SC LP-17

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

MAR 24 1983

Docket No. 50-322

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

Gentlemen:

Subject: Inspection No. 50-322/83-07

This refers to the routine safety inspection conducted by Mr. H. Nicholas of this office on February 28 - March 4, 1983, at Shoreham Nuclear Power Station, Shoreham, New York, of activities authorized by NRC License No. CPPR-95 and to the discussions of our findings held by Mr. Nicholas with Mr. E. Youngling at the conclusion of the inspection.

Areas examined during this inspection are described in the NRC Region I Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Within the scope of this inspection, no violations were observed.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure will be placed in the NRC Public Document Room unless you notify this office, by telephone, within 10 days of the date of this letter and submit written application to withhold information contained therein within 30 days of the date of this letter. Such application must be consistent with the requirements of 2.790(b)(1). The telephone notification of your intent to request withholding, or any request for an extension of the 10-day period which you believe necessary, should be made to the Supervisor, Files, Mail and Records, USNRC Region I, at (215) 337-5223.

No reply to this letter is required. Your cooperation with us in this matter is appreciated.

Sincerely,

Thomas T. Martin, Director
Division of Engineering and
Technical Programs

Enclosure: NRC Region I Inspection Report Number 50-322/83-07

50-322 OL-4

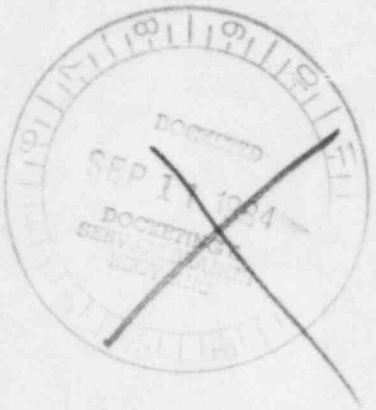
I-SC-LP-17
8/1/84

NUCLEAR REGULATORY COMMISSION

Docket No. 50-322-OL-4 Official Exh. No. _____
In the matter of LILCO - Low Power
IDENTIFIED ✓
RECEIVED ✓
REJECTED _____

Staff _____
Applicant _____
Intervenor ✓
Cont'g Off'r _____
Contractor _____
Other _____
DATE 8/1/84
Witness McCaffrey

Reporter _____



cc w/encl:
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Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New York

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 50-322/83-07

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: February 28 - March 4, 1983

Inspector: H. H. Nicholas 3/22/83
H. H. Nicholas, Reactor Inspector date

Approved by: L. J. Norrholm 3/22/83
L. J. Norrholm, Acting Chief, Test Programs Section date

Inspection Summary: Inspection on February 28 - March 4, 1983 (Report No. 50-322/83-07)

Areas Inspected: Routine, unannounced inspection of licensee's action on previous inspection findings; pre-operational test program including test program status and implementation, test procedure review, verification and test results evaluation, test witnessing; and tours of the facility. The inspection involved 42 inspector-hours onsite by one region-based inspector.

Results: No violations were identified.

DETAILS

1. Persons Contacted

Long Island Lighting Company

M. Museler, Manager, Construction and Engineering
J. Rose, OQA Engineer
* D. Terry, Assistant Startup Manager
* A. Todoro, OQA Inspector
* E. Youngling, Startup Manager

Stone and Webster Corporation

T. Brown, Startup Engineer
W. Cook, Startup Engineer
* W. Matejek, Project Advisory Engineer
T. Paulantonio, Lead Startup Engineer

General Electric Corporation

K. Nicholas, Lead Startup Engineer

U. S. Nuclear Regulatory Commission

* J. Higgins, Senior Resident Inspector
* E. McCabe, Section Chief, Region I

*Denotes those present at exit interview on March 4, 1983.

2. Licensee Action on Previous Inspection Findings

(Open) Unresolved Item (50-322/83-03-01). Some of the test exceptions in this item were resolved and reviewed by the inspectors. The remaining exceptions that are still open are listed below:

Procedure	Title	Exceptions
PT 119.001-1	RCIC	013
PT 120.001-1	RW RECIRC	033
PT 120.002	RPV INT VIB	008, 012
PT 123.001-1	SBLC	019, 020, 021
PT 202.001-1	HPC 1	003, 016, 023, 024
PT 607.001	RWM	007
PT 610.001	RPIS	016
PT 702.005	SUPP POOL PB	006
PT 704.001	RB POLAR CRANE	008
AT 102.001-1	VAC PRIME	010, 011
AT 132.001-2	HYPO CHL INJ	004

AT 308.001 A	4160 V NORM BUS	002, 005
AT 308.001 B	4160 V NORM BUS	003, 006
AT 317.001-1	120 V LTG	003

This unresolved item will be reviewed on subsequent inspections. This item is open.

3. Preoperational Test Program

References:

-- SNPS Final Safety Analysis Report

-- SNPS Startup Manual

-- SNPS Safety Evaluation Report, NUREG-0420, and Supplements 1, 2, and 3

-- SNPS Project Schedules

-- SNPS Startup Procedure Status Listing

-- SNPS Startup Monthly Program Report

-- RG 1.68, Initial Test Programs for Water Cooled Reactor Power Plants

-- RG 1.6, Independence Between Redundant Standby (Onsite) Power Sources and Between Their Distribution Systems

-- RG 1.9, Selection, Design, and Qualification of Diesel Generator Units Used as Standby (Onsite) Electric Power Systems

-- RG 1.30, Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electrical Equipment

-- RG 1.32, Criteria for Safety-Related Electric Power Systems for Nuclear Power Plants

-- RG 1.41, Preoperational Testing of Redundant Onsite Electric Power Systems to Verify Proper Load Group Assignments

-- RG 1.75, Physical Independence of Electric Systems

-- RG 1.93, Availability of Electric Power Sources

-- RG 1.100, Seismic Qualification of Electric Equipment for Nuclear Power Plants

-- RG 1.108, Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems

-- RG 1.118, Periodic Testing of Electric Power and Protection Systems

-- IEEE 387, Criteria for Diesel Generator Units Applied as Standby Power Supplies

3.1 Test Program Status and Implementation

Scope:

The inspector met with the Startup Group and licensee representatives and discussed the status of construction; system turnovers; preoperational test program implementation; completed preoperational tests and remaining tests; test procedures approved for testing, awaiting test results evaluation, review and approval; and completed systems turned over to plant staff. Discussions also included system turnover from the preoperational startup group to plant staff; preparations for the integrated electrical test; follow-up of open, unresolved items; fire protection, prevention, hazards, housekeeping and cleanliness; diesel generator set testing and witnessing by NRC; the inspector's review of completed tests and turnover packages for licensee's review, evaluation and approval of test results; and test witnessing of remaining tests by NRC. The inspector reviewed the monthly startup report, the system turnover list, project schedules, the startup procedure status listing, the startup program report, and plans of the day showing work in progress and testing of components and systems scheduled to start or be tested from day to day.

Findings:

As a result of these discussions review of references, review of documents relative to test program status and implementation, observations, tours through the plant, and witnessing of tests in progress, no discrepancies were noted. The inspector's concerns and findings in specific areas are discussed below:

3.2 Test Procedure Review, Verification and Test Results Evaluation

Scope:

The 34 completed test procedures listed in Attachment A were reviewed to verify that adequate testing was planned in order to satisfy regulatory guidance and licensee commitments and to ascertain whether uniform criteria are being applied for evaluating completed preoperational tests in order to assure their technical and administrative adequacy.

The inspector reviewed the test results and verified the licensee's evaluation of test results by review of test changes, test excep-

tions, test deficiencies, "As-Run" copy of test procedure, acceptance criteria, performance verification, recording conduct of test, QC inspection records, restoration of system to normal after test, independent verification of critical steps or parameters, identification of personnel conducting and evaluating test data, and verification that the test results have been approved.

Findings:

No discrepancies were noted in the review of these procedures. The following unresolved test exceptions were noted in this review:

Procedure	Title	Exceptions
PT 117.003-1	ADS RVA PRESS TEST	003
PT 122.001-1	RBSW	001, 002, 003, 011, 012, 020
PT 136. 003	ADS	001, 005, 006
PT 319.001-1	PLT COMM	004, 021, 022, 023, 024
PT 411.001-2	RELAY, COMP SWGR, ETC HVAC RM SYS	008
AT 101.001	AUX BLR ETC	006
AT 308.002 A	4160 V NORM BUX 11	008, 009. 010, 011
AT 308.002 B	4160 V NORM BUS 12	001, 002, 003
AT 317.002	YARD LTG	002, 004, 006, 007
AT 409.001-3	PFF BLDG SERV VENTL	002, 003, 004, 006, 007, 013

These procedures will be examined on subsequent inspections for resolution of the listed exceptions and approval by the licensee. This is Unresolved Item (50-322/83-07-01).

3.3 Diesel Generator Set Test Witnessing

Scope:

During this inspection period, the inspector witnessed portions of the 72 hour preliminary electrical test runs of emergency diesel generator sets 101, 102 and 103. Observations by the inspector during these tests included review of overall crew performance as reflected in the following characteristics:

-- approved procedures with latest revision available and in use by test personnel,

-- designated person in charge and conducting the test,

-- minimum test personnel requirements met,

-- test prerequisites met,

-- proper plant supporting systems in service,

-- special test equipment required by test procedure, calibrated and in service,

-- testing performed as required by test procedure,

-- test personnel actions appeared to be correct and timely during performance of test,

-- data was collected for final analysis by proper personnel, and

-- periodic observation of generator loads and parameters of the diesel engines and supporting systems.

Findings:

Although the 72 hour electrical test runs of the diesel generators were preliminary in nature and no violations or discrepancies were noted by the inspector, the testing of the diesel generator sets was accompanied by problems similar to the many problems that have occurred relating to the diesel generator sets in the past year of testing.

To date, the diesel generator sets have the following tests completed: the vendor's tests of 300 starts and the licensee's mechanical tests. The licensee's 72 hour electrical tests, the 24 hour electrical load tests, and finally, the 23 start qualification tests are yet to be completed. The final completion of diesel generator testing will occur with the integrated electrical test where the diesel generators are used during a simulated loss of coolant accident (LOCA) with the loss of offsite power (LOOP).

Through review of licensee's documents and reports, observations and witnessing, the inspector raised the following concerns to the licensee's representatives:

-- an apparent overall excessive vibration problem exists with all three of the diesel generator sets,

-- there are many apparent causal factors underlying the numerous incidents that have occurred to the diesel generator sets,

-- the reliability for continuous operation and for standby electric power is questionable at this point, and

-- further trend analysis of these incidents and occurrences is required to resolve the continuing high incident rate of problems and failures to the diesel generator sets.

In reviewing LILCo Deficiency Reports (LDR), the inspector noted the following diesel generator incidents and/or failures that have occurred during the past year. They are grouped as follows:

-- in the engine exhaust area, nine occurrences,

-- in the engine barring device area, four occurrences,

-- in the engine turbocharger area, six occurrences,

-- in the engine cylinder head area, five occurrences,

-- in the engine jacket water pump area, five occurrences,

-- in the engine fuel oil injection line area, two occurrences,

-- in the engine jacket water cooler area, one occurrence,

-- in the engine lube oil cooler area, one occurrence,

-- in the engine discharge water manifold area, one occurrence

-- in the engine chemical addition area, one occurrence

-- in the engine air start line area, one occurrence

-- in the engine lube oil line area, one occurrence

-- in the engine pump flange area, one occurrence

-- in the engine rocker arm pushrod area, one occurrence

-- in the engine crankshaft main bearing cap area, three occurrences,

-- in the engine cam gear case area, one occurrence,

-- in the engine crankshaft thrust clearance area, one occurrence,

-- in the engine piston area of all three engines, one occurrence,

-- in the engine governor area, one occurrence, and

-- in the engine turbocharger turbine area, one occurrence.

This listing included the internal modifications made to the three engines and the modifications made to the turbocharger supports and expansion joints.

The above findings constitute an immediate concern to the NRC and were presented to the licensee's representatives by the inspector at the exit meeting on March 4, 1983. The licensee acknowledged the inspector's findings and concerns and committed to pursue them. This item is designated Unresolved Item (50-322/83-07-02). This area will be examined on subsequent inspections to evaluate the resolution to these problems prior to performance of the integrated electrical test.

4. Plant Tours

The inspector made several tours of the facility during the course of the inspection. The tours included the containment drywell, reactor building, control room, emergency switchgear rooms, battery rooms, diesel generator rooms, fuel oil transfer pump rooms, recirculation pump MG set rooms, auxiliary boiler rooms, screenwell house and circulatory water pump area.

The inspector followed up on discussion items, witnessed testing in progress, observed work in progress, housekeeping and cleanliness, storage and protection of components and equipment, and included inspection of previous observations and concerns. No items of noncompliance were observed during these tours. The inspector noted the marked improvement in the specific area of the containment drywell and in the general area of the reactor building at all levels in regards to cleanliness and removal of trash and construction items not being used. The inspector noted the excellent care being given the diesel generator rooms and battery rooms including security for these areas.

5. Unresolved Items

Unresolved items are matters about which more information is required to ascertain whether they are acceptable items, violations or deviations. Unresolved items resulting from the inspection are discussed in Section 3.

6. Exit Interview

At the conclusion of the site inspection on March 4, 1983, an exit meeting was conducted with the licensee's senior site representatives (denoted in paragraph 1). The inspector summarized the scope and findings of the inspection. Previous inspections in this area were also discussed.

ATTACHMENT A

PREOPERATIONAL TEST PROCEDURES REVIEWED

PT 117.003-1 approved November 23, 1982. Automatic Depressurization System Relief Valve Accumulator Pressure Test, test results reviewed, evaluated and approved February 1, 1983.

PT 122.001-2 approved August 14, 1982. Reactor Building Service Water, test results reviewed, evaluated and approved January 31, 1983.

PT 136.001-2 approved August 1, 1982. Nuclear Boiler Process Instrumentation, test results reviewed, evaluated and approved February 8, 1983.

PT 136.003 approved November 19, 1980. Automatic Depressurization System, test results reviewed, evaluated and approved February 8, 1983.

PT310.002 A approved December 14, 1981. 480 Volt Low Pressure Coolant Injection - Motor Generator Sets, test results reviewed, evaluated and approved January 25, 1983.

PT 310.002 B approved March 30, 1982. 480 Volt Low Pressure Coolant Injection - Motor Generator Sets, test results reviewed, evaluated and approved January 25, 1983.

PT 319.001-1 approved June 21, 1982. Plant Communications, test results reviewed, evaluated and approved February 16, 1983.

PT 411.001-2 approved August 20, 1982. Relay, Computer, Emergency Switchgear, Chiller Equipment, Elevation 44' and HVAC Equipment Rooms, Ventilation and Air Conditioning Systems, test results reviewed, evaluated and approved February 8, 1983.

PT 654.006-1 approved December 8, 1982. Drywell Suppression Pool Vacuum Breaker Leak Test, test results reviewed, evaluated and approved February 1, 1983.

PT 654.008-1 approved October 12, 1982. Personnel Airlock and Emergency Airlock, test results reviewed, evaluated and approved December 30, 1982.

PT 656.001-1 approved May 10, 1979. Feedwater Control System, test results reviewed, evaluated and approved February 16, 1983.

PT 663.003 approved January 11, 1983. Technical Support Center Phase I Software, test results reviewed, evaluated and approved February 17, 1983.

PT 702.001 approved July 29, 1982. DryWell Drainage, test results reviewed, evaluated and approved February 1, 1983.

AT 000.002 approved August 1, 1982. Station Grounding, test results reviewed, evaluated and approved January 28, 1983.

AT 103.001 approved May 15, 1981. Condensate and Feedwater, test results reviewed, evaluated and approved June 16, 1982.

AT 110.001 approved September 1, 1982. Moisture Separator Reheater and Feedwater Heater Drains, test results reviewed, evaluated and approved December 10, 1982.

AT 115.001 approved June 22, 1982. Main Generator Excitation, test results reviewed, evaluated and approved October 27, 1982.

AT 116.001 approved June 30, 1978. Main and Auxiliary Steam Including RFPT, test results reviewed, evaluated and approved November 6, 1982.

AT 122.001 approved April 29, 1982. Turbine Building Service Water, test results reviewed, evaluated and approved January 5, 1983.

AT 124.001-1 approved March 3, 1980. Steam Seal and Radwaste Steam Supply, test results reviewed, evaluated and approved November 6, 1982.

AT 128.001 approved June 9, 1977. Turbine Exhaust Hood Sprays, test results reviewed, evaluated and approved June 7, 1982.

AT 130.002 approved April 30, 1982. RFPT Lube Oil and Turning Gear, test results reviewed, evaluated and approved October 12, 1982.

AT 308.002 A approved February 25, 1981. 4160 Volt Normal Bus 11 Distribution, test results reviewed, evaluated and approved October 27, 1982.

AT 308.002 B approved February 25, 1981. 4160 Volt Normal Bus 12 Distribution, test results reviewed, evaluated and approved October 27, 1982.

AT 315.001 A approved November 6, 1982. 125 VDC Block Load Batteries N1, test results reviewed, evaluated and approved January 18, 1983.

AT 315.001 B approved August 28, 1982. 125 VDC Block Load Batteries N2, test results reviewed, evaluated and approved December 22, 1982.

AT 317.002 approved October 2, 1982. Yard Lighting, test results reviewed, evaluated and approved January 28, 1983.

AT 410.002 approved October 20, 1982. Block Battery Room Ventilation System, test results reviewed, evaluated and approved October 26, 1982.

AT 659.001-2 approved September 1, 1982. Meteorological Monitoring, test results reviewed, evaluated and approved November 30, 1982.

AT 660.002 approved August 27, 1982. Inservice Inspection - Vibration and Temperature Monitoring, test results reviewed, evaluated and approved February 22, 1983.

AT 701.001 approved May 19, 1978. Condenser Air Removal System, test results reviewed, evaluated and approved August 24, 1982.

AT 101.001 approved April 10, 1978. Auxiliary Boiler and Associated Support Systems, test results reviewed, evaluated and approved December 7, 1978.

AT 409.001-3 approved December 10, 1976. Office Service Building Ventilation System, test results reviewed, evaluated and approved October 5, 1978.

CS 136.001-1 approved September 18, 1979. Reactor Pressure Vessel and Main Steam Line Hydrostatic Test, test results reviewed, evaluated and approved June 19, 1980.