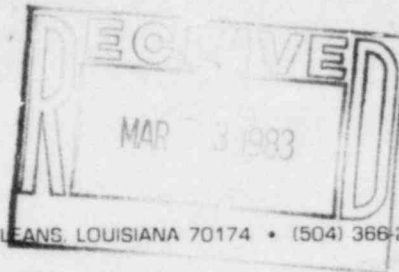




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February 28, 1983

L. V. MAURIN
Vice President Nuclear Operations

W3I83-0066
Q-3-A35.07.48

Mr. John T. Collins, Regional Administrator
Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76012

SUBJECT: Waterford SES Unit No. 3
Docket No. 50-382
Significant Construction Deficiency No. 48 R-1
"Design Application of Break Flanges at Elevated Temperatures"

REFERENCES: LP&L letter W3I82-0122 dated December 17, 1982, L. V. Maurin
to John T. Collins

LP&L letter W3I83-0017 dated January 24, 1983, L. V. Maurin
to John T. Collins

Dear Mr. Collins:

In accordance with the requirements of 10CFR50.55(e), we are hereby providing two copies of the Final Report of Significant Construction Deficiency No. 48 R-1, "Design Application of Break Flanges at Elevated Temperatures".

If you have any questions, please advise.

Very truly yours,

L. V. Maurin

LVM/WAC:keh

cc: 1) Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555
(with 1 copy of report)

3) E. L. Blake

2) Director
Office of Management
Information and Program Control
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555
(with 15 copies of report)

4) W. M. Stevenson

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FINAL REPORT OF
SIGNIFICANT CONSTRUCTION DEFICIENCY NO. 48 R-1
"DESIGN APPLICATION OF BREAK FLANGES AT ELEVATED TEMPERATURES"

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e). It describes a deficiency in the flange material used in the Reactor Coolant, Safety Injection and Chemical and Volume Control Systems. This problem is considered reportable under the requirements of 10CFR50.55(e).

To the best of our knowledge, this problem has not been identified to the NRC pursuant to 10CFR21.

DESCRIPTION

During the installation of break flanges in the field, it was discovered that type 304 stainless steel flanges had been installed in the above mentioned systems, where the maximum operating conditions exceeded the pressure/temperature ratings of the installed flanges. These flanges did not meet the ANSI B 16.5 pressure/temperature ratings as required by the ASME code. Examination of station piping specification and the piping line list indicated that the correct flanges were specified in these documents for large bore piping. The error was introduced in the preparation of large bore isometrics by the piping fabricator. For small bore piping, a material conflict was noted between the design drawings and the piping line list. These documents were utilized by the piping fabricator to develop small bore piping isometrics.

SAFETY IMPLICATIONS

The subject flanges are located in the Reactor Coolant, Safety Injection, and Chemical and Volume Control systems. Failure of these flanges could cause a LOCA, degrade operation, or render a safety system inoperable. Therefore, the deviation could adversely affect the safety of the plant if left uncorrected.

CORRECTIVE ACTION

The following corrective action was taken to correct this deficiency:

- 1) Nonconformance Report (NCR-W3-3302 S/1) was issued to identify, disposition, and track all flanges that were not within allowable design limits.
- 2) The flanges were analyzed by Ebasco's Stress Analysis Group in accordance with the ASME Section III Code paragraphs NB/NC/ND-3658. These paragraphs give a methodology to evaluate a flanged joint, regardless of whether it meets B16.5 rating or not.
- 3) As a result of this analysis, corrective actions were recommended for the flanged joints which did not meet the code requirements. These corrective actions included replacement of 45 flanges with type 316 SS material and replacement of the installed bolts with high strength bolts for an additional 21 flanges.
- 4) As a result of the flange analysis and the corrective actions taken therein, all flanges now meet the requirements of the ASME Section III code.

This Report is submitted as the final report.

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