LONG ISLAND LIGHTING COMPANY
SHOREHAM NUCLEAR POWER STATION
P.O. BOX 618, NORTH COUNTRY ROAD • WADING RIVER, N.Y. 11792

September 28, 1982

SNRC-773

Mr. Boyce H. Grier, Director
Office of Inspection and
Enforcement, Region I
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 Mr. Grier:

On August 27, 1982, in accordance with 10CFR50.55(e), we reported verbally to Region I a potentially reportable deficiency involving analogue controllers supplied by Bailey Controls Company. Our review has ascertained that a reportable deficiency applies in this case. Therefore, this letter will serve as our 30-day written report pertaining to this deficiency.

Description of Deficiency

We have determined that a significant deficiency exists in applicational usage of thirty (30) Bailey 720063AAANI Manual/Automatic Stations at Shoreham. Specifically, following a loss of power to the Bailey controllers used in safety-related systems, it was observed during startup testing that upon return of power the Bailey controllers re-energized in the manual control mode, rather than in the normal automatic control mode. Additionally, it has been determined that the controllers would transmit a 0%(4mA) signal when re-energized in the manual control mode. Thus, the loss and subsequent return of power, e.g., LOCA with loss of offsite power followed by the initiation of the diesel generators would result in a constant manual mode 0% (4mA) signal being applied to the associated valve or damper actuators. If this situation remained uncorrected, the following events would occur:

IE27

1. All M50 System chilled water supply valves would be maintained in a closed position and, therefore, no cooling would exist.

2. RBSVS (Reactor Building Stand-by Ventilation System) exhaust dampers would be maintained in a closed position.

Both events would contribute to a Reactor Building pressure increase above atmospheric in the short term. First, since chilled water would be unavailable to the unit coolers heat could not be dissipated and, thus, pressure in the Reactor Building would increase. Second, with RBSVS dampers closed, filtered ventilation would no longer be available and pressure in the Reactor Building could not be vented via RBSVS. Therefore, shortly after an event such as a LOCA, Reactor Building pressure could be above atmospheric pressure which could cause an unfiltered effluent leakage from the Reactor Building in the short term.

It should also be noted that chilled water supply valves servicing the unit coolers (UC) and air conditioning units (ACU) for motor control centers (MCC), motor generators (MG), emergency switchgear, Relay and Control Rooms would also fail closed and, thus, cooling water would not be available to these areas. Loss of cooling water to UCs and ACUs could result in temperature increases in the short term. Other controllers reinitiate in an acceptable manner following a restoration of power and are, therefore, not a significant concern. However, all of the controllers involved are listed below with a brief statement regarding systematic functioning.

Equipment Mark No.	Comment
IE41*PIC142 IE51*PIC142	Re-energizing these units results in chilled water supply valves remaining open and supplying more cooling water than necessary to the HPCI and RCIC lube oil coolers.
IT46*TIC022A,B IT46*TIC023A,B IT46*TIC024A,B IT46*TIC025A,B	On RBSVS initiation, these units are no longer controlling. Control is switched automatically to IT46*PDIC043A,B.
IM50*PDIC019A,B IP41*TIC055A,B IP41*TIC060A,B IT46*PDIC043A,B	De-energizing these units results in a Reactor Building pressure increase due to the loss of cooling water as previously discussed.

IT46*TIC028A,B IT46*TIC059A,B IT46*TIC060A,B IX41*TIC021A,B IX61*TIC021A,B	Re-energizing these units results in loss of cooling water to UCs and ACUs serving MCC, MG, Emergency Switchgear, Relay and Control Rooms as previously discussed.
IT46*FIC004A,B	Re-energizing these units results in RBSVS filter train dampers closing and contributing to a Reactor Building pressure increase as previously discussed.

Corrective Action

Corrective action in our case involves circuit modifications and the addition of a relay network whereby upon restoration of power (startup and loading of diesel generators) all controllers listed above will return in the automatic mode. These modifications are currently being implemented by E&DCR F-42213 (already issued) and CCF M50/06. These modifications will be completed prior to fuel load. General Electric has been asked by Stone & Webster to confirm Stone & Webster's finding that no other Bailey controllers of this type have been utilized in safety-related applications by General Electric. Upon receipt of this confirmation and completion of work as outlined in E&DCR F-42213, no further action in this regard will be required.

Very truly yours,

M. H. Milligan
Project Engineer
Shoreham Nuclear Power Station

BWC/law

cc: Mr. Victor Stello, Director
NRC Office of Inspector and Enforcement
Div. of Reactor Operations Inspection
Washington, D.C. 20555

Mr. J. C. Higgins
USNRC Resident Inspector
NRC Site Trailer

All Parties