



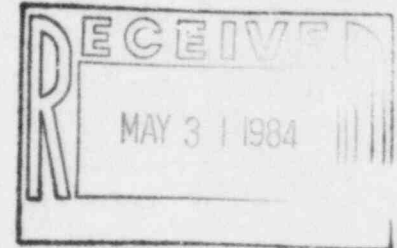
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May 28, 1984

W3K84-1260  
Q-3-A35.07.90

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



REFERENCE: LP&L letter W3K84-0843 dated April 12, 1984

Dear Mr. Collins:

SUBJECT: Waterford SES Unit No. 3  
Docket No. 50-382  
Significant Construction Deficiency No. 90  
"Electrical Conduct Overstressed"  
Final Report

In accordance with the requirements of 10CFR50.55(e), we are hereby providing two copies of the Final Report of Significant Construction Deficiency No. 90, "Electrical Conduct Overstressed".

If you have any questions, please advise.

Very truly yours,

*T. F. Gerrets*  
T. F. Gerrets  
Corporate Quality Assurance Manager

TFG:CNH:VBR

Attachment

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

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cc: Director  
Office of Management  
Information and Program Control  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

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FINAL REPORT OF  
SIGNIFICANT CONSTRUCTION DEFICIENCY NO. 90  
"ELECTRICAL CONDUIT OVERSTRESSED"

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e). It describes a deficiency arising from the lack of complete installation records regarding verification of conduit and conduit support installation in accordance with established installation criteria for span and support loading.

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

DESCRIPTION

Electrical conduit installation at Waterford 3 was performed by Fischbach & Moore (F&M). F&M field fabricated and installed conduit supports in accordance with approved designs and their approved procedure, and inspected them under their quality program. However, records documenting performance of load checks cannot be obtained.

As a result of Ebasco QA Field Surveillance on F&M conduit installations, a program was developed to further evaluate these installations. This program was implemented by Ebasco to evaluate existing Safe Shutdown conduits for compliance with design requirements and to effect the required corrective actions.

A listing was developed based on cable and conduit takeoffs from the Master Equipment List submitted to the NRC as part of the LP&L response to NUREG-0588. It encompasses cable/conduit required to mitigate and/or monitor a Loss of Coolant Accident, Main Steam Line Break or High Energy Line Break Accident.

Of 1838 conduits listed, it was determined that 206 were either wrapped in fire barrier material, had been reworked by Ebasco, or were in areas inaccessible to the walkdown personnel, leaving a sample of 1632 conduits which were walked down.

The 1632 Safe Shutdown Conduits walked down included 11,750 conduit spans on 5342 supports. Three percent of the spans were overlength and 3 percent of the supports were overloaded or defective.

Evaluations for acceptability were performed against the results of a detailed seismic analysis covering conduit spans by conduit size, orientation, span type, and strap types and also covering six common support types for various sizes, orientations, and types of anchorage; for all other types of supports the maximum loads given by the design drawings were used, or an analysis of the unique support was performed.

DESCRIPTION (Continued)

Items affecting Safe Shutdown Conduits found to be rejectable were identified as to location and type of rework required to correct the condition and submitted to Ebasco Construction for performance of work.

SAFETY ANALYSIS

Examples of typical worst case rejectable items (i.e., considerably overloaded or over-spanned compared to original criteria) were selected for analyses and/or test to determine whether failure resulting in circuit interruption or missile generation could occur. These analyses and tests indicated that no such failure would occur under design load conditions, if left uncorrected.

CORRECTIVE ACTION

The installing contractor, Fischbach & Moore, has ceased performing field installations; therefore, no corrective action on future installations under their jurisdiction is required.

NCR-W3-6727 was issued to track and document corrective action for the Safe Shutdown Conduit installations identified as deficient.

The balance of the conduits installed by Fischbach & Moore i.e., those not required for safe shutdown of the plant, may be considered acceptable since the rejection rate of supports for Safe Shutdown Conduits was found to be low, and since no rejectable item was identified which had it not been fixed, would have led to loss of function of safety-related system or missile generation which could threaten a safety-related system.

It is concluded that the balance of the conduits are supported in a manner adequate to satisfy the requirements for Quality, and earthquake resistance of safety-related structures. No further corrective action is required for the remaining conduit.

All corrective actions have been completed and supporting documentation has been reviewed.

This report is submitted as the Final Report.