

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-322/84-35

Docket No. 50-322

License No. CPPR-95 Priority -- Category B

Licensee: Long Island Lighting Company

175 East Old Country Road

Hicksville, New York 11801

Facility Name: Shoreham Nuclear Power Station

Inspection At: Shoreham, New York

Inspection Conducted: September 11-13, 1984

Inspectors: A. E. Finkel
A. E. Finkel, Lead Reactor Engineer

10/22/84
date

Approved by: Clifford J. Anderson
C. J. Anderson, Chief, Plant System
Section, Engineering Programs Branch,
DETP

10/22/84
date

Inspection Summary:

Inspection on September 11-13, 1984 (IE Report No. 50-322/84-35)

Areas Inspected: Routine unannounced inspection of licensee's action on previous inspection findings, NRC Bulletins and construction of the diesel generator building. The inspection involved 31 inspector hours onsite by one region-based inspector and 4 in-office inspector hours.

Results: No violations were identified.

DETAILS

1. Persons Contacted

1.1 Long Island Lighting Company

- *M. Garofalo, Project Engineer, (CEDGE)
R. Grunseich, Supervisor, Nuclear Licensing
- *J. Mc Carthy, Quality Assurance Supervisor
J. Smith, Project Manager
- *E. Tesko, Construction Manager, (CEDGE)

1.2 Stone and Webster Corporation

- K. Petty, Supervisor, Electrical Power Equipment
- W. Shosho, Electrical Engineer

1.3 United States Nuclear Regulatory Commission

- *P. Eselgroth, Senior Resident Inspector
- *C. Petrone, Resident Inspector

*Denotes those present at exit interview on September 13, 1984.

2. Licensee Action on Previous Inspection Findings and NRC Bulletins

(Closed) Bulletin 83-08 Electrical Circuit Breakers With An Undervoltage Trip Feature In Use In Safety-Related Applications Other Than The Reactor Trip System

In the review by the licensee of their design, they state that they have no Westinghouse type DB, PS or General Electric type AK-2 circuit breakers with Under Voltage Trip Attachments (UVTA), as discussed in IE Bulletin 83-01 and 83-04, utilized in the safety related electrical systems at the Shoreham Nuclear Power Station.

In a review to address the concerns of I.E. Circular 81-12, the licensee addressed undervoltage trip features of breakers in emergency buses 101, 102, and 103 and the 4.16KV recirculation pump trip circuits.

Shoreham is using a molded case type circuit breaker consisting of a thermal-magnetic trip element and operating mechanism with contacts and interrupting means in a molded insulation case. The operating mechanism is quick-make, quick-break and trip-free so that the contacts cannot be held closed against either a short circuit or an overload.

The problems encountered as described in IEB 83-08 are not a concern in this design. Operating experience with the licensee's present UV trip features did not provide failure data as described in the IE Bulletin.

(Closed) Bulletin 84-02 Failure of HFA Relays In Use In Class 1E Safety Systems

The cracking of Lexan coils as described in General Electric Service Advice letters 152.2 and 152.2a was reported to the NRC (ref SNRC-694). G.E. SIL-44 and supplemental corrective actions required the replacement of the HFA relay coil with a GE Century, Series Tefzel Coil, or the replacement of the entire relay with a Century Series relay.

Safety-related type HFA relays were either replaced with GE Century relays or had their coil assemblies replaced with Tefzel coils. The licensee has also removed all Nylon/Lexan coils from the safety-related equipment storage inventory.

Inspection verification of the modification and parts storage area was documented in IE Inspection Report No. 50-322/83-16.

(Closed) CRD 84-C0-01 EDG-Turbo Charging Bearing Failures

The turbocharger manufacturer (Elliot) attributed the thrust bearing failures to the lack of proper lubrication during the starting cycle of the diesel engine. The licensee has modified their present design with a thrust bearing pre-lube system. This item was listed as an unresolved item in IE Report No. 84-02-01 and closed in Report 84-30.

(Closed) IE Bulletin 79-01B Environmental Qualification of Electrical Equipment

The licensee has transmitted documentation with supplements to the NRC for compliance with the criteria of 10 CFR 50.49. This item is presently under evaluation by the NRC and will be addressed in the Safety Evaluation Report (SER) for this site.

(Closed) Unresolved Item 82-24-01 - Use of Sil-Temp As An Electrical Barrier Material While Maintaining The Cable Ampicity Derating Factors Within a Range That Would Not Degrade The Cable

To determine if the derating factors applied to the cables after the application of Sil-Temp was still within the present cable derating factors for that cable, the inspector reviewed the licensee's calculation and the

reference source material. The following reference material supports the methods and results that the licensee established in their Calculation Sheets, Revision 1, titled "Effect of Sil-Temp Wrap on Cable Ampacity, Using Manufactures Test Data."

Reference Data - "The Calculation of The Temperature Rise and Load Capability of Cable Systems" by J. H. Neher and M. H. McGrath and "Cable Geometry and The Calculation of Current Carrying Capacity" by D. M. Simons.

The references above supports the methodology used by the licensee in their Sil-Temp calculations and is one of the industry acceptable methods of analyzing this type of configuration.

This item is closed.

(Closed) Unresolved Item (84-29-05): Cable Tray Support Connections Allegation (RI-83A-45)

The inspector reviewed Stone and Webster's (S&W) response addressing the NRC staff questions related to the above allegation. The ten standard support connection details identified in the allegation were reviewed by Stone and Webster. Only nine of these connection standards are used at Shoreham, two of which utilize welded connection details. The remaining seven connections represent the only cable tray standard connections at Shoreham for which prying action is a concern. A detailed finite element analysis was performed for each standard connection. The models used, the largest (worst case) connection loads, as input loading, as determined from individual support calculations, for each type of standard connection.

The inspector reviewed the analysis results provided by Stone and Webster and verified that the maximum calculated bolt load for each standard connection, including the prying action, was less than the specified allowable design load.

This allegation is closed.

3. Diesel Generator Building

3.1 The Diesel Generator Building is a Category 1, reinforced concrete structure approximately 83 feet wide, 108 feet long and 51 feet high. It houses three Colt-Pielstick 4430 KW diesel generators in three separate rooms. The diesel generator building is considered as a modification to the existing construction and the licensee, as stated, is complying to the applicable codes, standards and specifications as listed in the Final Safety Analysis Report (FSAR) section 3.8.4.2.

3.2 The electrical specification titled "Electrical Specification for Electrical Installation for Colt Emerging Diesel Generator Effort", dated June 28, 1984, was in the review cycle by the licensee during this inspection period. The inspector noted in his review of this document that 1973 and 1974 documentation was referenced. The licensee has up-dated some FSAR references, but in general the original FSAR codes, standards and specifications are being used in this modification.

3.2.1 The licensee has documented their position on the diesel generator building in the following documentation.

3.2.1.1 Long Island Lighting Company document titled "Colt Diesel Generator Summary, Shoreham Nuclear Power Station, Unit 1, dated June 11, 1984, SNRC-1049, J. Leonard, Jr. to H. Denton, and

3.2.1.2 Long Island Lighting Company document titled "Diesel Generator Replacement - Shoreham Nuclear Power Station - Unit 1", dated June 19, 1984, SNRC-1050, J. Leonard, Jr., to Dr. T. F. Murley.

No violations were identified.

4. Exit Meeting

The inspector met with licensee and contractor representatives (denoted in paragraph 1) at the conclusion of the inspection on September 13, 1984. The inspector summarized the scope and findings of the inspection as described in this report.

At no time during the inspection was written material provided to the licensee by the inspector.