

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

REGION IV

Report No. 50-382/80-07

Docket No. 50-382

Category A2

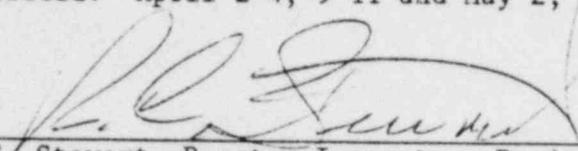
Licensee: Louisiana Power and Light Company  
142 Delaronde Street  
New Orleans, Louisiana 70174

Facility Name: Waterford Steam Electric Station, Unit No. 3

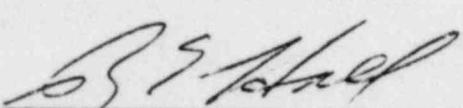
Investigation at: Waterford Site, Taft, Louisiana

Investigation conducted: April 2-4, 9-11 and May 2, 1980

Inspectors:

  
R. C. Stewart, Reactor Inspector, Projects Section

5/28/80  
Date

  
D. P. Tomlinson, Reactor Inspector, Engineering Support Section

5/28/80  
Date

Approved:

  
W. A. Crossman, Chief, Projects Section

5/28/80  
Date

  
R. E. Hall, Chief, Engineering Support Section

5/28/80  
Date

Investigation Summary:

Investigation on April 2-4, 9-11 and May 2, 1980 (Report No. 50-382/80-07)

Area Investigated: Special investigation of an allegation addressed in a telephone call to the NRC concerning improprieties in the welding and inspection of piping restraints manufactured by Industrial Engineering Works (IEW). The investigation involved sixty-seven inspector-hours by two NRC inspectors.

Results: The allegation was substantiated. One item of noncompliance was identified (infraction - failure to verify conformance with documented drawings - paragraph 2).

## INTRODUCTION

Waterford Steam Electric Station, Unit No. 3 (Waterford, Unit No. 3) is under construction in St. Charles Parish, Louisiana, near the town of Taft, Louisiana. Louisiana Power and Light Company is the Construction Permit holder with Ebasco, Inc., serving as both the Architect/Engineer and the Construction Manager.

## REASON FOR INVESTIGATION

The Director, Division of Reactor Construction Inspection, IE Headquarters (HQ), received a telephone call from a New Orleans, Louisiana, newspaper reporter on March 21, 1980, informing the Director of information he had received of improper QC welding inspection activities on pipe restraints alleged to have occurred at the Waterford 3 facility. The reporter provided the identity and phone number of the alleged for subsequent follow up.

## SUMMARY OF FACTS

On April 2, 1980, two IE inspectors met with the alleged to obtain specific details of the allegation in order to assess the validity and impact on safety-related components and systems. The alleged, a Level II, Ultrasonic Testing Technician, is a former employee of an independent testing company which was contracted by Industrial Engineering Works (IEW) of New Jersey to perform on site Ultrasonic Testing (UT) of IEW supplied welded structural steel supports. The supports were previously fabricated by IEW at their fabrication facilities. The UT examination was required in conjunction with a licensee reported Construction Deficiency Report (CDR) dated January 2, 1980.

As indicated in the CDR, UT examination was required on certain full penetration welds on the Reactor Coolant Pump Supports, Reactor Coolant System Pipe Stops, Pipe Whip Restraints, Pressurizer Support, Safety Injection Tank Supports and other steel structures inside containment.

The alleged indicated that, although he had no problems or allegations with regard to the UT procedures and implementation, his specific allegation was concerned with his observation of weld surface defects noted during his activities in performing the UT examination. The alleged stated that he observed visible non-fusion, weld undercut, porosity, weld overlap, and areas where welds were incomplete. He further stated that he had pointed out the specific defects to the IEW representative, but apparently nothing was ever done about them. The alleged stated that he felt the welds would not pass welding code requirements; however, he was not familiar with what the requirements were or the American Welding Society Code. The alleged identified the pipe supports in the area of the reactor vessel piping as the supports in question.

## CONCLUSIONS

Based on the weld surface defects observed on the eight "D" stops for the reactor coolant cold-leg supports, the allegation was substantiated.

## DETAILS

### 1. Persons Contacted

#### Principal Licensee Employees

- \*L. Bass, Project QA Engineer
- \*F. Drummond, Project Manager
- \*B. Toups, QA Technician

#### Ebasco, Inc. Employees

- J. Crnich, Site Manager
- L. Stinson, Site QA Manager
- D. Miller, Welding Engineer
- R. Zaist, Area Superintendent
- R. Beindorff, Area P&S Engineer

#### Others

- T. Mawhinney, Vice President, Industrial Engineering Works (IEW)

\*Denotes those attending the exit interview.

### 2. Investigative Details

The allegation and resultant investigative findings are stated below:

#### Allegation:

Various piping supports and stops manufactured by IEW were not produced in accordance with approved drawings and visual weld acceptance standards.

#### Investigation Findings

Eight "D" stops for the cold-leg supports of the reactor coolant piping were identified by Louisiana Power and Light (LP&L) QA and the IE inspector and were visually examined by them. The eight stops were painted with one coat of primer at the time of the first examination but sufficient weld surface anomalies and blueprint discrepancies could be noted to warrant further inspection. Before this was accomplished, a final-coat painting operation was performed masking all but the most severe of the weld irregularities and a true determination of the weld condition could not be made. LP&L, through Ebasco, arranged to have the paint coating removed from one of the "D" stops by sandblasting and more thorough visual and ultrasonic inspections were made. Several representatives from LP&L, Ebasco and Peabody Testing were present at this time along with the IEW Vice-President.

Weld conditions mentioned in the allegation included: visible non-fusion, undercut, porosity, weld overlap, incomplete welds and areas where welds

were omitted. All of these were visible to varying degrees on piece 1-D1A-B11-E6-W1-2, as shown on Ebasco Drawing 1654-9555, Rev. 1, and IEW Drawing 2662Q-114, Rev. 2. Lack of fusion and/or incomplete welding was most noticeable at the juncture of pieces "PP" and "PM." These are welds originally designated as full penetration welds but produced as partial penetration welds and previously reported to the NRC under the provisions of 10 CFR 50.55(e) on January 2, 1980. The drawings, in circulation at the time, neither reflected this change nor the true as-built configuration of the parts. Each of the eight assemblies contains four of these partial penetration welds. Each of the thirty-two welds inspected has an area of non-fusion or incomplete weld at each end. Utilizing a feeler gauge and a small wire, the IE inspector was able to probe as far as 3/8 of an inch into areas originally designed as full penetration welds.

During this visual inspection, it was noted on three of the assemblies that piece "PM" was welded 90° out of position as indicated on the assembly drawing. LP&L later requested ultrasonic inspection of several welds and this examination revealed a three inch long crescent-shaped area of lamination in the four inch thick piece "PM" of assembly 1-D1A-B11-E6-W1-2.

Subsequent analysis of the assemblies by Ebasco and LP&L, along with minor metal removal, have resulted in the parts being returned to IEW for repair or replacement. This metal removal was accomplished by grinding-out the area of non-fusion to determine the actual depth and area. While a wire probe indicated 1/4 of an inch depth, the non-fusion was continuing at a grind-depth of 3/8 of an inch. At 3/8 of an inch, grinding was stopped and the decision made to return all eight assemblies to IEW.

This allegation was substantiated.

10 CFR 50, Appendix B, Criterion X states in part that, "A program for inspection of activities affecting quality shall be . . . executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures and drawings for accomplishing the activity." Criterion VII requires control over purchased materials to include objective evidence of quality furnished by the contractor, inspection at the material source, and examination of materials upon delivery.

Contrary to the above, the eight "D" stops were accepted by IEW and by the on-site receiving inspection in a discrepant condition indicating that the program required by Appendix B was not effective.

This is an item of noncompliance.

### 3. Exit Interview

The IE inspectors met with licensee representatives (denoted in paragraph 1) in regard to the investigation on April 11 and May 2, 1980, and summarized the purpose and findings of the investigation.