

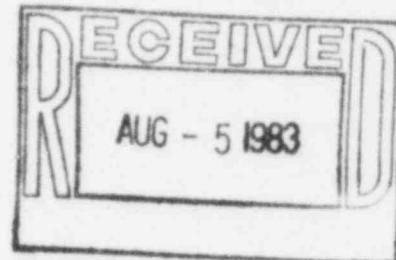
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August 2, 1983

W3183-0260
Q-3-A35.07.74

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. 74
"T-B Undersize Schedule 80 Socket Welds"
Final Report

REFERENCE: LP&L letter W3183-0210 dated June 15, 1983

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. 74, "T-B Undersize Schedule 80 Socket Welds".

If you have any questions, please advise.

Very truly yours,

F. J. Drummond
Project Support Manager - Nuclear

Attachment

FJD/WAC/MAL:keh

cc: 1) Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555 (w/15 copies)

3) Mr. E. L. Blake

2) Director
Office of Management
Information and Program Control
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555 (w/1 copy)

4) Mr. W. M. Stevenson

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FINAL REPORT
OF SIGNIFICANT CONSTRUCTION DEFICIENCY NO. 74
"T&B UNDERSIZE SCHEDULE 80 SOCKET WELDS"

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e). It describes a deficiency that existed in the socket weld size of schedule 80 small bore piping welds in ASME Class 2 and 3 piping systems. The ASME Section III socket weld dimensions were not complied with on all welds. 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 Nuclear Regulatory Commission pursuant to 10CFR21.

DESCRIPTION

The piping contractor, Tompkins-Beckwith, Inc. through issuance of Nonconformance Report W3-5760, identified that socket welds on fittings and on flanges made by T-B on small bore schedule 80 piping did not meet the size requirements of ASME Section III. Undersize welds were identified in various Class 2 and 3 piping systems.

SAFETY IMPLICATIONS

The failure of these welds could have resulted in degradation of safety related systems thereby jeopardizing the safe operation of the plant.

CORRECTIVE ACTION TAKEN

To determine the scope of the reinspection, a comprehensive review of piping stress analysis was conducted by Ebasco to identify critical welds in class 2 and class 3 piping systems. These critical welds were reinspected by T-B and any socket welds not meeting the ASME Section III code requirements were reworked.

Engineering determined that other undersized socket welds which were not determined to be critical by the analysis mentioned above could be accepted by applying ASME Code Case N316 (Endorsed by the NRC in Regulatory Guide 1.84). It was determined that only two (2) out of approximately 535 welds inspected on fittings could not be accepted as is. It was determined that the ASME Code Case N316 could not be applied to flange welds, therefore, all undersize flange socket welds were reworked per the ASME Section III code requirements.

Because all of the undersized critical welds have been reworked to the requirements of ASME Section III and only two (2) welds out of the 535 initially inspected were undersized, it was determined that further inspection of Schedule 80 socket welds on fittings was not required. To further justify the

elimination of a complete reinspection of schedule 80 socket fitting welds a finite element analysis was performed taking severely undersized socket welds not found in the field, but chosen by engineering as practical conditions for evaluation, and applying the actual worst case loading conditions found in the piping stress analysis for ASME Class 2 and 3 socket welded piping systems. This was done in an effort to prove that even with the possibility of severely undersized welds exceeding the code case weld size limits, the code allowable stresses would not be exceeded. This analysis verified this fact, but was not used to accept any undersized conditions found in the field.

A sample inspection of socket welds was also conducted on schedule 40 piping. Some undersize welds were identified on flanges and were reworked per ASME Section III as described above. No undersize welds were identified on fittings.

The total of 97 socket welds including flange welds were reworked as a result of the corrective action described above.

All corrective action and documentation has been reviewed and accepted.

This report is submitted as the Final Report.