



MIDDLE SOUTH  
UTILITIES SYSTEM

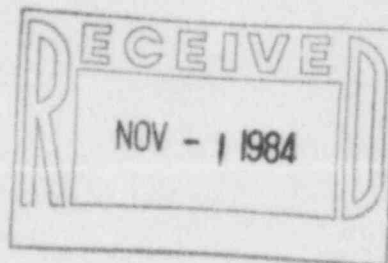
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October 31, 1984

W3P84-2972  
Q-3-A35.07.118  
3-A1.01.04

Mr. John T. Collins  
Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011



Dear Mr. Collins:

Subject: Waterford 3 SES  
Docket No. 50-382  
SIGNIFICANT CONSTRUCTION DEFICIENCY NO. 118  
"Failure to Meet Plant Protection System(PPS)/Plant  
Monitoring Computer (PMC) Interface Design Criteria"  
Final Report

- Reference:
1. Telecon - G.E. Wuller (LP&L) to W.A. Crossman (NRC-Region IV) dated September 28, 1984.
  2. LP&L letter W3P84-2891 dated October 17, 1984.

LP&L verbally notified the NRC of the subject deficiency on September 28, 1984 and confirmed it via the reference 1 telephone documentation. The reference 2 letter confirmed positions discussed with the NRC Staff personnel during a meeting in Bethesda, Md. on October 11 regarding the subject deficiency. In accordance with 10CFR50.55(e)(3), enclosed are two copies of the LP&L final report on SCD-118.

Very truly yours,

K.W. Cook  
Nuclear Support & Licensing Manager

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PDR ADOCK 05000382  
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Enclosure

- cc: NRC, Director, Office of I&E (15 copies)  
NRC, Director, Office of Management  
G.W. Knighton, NRC-NRR  
E.L. Blake  
W.M. Stevenson  
W.A. Cross  
INPO (D.L. Gillispie)

IE-27 |

FINAL REPORT OF  
SIGNIFICANT CONSTRUCTION DEFICIENCY NO. 118

"FAILURE TO MEET PPS/PLANT COMPUTER INTERFACE DESIGN CRITERIA"

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e). It describes a deficiency in the isolation of analog setpoint signals from the Plant Protection System (PPS) to the Plant Monitoring Computer (PMC).

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

DESCRIPTION OF PROBLEM

While troubleshooting an apparent grounding condition on the PMC which was causing an intermittent grounding condition in the PPS, a failed "Mercury wetted relay" was discovered in the PMC loop. Subsequent, a Failure Mode and Effects Analysis (FMEA) was performed assuming a common mode failure of other mercury wetted relays. This analysis determined that the tying together of the commons or connecting them to ground could bypass one of two dropping resistors in the transmitter current loop, altering the analog process input signals. The analog process input signals affected are Steam Generator 1 and 2 Level, Steam Generator 1 and 2 pressure, and Containment pressure for each of the four protection channels. To the best of our knowledge, this failure mode event never actually occurred but was simulated in the field confirming the results of this analysis.

SAFETY IMPLICATION

A common mode failure in the non-safety plant computer circuitry for the Steam Generator Level and pressure setpoint inputs for all four channels would result in the generation of conservatively lower process input signals. A common mode failure for the high containment pressure setpoint inputs for all four channels would result in the generation of lower than actual process input signals and the failure to initiate reactor trip when containment pressure exceeds the setpoint value (5 PSIG). Therefore, if left uncorrected the safety of the plant would be adversely affected.

CORRECTIVE ACTION

A review of the above configuration with other PPS interfaces has been accomplished. LP&L has obtained concurrence from both CE and Ebasco that disconnecting the PPS analog setpoint signal cables from the plant computer is acceptable and satisfies the isolation concern. This action has been completed.