1

ATTACHMENT 1

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