



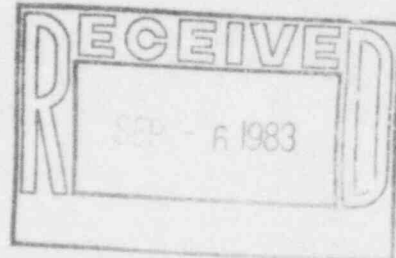
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September 2, 1983

W3I83-0295
Q-3-A35.07.29

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. 29
"Inadequate Clearance Between Process Piping Systems
and Box-Type Pipe Supports/Restraints"
Final Report

REFERENCE: LP&L Letter W3I83-0232 dated July 7, 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. 29, "Inadequate Clearance Between Process Piping Systems and Box-Type Pipe Supports/Restraints."

If you have any questions, please advise.

Very truly yours,

F. J. Drummond
Manager, Engineering & Technical Services

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

3) Mr. E. L. Blake

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

4) Mr. W. M. Stevenson

FINAL REPORT OF
SIGNIFICANT CONSTRUCTION DEFICIENCY NO. 29
INADEQUATE CLEARANCE BETWEEN PROCESS PIPING SYSTEMS
AND BOX-TYPE PIPE SUPPORTS/RESTRAINTS

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e). It describes a deficiency relative to clearance between process piping systems and box-type supports restraints.

To the best of our knowledge, this deficiency has not been reported to the USNRC pursuant to 10CFR21.

DESCRIPTION

On April 23, 1981, it was established that a problem existed with the box-type restraints for process piping being installed by Tompkins-Beckwith, Inc.

The elements of the problem were:

- a) Inconsistent support/restraint design drawing gap criteria provided by Bergen-Patterson
- b) Tompkins-Beckwith's Contract conflicted with the design drawings as to required and allowable gaps between the pipe and restraint structure. The criteria entered in Tompkins-Beckwith, Inc.'s contract was interpreted as 1/16" maximum and 0" minimum allowable gap.

The significant problem which resulted from the above defined problem elements was that the as-built installation had insufficient clearance to allow pipe thermal movement as required.

This problem existed in the following piping systems: Fuel Pool, Containment Spray, Component Cooling Water, Safety Injection, Boron Management, Waste Management, Turbine Cooling Water, Nitrogen Gas, Chemical Volume Control, Blowdown, Emergency Generator, Extraction Steam, Condensate, Reactor Cooling, Main Steam, Heater Drain, Air Evacuation and Auxiliary Steam. The total number of restraints affected was estimated at 1,900. Of this number, 241 supports required some form of modification (shim, trim lugs or increase gap) to make them acceptable.

SAFETY IMPLICATIONS

If these deficiencies were left uncorrected, possible degradation of safety systems could occur. Such degradation could occur by exceeding the ASME Code allowable stresses, creating the possibility that systems would be overstressed in some way not analyzed in the FSAR. Additionally, these deficiencies presented the potential for common mode failures within/between systems. Such failures are not analyzed in the FSAR.

CORRECTIVE ACTION

The corrective action plan to correct the deficiencies is delineated below:

A. Evaluation

1. Ebasco Site Support Engineering (ESSE) Hanger Group measured all as-built gaps.
2. Analysis of as-built gaps versus calculated thermal movements and maximum expected radial expansion of pipe was conducted by Ebasco to determine acceptability of the as-built installation.

B. Corrective Action Implementation

1. Restraints which required modifications were remeasured by Tompkins-Beckwith, Inc. after the modifications were completed.
2. Nonconformance Report W3-2644 was used by Tompkins-Beckwith, Inc. to implement corrective action (modifications) and to document rework on gaps of restraints which were modified.

For those restraints not installed to date, the gap criteria has been redefined and distributed through issue of Field Sketches, Series M694 via FCR-MP-1553. These requirements have been incorporated into the respective Tompkins-Beckwith program procedures.

As of June 20, 1983 all corrective action was completed and all applicable documentation has been reviewed and accepted.

This report is submitted as the Final Report.

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