LOUISIANA POWER AND LIGHT COMPANY
WATERFORD SES UNIT NO 3

INTERIM REPORT OF
SIGNIFICANT DEFICIENCY NO. 15

PROCEDURAL AND PERFORMANCE DEFICIENCIES IN ULTRASONIC TESTING OF STRUCTURAL WELDS PERFORMED BY INDUSTRIAL ENGINEERING WORKS

Reviewed By _____
J Padalino - Project Engineer

Reviewed By _____
J Hart - Project Licensing Engineer

Reviewed By _____
E Kowalski - Asst. Chief Civil Engineer

Reviewed By _____
R Hymes - Project QA Engineer

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INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e). It describes procedural and performance deficiencies in ultrasonic testing of structural welds by Industrial Engineering Works (IEW) for Louisiana Power & Light Company's Waterford Steam Electric Station Unit No. 3. This problem was identified on November 26, 1979.

DESCRIPTION

The extent of the deficiency is as follows: All required UT examination performed on NY POs 403573, 403593, 403611 have either Performance Deficiency I-1 or Performance Deficiency I-2 (see below). In addition, particular examination may have Procedure Deficiencies II-1 or II-2 (see below).

I Performance Deficiencies

1. Insufficient Coverage (one side only)
   -Requirement ASME V reference by ASME III, NF-5000.
   -(affects POs 403573 and 403611)

2. a) Insufficient examination sensitivity
   b) Equipment not meeting performance requirements
   c) Incorrect range-and location-calibration
   - Requirement AWS D1.1
   - (affects only PO 403593)

II Procedural Deficiencies

1. Incorrect Procedure requirements in shop drawings
   -(affects POs 403573 and 403611)

2. Incorrect requirements for detecting and evaluating fusion line indications
   -(affects POs 403593 and 403611)

SAFETY IMPLICATION

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Ultrasonic Testing is required on certain full penetration welds to ensure the welds meet the quality standards of ASME Section III Subsection NF or AWS D1.1 as appropriate. IEW's UT procedures do not fully meet the examination requirements of the above codes. The welds in question are on Reactor Coolant Pump supports, Reactor Coolant system pipe stops, pipe whip restraints, Pressurizer support, Safety Injection Tank supports and some other steel structures inside containment. If corrective action is not taken defects in the weld on these safety-related structures could exist that would have been detected by proper implementation of code UT techniques but not by the techniques actually applied. Such weld defects could under certain conditions lead to higher than allowable stress levels on these structures. If left uncorrected, these defects, if they

exist could result in failure of the weld and consequent failure of the affected safety-related component when subject to the dynamic events postulated as bases for design.

CORRECTIVE ACTION

Steps have been taken by Ebasco Quality Assurance to preclude construction progress from adversely affecting corrective action.

At the same time Ebasco Engineering, in conjunction with Industrial Engineering Works, is studying methods to ensure that affected welds meet design requirements. It is standard industry practice to specify full penetration welds on an entire item or weld when analysis shows it to be required on only part of that item or weld. This approach is taken to promote efficiency in shop operations and to ensure that full penetration welds are located in all required areas. This evaluation effort will therefore include a determination by Ebasco Engineering of those areas where full penetration welds are actually required. Where this is the case appropriate steps will be taken to assure that each weld meets or exceeds the quality standard required by design and engineering considerations.