

May 14, 1984

Docket No. 50-382

Louisiana Power and Light Company
ATTN: Mr. R. S. Leddick
Senior Vice President
Nuclear Operations
142 Delaronde Street
New Orleans, LA 70174

Dear Mr. Leddick:

SUBJECT: Construction Appraisal Team Inspection 50-382/84-07

This refers to the Construction Appraisal Team (CAT) inspection conducted by the Office of Inspection and Enforcement (IE) on February 13-25 and March 12-23, 1984, at the Waterford Steam Electric Station, Unit No. 3 at Taft, Louisiana. The Construction Appraisal Team was composed of members of IE, NRC Region IV, and a number of consultants. The inspection covered construction activities authorized by NRC Construction Permit CPPR-103.

This inspection is the sixth of a series of construction appraisal inspections being planned by the Office of Inspection and Enforcement. The results of these inspections are being used to evaluate implementation of the management control of construction activities and the quality of construction at nuclear plants.

The enclosed report identifies the areas examined during the inspection. Within the areas, the effort consisted primarily of detailed inspection of selected hardware subsequent to Quality Control inspections, a review of selected portions of your Quality Assurance Program, examination of procedures and records, observation of work activities, and interviews with management and other personnel.

Appendix A to this letter is an Executive Summary of the results of this inspection and of conclusions reached by this office. An area of considerable concern to the CAT inspectors is your apparent failure to take proper corrective action subsequent to the identification of problem areas by Region IV. Problems had been identified by regional inspectors involving heating, ventilating, and air conditioning (HVAC) and electrical raceway seismic supports; American Bridge structural steel welding; as-built verification of piping supports and restraints; maintenance of equipment transferred to operations; and pipe to structure clearances. In each case, Region IV was notified that proper and preventive action had been implemented; however, the CAT inspectors identified recurring deficiencies in these five areas. In addition, the NRC Construction Appraisal Team inspection identified a number of deficiencies in electrical raceway and conduit installations that do not conform to the FSAR commitments for separation of Class 1E equipment and circuits.

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May 14, 1984

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The above problems notwithstanding, the major portion of completed safety system hardware examined by the NRC CAT was found to be in accordance with requirements. For example, over 4200 ASME weld radiographs were examined and only one was rejected by the NRC CAT; 84 cable end terminations representing over 500 conductors were examined and only three were found not to meet requirements; approximately 1000 feet of Class 2 and 3 piping and 24 pieces of mechanical equipment were inspected with only four hardware related problems found; and the concrete construction reviewed was acceptable except for three records related problems.

Appendix B to this letter contains a list of potential enforcement actions based on the NRC CAT inspection observations. These are being reviewed by the Office of Inspection and Enforcement and the NRC Region IV Office for appropriate actions.

The areas reviewed by the NRC CAT inspection as part of their routine effort included some areas in which allegations have been made. A special task force review of allegations involving the Waterford Unit No. 3 is continuing. As a result of different sample sizes and different methodology used by these groups, it is probable that there will be differences in conclusions reached in some specific areas. These differences will be resolved by the appropriate NRC staff during the continuing licensing process.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosures will be placed in the NRC Public Document Room unless you notify this office, by telephone or by other means, within 10 days of the date of this letter and submit written application to withhold information contained herein within 30 days of the date of this letter. Such applications must be consistent with the requirements of 10 CFR 2.790(b)(1).

No reply to this letter is required at this time. You will be required to respond to these findings after a decision is made for appropriate enforcement action.

Should you have any questions concerning this inspection, please contact us or the Region IV Office.

Sincerely,

*Original Signed By
R. C. DeYoung"

Richard C. DeYoung, Director
Office of Inspection and Enforcement

Enclosures:

1. Appendix A - Executive Summary
2. Appendix B - Potential Enforcement Actions
3. Inspection Report 382/84-07

May 14, 1984

Louisiana Power and Light Company - 3 -

cc w/enclosures:
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APPENDIX A

EXECUTIVE SUMMARY

An announced Construction Appraisal Team (CAT) inspection was performed at the Waterford Steam Electric Station Unit No. 3 site during the period February 13-24, 1984 and March 12-23, 1984.

OVERALL CONCLUSIONS

Hardware and documentation for piping, concrete, instrumentation, structural steel, welding and nondestructive examination, mechanical equipment, and heating, ventilation and air conditioning (HVAC) ducting were generally found to be in accordance with requirements and commitments. The Team notes however, that this final acceptability was achieved only after repeated applicant reinspection programs and engineering reviews. The applicant has had difficulties in implementing an effective in-process quality assurance program and the NRC CAT considers this as the underlying cause for the deficiencies found during this inspection. This includes the inability of the applicant and his contractors to convince personnel at all levels in the organization to perform their respective tasks correctly the first time.

The various deficiencies identified by the Construction Appraisal Team indicate several Louisiana Power and Light Company (LP&L) program weaknesses. The identified program weaknesses are as follows:

1. Inadequate or ineffective corrective actions to problems identified by NRC Region IV and by on-site QA organizations. This was demonstrated by LP&L's failure to carry out their commitments to correct violations involving additional loads on electrical and HVAC seismic supports, pipe to structure clearance problems, inconsistent performance of megger tests of electrical equipment, and structural steel welding. Also, repeated attempts to verify the conformance of pipe supports/restraints to design documents or as-built drawings have not been completely successful.
2. The QC inspection program was not effective in identifying electrical raceway separation violations regarding Class 1E equipment and circuits.

Although the individual deficiencies identified in this report are resolvable from a technical standpoint, the program weakness that they reflect requires LP&L management attention to assure that they do not adversely affect future site activities.

AREAS INSPECTED AND RESULTS

Electrical and Instrumentation Construction

Electrical and instrumentation construction activities were found to be generally acceptable. However, significant construction deficiencies were identified in raceway separation and seismic supports.

Many raceway installations did not conform to FSAR commitments for independence of Class 1E equipment and circuits. Deficiencies identified by the NRC CAT indicate that the applicant's program of Quality Control inspection of construction activities was not effective in identifying raceway separation deficiencies.

A significant number of raceway seismic supports examined by the NRC CAT exhibited loads not shown on applicable design documents. Of greatest concern was the high percentage of supports containing loads in excess of the allowable load previously approved by the responsible design organization. Although previously identified, the continued violation of procedural requirements illustrates that the applicant has not adequately implemented corrective action activities in this area.

Mechanical Construction

HVAC ducting and seismic restraints, piping runs, and mechanical equipment were generally found to be constructed in accordance with design requirements. However, as-built drawings for HVAC restraints did not in some cases accurately reflect field conditions.

Although no extensive structural integrity problems were identified, some QC accepted pipe supports/restraints were not installed in accordance with red-lined drawings or design requirements. Support/restraint documentation packages examined also contained minor discrepancies.

LP&L has not met commitments to the NRC with regard to the identification and preapproval of potential piping to structure clearance problems and the identification and evaluation of additional loads on HVAC seismic restraints.

A number of other deficiencies were identified by the NRC CAT inspectors. These include inaccuracies in stress isometrics, not incorporating minor changes on stress isometrics, the operational failure of HVAC fire dampers, and inaccuracies in discrepancy resolutions for pressure test records.

Discrepancies noted in documentation packages for pneumatic/hydrostatic tests and mechanical equipment installations indicated failures to follow procedures, and inadequate corrective action with regard to incorrect test pressures, hold points and improper signoffs and dates.

Welding and Nondestructive Examination

Welding and nondestructive examination activities were generally found to be conducted in accordance with applicable codes and specifications. However, a number of examples were identified where completed structural welds did not meet the acceptance criteria specified by the Architect-Engineer. The applicant has performed an engineering evaluation concerning this problem and concluded that the welds are acceptable as is and adequate for the intended application. Relevant to ASME Code welding, the internal surfaces of one weld on the main steam containment penetration were found to be unsuitable for proper interpretation under the required radiographic examination.

Civil and Structural Construction

The sample of records reviewed for concrete materials certification and testing were found to be in accordance with the specifications and applicable requirements. Review of concrete construction showed general conformance to requirements except in three cases: missing in-process test records; in-process test results exceeding the specification requirements and not identified as nonconforming conditions; and no record for the last day of curing one concrete placement that required two extra curing days.

Cadwelding records generally conformed to requirements except for several instances of improper testing frequencies and one case of improper cadwelder requalification.

Clam shell filter blanket placement records and soils backfill records reviewed met requirements except in two areas: material acceptance tests not performed until after the backfill was in place and compacted; and no evidence that higher than specification moisture contents were acceptable to Ebasco engineering.

Structural steel installation and bolting showed conformance to design drawings, specifications, and regulatory requirements.

Review of masonry wall design and construction indicated that inspections were not performed commensurate with the assumptions used in the design analysis. One masonry wall was identified by the NRC CAT which did not match design details specified on the drawing. Masonry wall design and construction requirements are being further reviewed by the NRC.

Material Traceability

The project traceability program was found to be acceptable, except for the area of safety-related fasteners. Traceability deficiencies were noted for such fastener items as anchor bolts; equipment mounting bolts/studs, nuts and washers; and flange joint studs and nuts. No significant deficiencies were found in other areas examined.

Design Change Control

The NRC CAT reviewed the overall design control process to augment their more detailed inspection of the individual construction disciplines. The design change activity was generally found to be in conformance with applicable requirements; however, a number of examples were identified which indicate that design change documents may not identify all documents affected by a design change. Since isometric drawings are used to inspect completed work and facilitate system walkdowns, the lack of procedural requirements and the failure to include isometric drawings on the list of affected documents is a problem related to the design control process. In addition, the NRC CAT inspectors found instances where engineering dispositions on contractor requests for information resulted in the approval of design changes without an approved design change document.

The inspection also revealed several instances where engineering design disciplines on site did not use the latest drawing and associated design changes for engineering and construction activities. Applicable design change documents are not being consistently posted on controlled drawings. The NRC inspectors found deficiencies in the maintenance of the Drawing Close-out Schedule (the engineering document which identifies outstanding design changes on design drawings). It also appears that site Document Control has not been using the Drawing Close-out Schedule to audit its files as required by procedure.

Corrective Action Systems

The NRC CAT review of the applicant's corrective action program revealed several deficiencies, one of which has major significance: The applicant has not initiated adequate and proper corrective action on previously identified violations in five areas. The five areas where this deficiency was found involve undocumented loads on seismic supports, pipe supports/restraints not meeting as-built requirements, electrical maintenance procedures for motors not being properly performed, deficient shop welds on American Bridge structures, and problems with pipe to structure clearances.

Three other deficiencies of lesser significance were found. Some reported deficient conditions are apparently not being upgraded to nonconformance reports (NCRs) and thus, are not being analyzed for repetitiveness. The applicant's quality assurance program allowed some requirements (issuance of hold tags and taking action to preclude repetition) to be removed from quality procedures. And thirdly, some required information on nonconformance reports was being omitted.

APPENDIX B

POTENTIAL ENFORCEMENT ACTIONS

As a result of the NRC CAT inspection of February 13-24, and March 12-23, 1984, the following items have been referred to NRC Region IV as Potential Enforcement Actions (section references are to the detailed portion of the inspection report):

1. Contrary to 10 CFR 50, Appendix B, Criterion III, and LP&L QA Manual Section 3, design control has not been maintained as the applicant has:
 - a. Failed to perform the required review of significant design changes to safety-related structures. This is reflected in the high percentage of seismic supports examined which exhibit added loads not shown on original design documents or current as-built documents (Sections II.B.1 and III.B.3).
 - b. Failed to review design changes in a manner commensurate with the original design review. It was found that the engineering dispositions of four contractor information requests approved a change to the plant design without an approved design change document (Section VII.B.3).
2. Contrary to 10 CFR 50, Appendix B, Criteria V and X, and LP&L QA Manual Sections 5 and 10, the applicant has failed to perform activities as prescribed by documented instructions in the following areas:
 - a. Some pipe supports/restraints have not been constructed in accordance with or properly inspected to design documents (Section III.B.2).
 - b. The performed welding inspections for structural welds were found to be deficient with respect to the acceptance criteria specified by the Architect-Engineer (Section IV.B.1).
 - c. One weld on the main steam containment penetration was found to have an internal surface condition which was judged to be unsuitable for the proper interpretation of the required radiographic examination (Section IV.B.11).
3. Contrary to 10 CFR 50, Appendix B, Criterion VI, and LP&L QA Manual Section 6, the applicant has failed to effectively perform the following document and design control activities:
 - a. Design changes were not being incorporated into all affected design documents. It was found that three design change documents did not identify all of the documents affected by the respective changes (Section VII.B.2).
 - b. Design changes were not being incorporated into a construction specification. It was found that a large number of design changes were posted against specification MC-1 without revisions to the specification being performed (Section VII.B.2).

- c. Design changes on design drawings and an installation specification were not being identified at the location of work activity. It was found that DCNs and FCRs were not being posted against drawings used by Ebasco design disciplines. In addition, it was found that Document Control was not auditing its files against Ebasco's Drawing Close-out Schedule (Section VII.B.1).
 - d. Changes to a construction installation specification were reviewed and approved by an organization different than the organization that performed the original review and approval. It was found that FCRs affecting specification MC-1 were reviewed and approved by engineering rather than the construction organization that originally reviewed and approved it (Section VII.B.2).
4. Contrary to 10 CFR 50, Appendix B, Criterion VIII, and LP&L QA Manual Section 8, the material traceability and control of some fasteners have not been adequate to assure the use of correct parts or material (Section VI.B.1).
5. Contrary to 10 CFR 50, Appendix B, Criterion X, and LP&L QA Manual Section 10, the applicant has not properly executed an inspection program in the following areas:
- a. The inspection of Class 1E raceway installations relative to the requirements for physical separation, had not been accomplished in accordance with the criteria established in the inspection documents (Section IV.B.1).
 - b. The construction inspection of some masonry walls was not commensurate with the assumptions used in the design analysis (Section V.B.6.).
 - c. As-built drawings for HVAC seismic restraints do not accurately reflect the actual installation (Section III.B.3).
6. Contrary to 10 CFR 50, Appendix B, Criterion XVI, and LP&L QA Manual Section 16, the applicant has failed to effectively perform the following corrective action activities:
- a. Adequate corrective action has not been taken for Region IV identified discrepancies regarding the identification and evaluation of potential pipe to structure clearance problems, additional loads placed on HVAC and electric cable tray seismic supports, the conduct of electrical maintenance, and deficient shopwelds in American Bridge structures (Section VIII.B.4) .
 - b. Some nonconforming conditions are not being properly documented and evaluated through the Corrective Action Program (Section VIII.B.2).
7. Contrary to 10 CFR 50, Appendix B, Criterion XVII, and LP&L QA Manual Section 17, some inspection and test records were found to be deficient as a portion of the concrete in-process test records for two of the concrete placements sampled were missing (Section V.B.1).