

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

REGION I

Report No. 50-322/80-08

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 No. 1

Inspection At: Shoreham, New York

Inspection Conducted: May 19-22, 1980

Inspectors: *Lewis Nassau*
C. Narrow, Reactor Inspector

6/12/80
date

Paolino
R. J. Paolino, Reactor Inspector

June 9, 1980
date

G. A. Walton
G. A. Walton, Reactor Inspector

June 9, 1980
date

J. P. Durr
J. P. Durr, Reactor Inspector

6/9/80
date

E. E. Tripp
E. E. Tripp, Chief, Engineering Support
Section No. 1, RC&ES Branch

6/13/80
date

Approved by: *R. W. McGaughy*
R. W. McGaughy, Chief, Projects Section,
RC&ES Branch

6/18/80
date

Inspection Summary: Inspection on May 19-22, 1980 (Report No. 50-322/80-08)

Areas Inspected: Routine, announced inspection by four regional based inspectors and a regional based section chief of work activities and quality verification records of instrument cable and components; and the status of outstanding items. The inspection involved 67 inspector-hours on site.

Results: No items of noncompliance were identified.

DETAILS

I. Persons Contacted

Long Island Lighting Company

R. DiRoche, QA Specialist
*T. F. Gerecke, Engineering QA Manager
J. M. Kelly, Field QA Manager
T. Koch, QA Engineer
J. McCarthy, Assistant Instrument Supervisor
*M. H. Milligan, Project Engineer
*W. J. Museler, Construction Manager (Unico)
E. J. Nicholas, Section Supervisor, Field QA
M. G. Smith, QA Engineer

Stone and Webster Engineering (S&W)

*T. T. Arrington, Superintendent Field QC
*R. W. Condike, QA Engineer
*J. Hassett, Senior QC Inspector
J. A. Smith, Construction Manager
R. Perra, Chief Inspection Supervisor, FQL
W. C. Taylor, Assistant Superintendent, FQC

Courter & Company

W. Bell, Training Coordinator, SQA
J. Makris, Administration Supervisor

*Denotes persons in attendance at the exit interview.

The inspector also interviewed other licensee and contractor personnel during the inspection.

2. Plant Tour

The inspector observed work activities in progress, completed work and construction status in several areas. Work items were examined for obvious defects and for noncompliance with regulatory requirements and licensee commitments. Specific activities and completed work observed by the inspector included installation of pipe supports, cable terminations, general housekeeping, rework of the transfer canal plugs and condition of the control rod drive control mechanisms.

No items of noncompliance were identified.

3. Qualifications of QC Personnel

The inspector reviewed personnel files of a random selection (approximately 20%) of S&W FQC and Courter SQA personnel. The records were examined to determine whether the education, experience and qualifications of QC personnel were adequate for their assigned duties and conformed to the requirements of ANSI N45.2.6. The inspector also examined eye examination records and certificates of qualification to determine whether they were complete, current and acceptable for the person's assigned duties.

The inspector noted that two of the courter SQA inspectors had been certified as Level II QC inspectors. Their records did not show any experience as QC inspectors although they had been qualified for and had previously worked as NDE inspectors. The inspector discussed the work assignments and prior experience of these men with Courter SQA supervisory personnel and was informed that their prior experience did include QC inspection. Their assignments since having been qualified a Level II inspectors, in November 1979, had been primarily on "line walk" inspection of piping. This item is unresolved pending review by an NRC inspector of additional information to be obtained concerning the men's previous experience as well as a similar review of the personnel records of the other QC inspectors. (50-322/80-08-01)

4. Welding Quality Trends

The inspector discussed welding quality trends with representatives of the licensee and examined the results of the licensee's analyses of these trends. The number of noncompliance identified increased during 1978. This appears to be a normal occurrence since there was a similar increase in the number of welders during 1978. The number of noncompliances decreased sharply during 1979, while the number of welders leveled off and then decreased slightly indicating a probable learning curve effect.

The inspector had no further questions concerning this matter.

5. Instrument Components/Systems - Work Observations

The inspector examined work performance, partially completed work and completed work pertaining to safety-related instruments to determine whether the requirements of applicable specifications, work procedures drawings and instructions have been met in areas relating to material requirements, identification, installation, personnel qualification and testing.

- a. For this determination the inspector examined the following items associated with the suppression pool level, pressure and temperature instrument installation.

-- Pressure Transmitter Nos. 1Z93*PT-003A, 1Z93*PT-003B, 1Z93*PT-004A and 1Z93*PT-004B

- Level Transmitter No 1Z93*LT-001B
- Temperature Element Nos. 1Z93*TE-111X, and 1Z93 TE-112W
- Material Specification SH1-406
- Installation Specification for Instruments (SH1-343) and Electrical (SH1-159)
- Line Nos. 1Z93½K1001-ICN9-2, 1Z93½K1004-ICN9-2, 1Z93½K1007-ICN9-2
- Reference drawing Nos. FK-1F, FM-25D, FK-1C, FV-7A and FK-1A, 1B, 4C, 4D
- Engineering Design Change Request Nos. F-13110, F-13784 and P-3416
- Weld Specification No. 081-AA
- Purchase Order Nos. 310073, 310869 and 310890
- Quality Assurance Directives Nos. QAD-9.31, QAD-9.32
- Quality Assurance Procedure Nos. QAP-10.5, Revision 1 and QAP-8.3, Revision 1
- Socket Weld Instrument Fittings per 11600.02-7.83-2A
- Instrument Valves per 11600.02-7.83-4A
- Flex Metal Hose Assembly per drawing 76229 revision C

No items of noncompliances were identified.

6. Instrument Components/Systems - Quality Record Review

The inspector reviewed pertinent work and quality records for selected instrument components of the suppression pool level, pressure and temperature instrument installation to determine whether records met established procedures and whether the records reflect work accomplishments consistent with NRC requirements and licensee commitments noted in SAR chapter Nos. 1, 3, 6, 7, 8 and 17 (including pertinent codes and standards referenced therein) for the following areas: receipt inspection, materials certification, nonconformances, installation and testing.

Documents examined for this determination include:

- Material receiving Report Nos. MRR-79-07642, MRR-78-10962 and MRR-79-08598

- Material Certifications
- Welder qualification records for the following welders identified by code: LE, ABN, AAN and PS
- Purchase Order Nos. 310870 and 310869
- Quality Control Instruction No. FSI-F9.1-07B
- Weld Material Requisition and Control Form Nos. 16985, 16886, 16922, 16923 and 16924
- Field Weld sheets for 1Z93* $\frac{1}{2}$ K1001, $\frac{1}{2}$ K1004, $\frac{1}{2}$ K1007

The inspector determined that the above documents were legible, complete and readily retrievable.

No items of noncompliance were identified.

7. Instrument Cables/Terminations - Quality Record Review

The inspector reviewed pertinent work and quality records for safety related cables associated with the suppression pool instrumentation noted above to determine whether records meet established procedures and accomplishments consistent with NRC requirements and licensee commitments noted in chapters 1, 3, 6, 7, 8 and 17 (including codes and standards referenced therein) for the following areas: size, type, terminations, routing, bend radius, pull tension, inspections, nonconformances, legibility and retrievability of records.

For this determination the inspector examined the following:

- Cable pull tickets for cable nos. 1Z93BBX030, 1Z93BBX031, 1Z93BBX032, 1Z93CSX006 and 1Z93C5X005
- Megger and continuity test records for cables noted above
- Quality Control Inspection Reports for the above listed cable numbers. The reports provide inspection verification of routing, separation, cleanliness, support, wire size, lug size/type, bend radius, termination and tool identification
- Engineer Design Change Requests Nos. F-12987 and F-27144

The records appeared complete and current, were legible and easily retrievable.

No items of noncompliance were identified.

8. Review of Nonroutine Events Reported by the Licensee

In accordance with 10 CFR 50.55(e), on December 11, 1978 the licensee submitted a report of a deficiency in welding of Schedule 160 small bore socket weld fittings. The fillet welds joining the fittings to the pipe did not meet the requirements of ASME III for fillet leg length.

The inspector reviewed the licensee's dispositions of this deficiency. The corrective action included a 100 percent reinspection, repair where required, liquid penetrant and visual examination of the repair. The inspector reviewed nonconformance reports 371, A, B, C, D, and E for systems B21, E11, E41, E51 and E21.

The systems required several repairs, for example, system B21 contained a total of 84 sch. 160 socket/fillet welds and 27 required repair.

The licensee has performed all required inspections and repairs, where required.

This item remains unresolved pending the inspectors review of the licensee's corrective actions taken to prevent recurrence of such deficiencies.

9. Review of Deficiencies Reported by Vendors

By letter dated September 20, 1979 Transamerica DeLaval had reported a deficiency which could potentially have caused failure of the drive shaft for the engine driven jacket water pump of the standby diesel generator.

The inspector examined Returned Material Report RMR 79-1063 showing that the three pumps had been sent back to the vendor for rework; and N&D Report No. 2766 showing that the pumps had been returned to the site after repair but without evidence of PQC inspections. The N&D Report was closed out by the Equipment Specialist, Project Engineer and QA on the bases of documentation furnished by the vendor.

The inspector had no further questions concerning this item.

10. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (78-02-01): Failure to control weld materials in accordance with procedures. The licensee's corrective actions were reviewed during inspections 78-06 and 78-12. This item was closed during the latter inspection based on the licensee's actions and observations of conditions on site. This item was reopened during inspection 79-06 due to observation of loose weld rod by the inspector during a "line walk" inspection. Inadequate control of weld rod was again observed by the inspector during Inspection 79-07. At that time the licensee instituted more stringent controls of weld materials including a requirement that all used and unused materials

be returned to the weld rod issue station and noted on the requisition slip. Discrepancies between the amounts issued and returned if repeated were subject to withdrawal of the welders qualification.

Since May, 1979 when the new controls had been instituted, the inspector had checked for loose or uncontrolled weld rod when performing plant tours during inspections. No loose weld rod had been identified during those inspections.

The inspector discussed the program for control of weld materials with the licensees representatives and reviewed Unico and Field QC memoranda and IOC's establishing the program and instructing Field QC to perform surveillance inspections for loose weld rod, including daily inspections of Category I areas. The inspector also reviewed QC inspectors' reports and DCO's for the past three months to ascertain the effectiveness of the program. The inspector noted that inspections occasionally identified some loose weld rod but that overall the program was effective and that one welder had been disciplined (loss of qualifications) in June, 1979 for a discrepancy between number of weld rod issued and returned.

The inspector had no further questions concerning this item.

(Closed) Unresolved Item (78-09-01): Calibration hole size larger in diameter than permitted by ASME Section III. The inspector reviewed preservice inspection procedure No. 80 A 475. The licensee's inspection contractor has revised the procedure to stipulate the correct hole size, i.e., a 1/8 inch side drilled hole. The original procedure required a 3/16 inch side drilled hole. In addition to the procedure change the licensee has generated drawing 80C0413 which reflects the proper hole size.

The inspector had no further question regarding this matter.

(Closed) Noncompliance (78-16-01): Nonconformance of Reactor Building Crane Welding to specifications. Partially completed corrective actions had been reviewed during inspection 79-02. The inspector examined the following documents:

- . N&D Report No. 1925 which provided the disposition and method of repair or rework of nonconforming load bearing welds. The disposition had been approved by Engineering and QA; and weld repair was complete.
- . The vendor's (Whiting corporation) weld evaluation report and letter dated November 21, 1979 which identified the type and amount of rework to be performed and recommended that a Whiting representative be present during the rework

- . QC Inspection Reports dated May 1 and 5, 1980 for final inspection of the weld rework
- . MT Inspection Report for inspection of grinding to remove crack prior to weld repair - Whiting Drawing No. U-75447-4

The inspector also observed the conditions of a random sample of repaired welds.

The inspector had no further questions concerning this item.

(Closed) Unresolved Item (78-17-01): The preservice inspection program is being conducted to satisfy the requirements of 10 CFR 50.55a(g) and the 1971 Edition of the ASME B&PV Code, Section XI including the Summer 1972 Addenda. A previous inspection had disclosed unresolved items regarding this program. The inspector reviewed the licensee's action on these items:

- . Table A-1, Appendix A, Category A, omitted the requirement for examination of any repairs to base material in the core belt region. The licensee's inspection contractor has revised the program plan 80A0482 Revision 2 to include a requirement to examine all repairs in the core belt region which exceed 10 percent in depth.
- . Table A-1, Appendix A, Category E-1 must be revised to include volumetric examinations of the control rod housing pressure boundary welds.

The licensee's inspection contractor revised the program to include the fabrication inspection records as part of the preservice examinations.

- . Appendix E, Figure 13-1 must be revised to include a hydro-visual examination of the control rod drive partial penetration welds.

The licensee's inspection contractor has revised the program plan 80A0482 Revision 2 to include a visual examination during the system hydrostatic test.

- . Appendix E, Figure 05-01 must be revised to reflect actual weld location and identification. For example, weld 31-NS005-BW38 shown on the schematic does not exist on the Loop A line. Also, during the preservice examinations, the licensee discovered an additional weld between welds B31-NS005-BW02 and RS-1-A2-B which appears to be a shop weld. This weld was not shown on Figure 05-01.

The licensee's inspection contractor has revised the isometric drawings to reflect the actual as-built condition. In addition, before the preservice examinations are performed a line walk-down is performed to identify any discrepancies in the isometric drawings.

The inspection contractor also receives the fabrication drawings which reflects field changes for addition into the preservice program.

The inspector has no further questions regarding the above four items and this matter is considered to be resolved.

(Closed) Unresolved Item (78-17-02): Potential interference of name plate with complete inservice inspection of weld. The licensee has taken corrective action regarding this item by removing the nameplate from the vicinity of the weld.

In addition the licensee's inspection contractor performed an examination to determine if any interferences occur which might prevent full preservice examinations.

The inspector had no further questions concerning this matter.

(Open) Unresolved Item (79-07-04): Examination of RPV feedwater nozzle. The inspector obtained additional information regarding indications detected in the nozzle/pipe weld of RPV nozzle N4B (azimuth 135°).

A surface examination was performed by the inspection contractor to prepare the subject welds for preservice examinations. This examination revealed a rejectable indication on the outside surface identified as porosity. To further investigate the quality of the weld, an informational ultrasonic examination was performed by the inspection contractor on all feedwater nozzle to pipe welds. These examinations revealed numerous indications in the weld which require further evaluation. The data report of February 29, 1980 from Nuclear Energy Services, Inc. disclosed the following:

- . Nozzle weld N-4A revealed five recordable indications, one is considered to be inside geometry, and the remainder are identified as slag indications.
- . Nozzle weld N-4B revealed eight indications which exceed the 50 percent recording level, one is considered to be inside geometry. Six indications are identified as slag and another indication received from the inside surface could not be identified and warrants further investigation.
- . Nozzle weld N-4C revealed an inside signal presumed to be a gauge mark which must be verified by a visual examination of the inside surface.
- . Nozzle weld N-4D revealed two indications, one is considered to be inside geometry. The second indication is similar to the indication in N4B in that the signal appears to be a possible fusion defect.

The porosity defects on the outside surface were removed by grinding, reinspection and visual examination. It has been determined by the licensee that this area is now acceptable to ASME Section III. It remains an open item by the licensee until it is determined whether the depression will interfere with the preservice examination.

The indications detected by ultrasonic will be reinspected and reevaluated for acceptance after the ASME B&PV code calibration block is fabricated. This item continues unresolved pending the licensee's reinspection and disposition and further review by the NRC of the disposition.

11. General

Prior to this inspection the inspector attended a meeting of the Case Load Assessment Team (CLAT) with the licensee for review of the licensee's revised schedule. The licensee's tentative schedule anticipated fuel loading in June-September 1982. After considering the material presented by the licensee, CLAT stated that in their opinion September, 1982 would be a more realistic fuel load date. The present schedule includes Mark II modifications and known changes resulting from studies of the TMI accident.

12. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, or items of noncompliance. An unresolved item identified during the inspection is discussed in Paragraph 3.

13. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on May 22, 1980. In addition, H. B. Kister, Chief, Reactor Projects Section #4 and the NRC Resident Inspector, Mr. J. C. Higgins attended the meeting. The inspector summarized the scope and finding of the inspection.