

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-322 / 81-14

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, Unit 1

Inspection at: Shoreham, New York

Inspection conducted: August 1 - 31, 1981

Inspectors: J. C. Higgins 9/3/81
J. C. Higgins, Senior Resident Inspector date signed

date signed

date signed

Approved by: H. B. Kister 9/9/81
H. B. Kister, Chief, Reactor Projects Section 1C date signed
Projects Branch #1, DRPI

Inspection Summary:

Inspections on: August 1 - 31, 1981 (Inspection Report No. 50-322/81-14)

Areas Inspected: Routine onsite regular and backshift inspections by the resident inspector (91 inspection hours) of work activities, preoperational testing, and plant staff activities including: tours of the facility; test witnessing; review of test procedures; review of plant tagging systems; witnessing of feedwater sparger installation, and followup on previous inspection findings.

Results: Of the seven areas inspected, no violations were identified in six areas and one in the seventh area (failure to follow procedures, paragraph 7).

DETAILS

1. Persons Contacted

T. Autagne, Site Manager (RCI)
D. Durand, Lead Startup Engineer (L)
T. Gerecke, Quality Assurance Manager (L)
J. Kelly, Field QA Manager (L)
W. Matejek, Lead Advisory Engineer (S&W)
B. McCaffrey, Manager, Project Engineering (L)
J. Morin, Senior Licensing Engineer (L)
A. Muller, Acting OQA Engineer (L)
R. Reen, Site Security Supervisor
J. Riley, Lead Startup Engineer (GE)
W. Steiger, Chief Operating Engineer (L)
D. Terry, Assistant Startup Manager (L)
E. Youngling, Startup Manager (L)

GE - General Electric
L - Long Island Lighting Company
RCI - Reactor Controls, Inc.
S&W - Stone and Webster

The inspector also held discussions with other licensee and contractor personnel during the course of the inspection including management, clerical, maintenance, operations, engineering, testing, quality assurance and construction personnel.

2. Previous Inspection Item Update

(closed) Inspector Follow Item (322/81-06-02): ECCS Suction Strainer Testing: In letters to the NRC numbered SNRC-598 and SNRC-602, the licensee has committed to verify the flow capability of both the HPCI and RCIC pumps with their suction strainers 50% plugged during the Preoperational Test Program. This addresses the inspector's concern and the item is closed.

(open) Unresolved Item (322/81-04-07): Alarm Response Procedures (ARPs): Startup Instruction No. 1, Rev. 5 now specifies the review and updating of ARPs. The inspector noted that not all ARPs, for annunciators under startup control (blue dotted) or under plant staff control (no dots), have been updated. This item remains open pending the review and updating of ARPs already in use.

3. Plant Tour

a. Discussion

The inspector conducted periodic tours of accessible areas in the plant during normal and backshift hours. 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: Minimal accumulations of debris and maintenance of required cleanliness levels of systems under or following testing.
- Equipment Preservation: Maintenance of special precautionary measures for installed equipment, as applicable.
- Component Tagging: Implementation and observance of equipment tagging for safety, equipment protection, and jurisdiction.
- Logs: Completeness of logs maintained.
- Security: Adequate site construction security.
- Post-Accident Radiation Monitors: Discussions with licensee and NRC representatives regarding adequacy of monitors per NUREG-0737 item II.F.1 and plant tours to observe equipment locations and arrangements.
- Weld Rod Control: Observations to determine weld rod was being controlled in accordance with site procedures.

With the exception of the below item and those in paragraph 7, no discrepancies were identified.

b. Plant Stack

All plant, gaseous, potentially radioactive, effluents exit in the main station exhaust stack. The Reactor Building Standby Ventilation System (RBSVS) exits the Reactor Building and then according to FSAR Figure 6.2.3-1 and NUREG-0737 Item II.F.1 submittal, enters into the station exhaust stack. The inspector noted on tours that the RBSVS actually has its own smaller stack which runs next to the station exhaust stack. Licensee representatives were unable to explain the differences during the inspection. This item is unresolved pending action to make the plant and the licensing submittals agree and is designated as unresolved item no. (322/81-14-03).

4. Test Witnessing

a. Discussion

The inspector witnessed portions of the below tests:

- CG.000.012, "Insulation Resistance of Electrical Equipment", performed on the Reactor Building Closed Loop Cooling Water (RBCLCW) System Pumps;
- CG.000.014, "Motor Operated Valve Static Test" performed on RBCLCW valves; and;
- CG.000.022, "480V AC MCC Cubicle and Control Circuit Test" performed on RBCLCW valve motor circuitry.

During the tests the inspector noted that:

- the test procedure was approved and released for performance as required;
- test procedure was in use by personnel performing the test;
- test personnel were suitably qualified;
- test exceptions and problem areas were appropriately documented;
- test instrumentation was properly calibrated;
- data was properly logged; and
- test acceptance criteria were met for portions observed or appropriate action taken to initiate corrective action.

With the exception of the below item no discrepancies were identified.

b. Valve Stroke Times

The inspector noted that the valve stroke times specified on procedure CG.000.014 data sheets did not agree with the FSAR values in Table 6.2.4-1 in some cases. For example, the times for containment isolation valves P42*MOV-035, 036, 047 and 048 for the RBCLCW System were listed 60 seconds on the data sheets but 23 seconds in the FSAR. The inspector questioned how the data sheet values for valve stroke times were determined. The licensee's representative stated that this area would be reviewed. This item is unresolved and is designated unresolved item no. (322/81-14-02).

c. Halon Fire Protection System Test

The Remote Shutdown Panel is located in the Reactor Building and is protected from fire by a local, total flooding, Halon fire protection system. The inspector noted that the system was scheduled for its final startup testing during the inspection period using a vendor test, which was not reviewed or approved by the Startup organization. The response to FSAR question 413.26 commits to testing the fire protection systems using approved preoperational tests (PTs). The Startup Manual, Section 7.6.1 and 7.6.2 requires that all Checkout and Initial Operations Tests be done to approved procedures and that vendor tests to be used be submitted for appropriate approval. The vendor test was performed, but the licensee stated that no credit would be taken for the test and that a preoperational test (PT) would be written, approved, and performed on the Halon System. This item is unresolved pending inspector review of an approved PT for the Halon System and is designated item no. (322/81-14-04).

5. Feedwater Spargers

a. Documentation Reviewed

- NUREG-0619, "BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking"
- SER Open Item #13 response, "Feedwater Nozzle and Control Rod Return Line Cracking" from SNRC-566.
- E&DCR F20462A and FDI 84/88 524, Installation instructions for feedwater spargers.
- E&DCR F36548 and FDDR KS-01-460, Disposition for incorrectly assembled feedwater spargers.
- Pertinent drawings.
- NEDE-21821-A, "Boiling Water Reactor Feedwater Nozzle/Sparger Final Report".

b. Scope and Findings

Over the past several years feedwater nozzle cracking has been a problem at Boiling Water Reactors. NUREG-0619 describes the problem and proposed solutions. The licensee has committed to portions of these solutions.

The inspector observed the newly designed interference fit triple sleeve feedwater spargers and the unclad feedwater nozzles and compared the various design features to those described in the above documents. The inspector also witnessed selected portions of the assembly, repair and installation into the Reactor Vessel of the feedwater spargers and noted that selected procedural and drawing requirements were being met. The inspector also noted that controls were being maintained over personnel and equipment entry into the Reactor Vessel. Based on the review of the above documents and selected observations, the inspector noted that licensee commitments to the NRC and specification requirements were met.

6. Cable Pulling Lubricant

The cable pulling lubricant, Flaxoap has been reported by another licensee to have the potential for becoming fluid at high temperatures, running out of conduit into junction or control boxes, and shorting out electrical connections since the fluid is conductive. The inspector discussed this problem with the licensee and requested that the licensee determine if a similar condition may exist at this site. The licensee determined that Flaxoap was not used at Shoreham and that of the two lubricants used onsite, one turns to powder when heated and the other dries to a wax film which is not conductive if it should melt. The inspector had no further questions in this area.

7. Tagging Systems

a. Documents Reviewed

LILCO Startup Manual

S.P. 12.035.01, Rev. 2, "Control of Lifted Leads and Jumpers"

S.P. 12.006.02, Rev. 10, "Station Procedures - Control and Distribution"

Startup Jumper Records

Plant Staff Lifted Lead and Jumper Log

Various Tagout Logs

Active tags and jumpers

b. Discussion

The inspector reviewed plant tagging systems in the following areas:

- Jurisdictional tagging; yellow construction tags, blue startup tags and green plant staff tags;
- Danger tags; red tags used by startup and plant staff; and
- Jumper and Lifted Lead systems in use by startup and by the plant staff.

The inspector reviewed the controlling documents or procedures; sampled the log books, files, permit sheets and tagout sheets; observed the installation and proper usage of tags in the plant; and toured various areas of the plant, particularly inside control panels and motor control center cubicles, to determine if components or wires were operated or lifted without implementing tagging as required. The below discrepancies were identified during the review and are collectively designated as a violation (322/81-14-01).

c. Findings

10 CFR 50, Appendix B, Criterion V, FSAR section 17.2.5 and the LILCO Operational QA Manual section 5.3.1 require that activities be accomplished in accordance with instructions. The LILCO Startup Manual and Station Procedures provide detailed instructions for implementing the various tagging systems. Contrary to these requirements: leads were found lifted with no tags hung, jumper tags were placed without being authorized; fuses, red tagged as pulled, were found installed; components were yellow and blue tagged simultaneously; expected durations of jumpers were not included on permits; jumpers were removed but the permit and log were not updated; and the main control room set of controlled procedures had an outdated revision of the lifted lead and jumper procedure. During the inspection period the licensee corrected each of the above items except the missing expected durations of jumpers.

The inspector also noted that the jumpers installed per plant staff jumper permit no. 79-05-01 still had startup jumper tags on them, which had been hung in 1978. The system was turned over to the plant staff jurisdiction in October, 1978. The startup jumper tags were promptly cleared.

8. Unresolved Items

Areas for which more information is required to determine acceptability are considered unresolved. Unresolved items are contained in Paragraphs 3, 4 and 7 of this report.

9. Management Meetings

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

The resident inspector also attended the exit interviews for two inspections conducted by region-based inspectors during August.