

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 50-322/84-32

Docket No. 50-322

License No. CPPR-95

Licensee: Long Island Lighting Company  
P. O. Box 618  
Shoreham Nuclear Power Station  
Wading River, New York 11792

Inspection At: Shoreham, New York

Inspection Conducted: August 20 - September 30, 1984

Inspectors: C. Petrone 10/3/84  
C. Petrone, Resident Inspector date signed

P. W. Eselgroth 10/3/84  
P. W. Eselgroth, Senior Resident Inspector date signed

Approved By: J. Strosnider 10/10/84  
J. Strosnider, Reactor Projects Sect. 1C date signed

Summary: The inspectors reviewed and closed one previous inspection finding. Three new unresolved items were identified. Plant modification administrative controls, equipment history trend analysis, Colt Diesel Building construction were reviewed and supplemental diesel line-up training was witnessed. No violations were identified.

## DETAILS

### 1.0 Persons Contacted

H. Carter, Operating Engineer (L)  
C. Cole, Colt Diesel Building Construction Manager (L)  
R. Gutmann, Maintenance Engineer (L)  
J. Kelly, Field QA Manager (L)  
A. Muller, OQA Engineer (L)  
J. Notaro, Modification/Outage Division Manager (L)  
J. Leonard, Vice President - Nuclear (L)  
R. Purcell, Startup Manager (L)  
K. Rottkamp, Training Supervisor (L)  
J. Scalice, Operations Division Manager (L)  
J. Smith, Manager Nuclear Operations Support Division (L)  
W. Steiger, Plant Manager (L)  
D. Terry, Maintenance Division Manager (L)  
J. Wynne, Lead Compliance Engineer (L)

L - Long Island Lighting Company

The inspectors also held discussions with other licensee and contractor personnel during the course of the inspection.

### 2.0 Previous Inspection Item Update

(Closed) Violation 82-04-13, "Monitor Performance of New Housekeeping Program". This violation documented the failure to control fire hazards due to fuel oil leaks and inadequate housekeeping in other areas of the plants. Since that inspection the licensee has made significant improvement in these areas. This improvement resulted from increased attention by the licensee as well as the completion of construction activities. During this inspection period the inspector observed no housekeeping problems or fire hazards during any of these routine plant inspection tours. The housekeeping problems noted during inspection 83-23 in the Radwaste Building Elevation 15' and the Reactor Building Elevation 8' have been satisfactorily corrected. This violation is closed.

### 3.0 High Pressure Coolant Injection System Isolation

During the performance of an Integrated Electrical Test (IET) (Loss of Offsite Power Test) on August 16, 1984 a spurious HPCI steam supply isolation signal was generated. By August 22, 1984 the licensee had determined that the spurious signal had been generated by the Steam Leak Detection System, which monitors the ambient temperature near the HPCI and RCIC turbines (as well as other systems) and generates isolation signals when high temperature steam leaks are detected. When power is restored by the emergency diesel generators, following a loss of offsite power, the B-21 temperature sensors momentarily senses a high temperature before stabilizing at the actual temperature. This momentary high temperature signal may generate a HPCI isolation signal. This occurred one time during the six IET runs performed from August 14 - August 18, 1984. Similar problems may exist at other BWR's, and a generic letter is being prepared for distribution. Susquehanna reportedly experienced similar problems, but corrected them by installing an Agastat time delay relay which interrupts any isolation signal from the temperature sensors for one second following the repowering of the circuit. The licensee is evaluating this as a possible corrective action at Shoreham.

This modification, or other acceptable corrective action, must be completed prior to exceeding 5% power. This is unresolved item 84-32-01.

#### 4.0 Plant Modification Administrative Control

During this inspection period the administrative controls implemented by the licensee for plant modifications were reviewed. The purpose of this inspection was to determine whether the plant modification administrative controls contained in the station operating manual provide clear definition of the administrative steps necessary for plant modifications including all required approvals. Also, this inspection encompassed interviews with plant management and shift personnel to determine if these individuals were knowledgeable of the essential aspects of the administrative controls.

For this inspection, the following Station Procedures were reviewed:

- SP12.010.01 - Interim Station Modification Program
- SP12.010.02 - Station Modification Activities
- SP12.013.01 - Maintenance Work Requests

This review focused, in particular, on those steps required for returning a modified system to service. The inspector found that the above procedures do not clearly define what approval signatures the watch engineer should check for prior to returning a modified system to service. For example, modification procedures SP12.010.01 and 12.010.02 contain various return to service related signature requirements (e.g. page 50 of SP12.010.01 and page 26 of SP12.010.02); however, the watch engineer "Equipment returned to service" signature step 60 of SP12.013.01 does not define what approval signatures must be verified - or how to determine what approvals are required for differing cases - prior to returning equipment to service.

The inspector also reviewed this subject with several members of plant management. In these discussions an example of an assumed system piping modification followed by hydrostatic testing was utilized to provide a specific instance or point of reference for addressing the question of "What approval signatures/actions does the watch engineer need to verify prior to returning the modified system to service?". One individual said that the Operating Engineer's approval is required prior to returning the system to service and another individual said that the Operating Engineer did only a final modification package sign-off some time subsequent to the return of the system to service. A third individual felt that the Review-of-Operations (ROC) Committee approval would be required subsequent to acceptance testing and prior to returning the system to service while one of the other individuals thought that this was not necessary.

From this review, it became apparent to the inspector that a clarification of the station procedures for handling system modification is needed in order to ensure that the operational administrative controls are clearly stated and understood by those responsible for overseeing their implementation. Subsequent to this inspection effort, the Operations Division Manager informed the Inspector that corrective action for this problem is now in progress. This is unresolved item 84-32-02.

## 5.0 Equipment Failure History Analysis

A review was conducted of the equipment history area to ascertain how the licensee tracks equipment failures. The purpose of this inspection was to determine to what extent the licensee maintains an equipment failure trend analysis program for assessing and highlighting significant failure rate trends related to such causes as poor design and/or materials or poor maintenance practices.

The inspector found that no system or method, manual or computerized, is in use at the present time for performing equipment failure rate trend analysis for Shoreham plant equipment. Several large file cabinets of Maintenance Work Requests (MWR) are on file by component number; however, this information is not currently being analysed for significant failure rate trends. During discussions with the Maintenance Division Manager and the Maintenance Engineer the inspector was informed that the Director, Quality Assurance, Safety and Compliance is in the process of drafting a Reliability Group charter document which encompasses the evaluation of plant equipment failure rates for significant trends. The QA Director informed the inspector that this computerized system for trend analysis would not be fully operational until sometime in 1985. While discussing equipment trend analysis further with the Maintenance Division Manager and Maintenance Engineer, the inspector was informed that as part of an imminent organization change within the Maintenance Division, there will be an individual assigned to developing equipment failure trend information that will allow management to make assessments of significant failure trends. However, at the present time there is no means for management to obtain an overview of equipment history trends short of personal recollections of individual problem areas. This is unresolved item 84-32-03.

## 6.0 Supplemental Diesel Lineup Training

On September 6, 1984 the resident inspectors observed the running of "Supplemental Diesel Generators - EMD - (GM) - Electrical Functional Test Procedure" (TP #85.84042.3). The test performance was observed both in the Control Room in the plant. The purpose of this test is to demonstrate the ability of the supplemental diesels to automatically start upon a loss of voltage signal and to synchronize themselves on a dead bus. The test is also utilized for operator training.

In this particular instance, the TP was run for training purposes. Specifically, this TP demonstrates the ability of operators to manually isolate all non-required loads from 1R22-SWG-11 and to isolate the secondary winding of the normal station service transformer (NSST) (a fault in both reserve station service transformer (RSST) and NSST is assumed) from the tie between the NSST secondary and emergency buses 101, 102, and 103. The procedure also demonstrates the ability of the operators to close 1R22-ACB-11-1B (supplemental diesel feeder breaker in 1R22-SWG-11) and to advise the control room of emergency diesel generator units status and availability.

The inspectors observed that correct copies of the procedure were in use by the training participants and that the test was initiated in accordance with the procedure (TP #85.84042.3). During the test performance one inspector remained in the control room and one inspector accompanied those operators dispatched from the control room to reposition electrical breakers and switches in the normal and emergency switchgear rooms and out in the yard. The inspector observed that the operators made use of and followed the procedure and that required safety precautions were taken in use of the dead pole switch-hook to open, and subsequently, close the yard knife switches.

The inspectors concluded that this training evaluation was completed satisfactorily and that all plant equipment operated properly.

#### 7.0 Review of the Master Punch List

The licensee maintains a computerized Master Punch List (MPL) to track and status those outstanding items which must be accomplished prior to licensing and initial plant operation. The list includes licensee identified items as well as NRC identified items. These items are categorized by system number and prioritized according to need. These categories include: OC5 = fuel load; OC2A - initial criticality; TC1 - 5-20% power; etc. The inspector performed a sample review of the MPL to verify that all safety significant items had been prioritized correctly and that none of the items which remained open would adversely affect safety. A sample which included the following systems was reviewed:

- B21 Nuclear Boiler
- C41 Standby Liquid Control
- C51 Neutron Monitoring
- E11 Residual Heat Removal
- E21 Core Spray
- E41 Hi Press Cool Injection
- E51 Reactor Core Isolation Cooling
- G33 Reactor Water Cleanup
- G41 Fuel Pool Cool and Cleanup
- M50 RBSVS & Cont. Rm. Chilled Water
- N11 Main Steam
- P41 Service Water
- P42 RBCLCW
- R43 Diesel Emergency Power
- R51 Communication (Intraplant)
- T23 Reactor Primary Cont.
- T24 Primary Cont. Inerting
- T46 Reactor Building Standby Ventilation
- T48 Primary Containment Atmospheric Cont.
- X60 Diesel Generator Ventilation

During this review the inspector noted that most of the items on the MPL had little nuclear safety significance. Many of the items were maintainability improvement items such as installation of lifting eyes, work platforms, and ladders, to improve access to plant equipment. Those outstanding items on the list which could affect the performance of safety related equipment were appropriately prioritized and would be resolved prior to the need for the

affected equipment. The inspector identified no new concerns during this review of the MPL.

#### 8.0 Colt Diesel Generator Building

Status: The licensee continues construction of the new Colt Diesel Generator Building on a two shift per day, six days per week basis. The structural concrete for the building is essentially complete up to and including the roof; work continues on the diesel intake and exhaust structures. Electrical work is also underway; the power and instrument cables between the new building and control building have been pulled and cable termination is underway. Most of the electrical conduit has been installed in the building. All of the electrical panels and motor control centers are in place. Mechanical and electrical connection of the three installed Colt Diesel Generators continues. All construction is expected to be completed by the end of 1984. Preoperational Testing will commence at that time and continue through May 1985.

The licensee is presently evaluating the feasibility of using the new Colt Diesel Generators as supplements to the existing Transamerica Delaval Diesel Generators, rather than as replacements. There would be six generators in standby service if this plan is implemented.

#### 9.0 Site Tours

The resident inspectors conducted periodic tours of accessible areas in the plant, in the new Colt Diesel Generator Building and in the supplemental fuel storage building. During these tours the following specific items were evaluated:

- Hot Work - Adequacy of fire prevention/protection measures used;
- Fire Equipment - Operability and evidence of periodic inspection of fire suppression equipment;
- Housekeeping - Maintenance of required cleanliness levels;
- Equipment Preservation - Maintenance of special precautionary measures for installed equipment, as applicable;
- QA/QC surveillance - Pertinent construction activities were being surveilled on a sampling basis by qualified QA/QC personnel;
- Security - Adequate construction security;
- Weld Rod Control - Observations to determine weld rod was being controlled per site procedures;
- Component Tagging - Implementation of appropriate equipment tagging for safety, equipment protection, and jurisdiction; and
- Cable Pulling - Proper precautions including lubrication and monitoring of cable tension.

No discrepancies were identified.

10.0 Unresolved Items

Areas for which more information is required to determine acceptability are considered unresolved. Unresolved items are contained in paragraphs 3 through 5.

11.0 Management Meetings

At periodic intervals during the course of this inspection, meetings were held with licensee management to discuss the scope and findings of this inspection.

The resident inspectors also attended the entrance and exit meetings for inspections conducted by region-based inspectors during the period.

12.0 Plant Visit By NRC Commissioner Lando W. Zech, Jr.

Commissioner Zech, accompanied by his Technical Assistant David Kumenansky, and Administrative Assistant Jeanne Turner, visited the Shoreham Site on September 25, 1984. He met with the resident inspectors and discussed the status of the NRC inspection program. He then met with the licensee's management personnel including John Leonard, VP Nuclear and W. Steiger, Plant Manager to discuss the plant staff organization, operating staff experience levels, and the status of remaining outstanding items. He performed a tour of the site which included the Reactor Building, the drywell, the refueling floor, the Radwaste Building, the Turbine Building, and the new Colt Emergency Diesel Generator Building. During the tour the Commissioner questioned the on-shift reactor operators, health physics technicians, and radwaste system operators to evaluate their qualifications and experience.