



**LOUISIANA**  
POWER & LIGHT

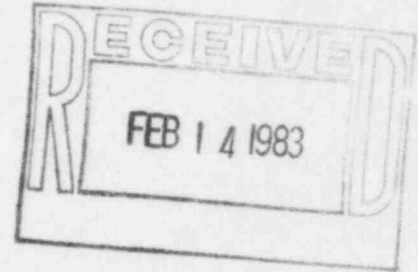
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February 10, 1983

L. V. MAURIN  
Vice President Nuclear Operations

W3I83-0045  
Q-3-A35.07.68

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. 68  
"Spurious ESFAS Actuation"  
First Interim Report

REFERENCE: Telecon dated 1/11/83, M. A. Livesay to G. L. Madsen

Dear Mr. Collins:

In accordance with the requirements of 10CFR50.55(e), we are hereby providing two copies of the Interim Report of Significant Construction Deficiency No. 68, "Spurious ESFAS Actuation."

If you have any questions, please advise.

Very truly yours,

L. V. Maurin

LVM/MAL:keh

Attachment

- cc: 1) Director  
Office of Inspection & Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555
- 2) Director  
Office of Management  
Information and Program Control  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555
- 3) E. Blake
- 4) W. Stevenson

IE 27

INTERIM REPORT OF  
SIGNIFICANT CONSTRUCTION DEFICIENCY NO. 68  
"SPURIOUS ESFAS ACTUATION"

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e). It describes a deficiency in the wiring of the trip path logic for the Engineered Safety Features Actuation System (ESFAS) actuation. 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 OF DEFICIENCY

On December 17, 1982, a spurious Engineered Safety Features Actuation System (ESFAS) actuation event occurred at SONGS Unit 3 following routine preventive maintenance checks on the Plant Protective System (PPS). As a result, an extensive review of the electrical circuitry was conducted by CE to determine the cause of the actuation. This evaluation revealed that a momentary interruption of the J3109 connector in either Channel A or D used to form the ESFAS matrix logic could result in a complete system actuation as experienced at SONGS Unit 3. Whether these components were responsible for the event at SONGS Unit 3 still remains a point of conjecture. It has been determined however that this condition is applicable to Waterford 3.

SAFETY IMPLICATIONS

Actuation of the recirculation actuation signal (RAS) coincident with a safety injection actuation signal (SIAS) that has started the HPSI pumps, will cause automatic closure of the isolation valves in the HPSI pumps miniflow recirculation lines. This situation could result in the HPSI pumps operating against reactor coolant system pressure greater than the shut off head with no recirculation or injection path open, resulting in damage to the pumps. Both trains of an engineered safeguards system could therefore be inoperable simultaneously.

CORRECTIVE ACTION

A field change has been initiated by CE to modify the wiring going to these connectors. This wiring change exchanges trip path signals between the J3109 connector in both Channels A and D such that only half of the matrix and its associated trip path are wired to one connector. This change will prevent system actuation due to disconnection of the connector and is considered a permanent fix. Engineering has reviewed all connectors in the PPS and has found that only the J3109 connector has this design deficiency.

CORRECTIVE ACTION (con't.)

In conjunction with the foregoing, a study was initiated to evaluate mechanical system responses to multiple spurious actuation signals. This study considers multiple ESFAS actuations from normal operating modes. The objective of the study was to verify that any combination of inadvertent actuations (independent of cause) occurring during normal operation, would not result in unacceptable conditions.

It was concluded that, with the exception of the simultaneous SIAS and RAS actuation, all multiple spurious actuations do not result in unacceptable consequences. As described on the previous page, the simultaneous action of SIAS and RAS could result in the HPSI pumps pumping against shutoff head and damaging the pumps because the miniflow isolation valves are shut on RAS.

Accordingly, a field change is also being initiated to change operation of all safety injection system isolation valves (SI-669, SI-660, SI-662, SI-668) from automatic to manual operation. This field change is an interim fix, to be employed until completion of the ongoing study, results of which will enable determination of a final fix.

A final report will therefore be submitted by 3/31/83.

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