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 50-362 San Onofre Nuclear Station, Unit 3, Southern California 05000362  
 AUTH. NAME: AUTHOR AFFILIATION  
 PAPAY, L.T. Southern California Edison Co.  
 RECIP. NAME: RECIPIENT AFFILIATION  
 ENGLEKEN, R.H. Region 5, San Francisco, Office of the Director

SUBJECT: Final deficiency rept re ITE-Gould 480 V air circuit breakers w/damaged trip coil wiring. Licensee will tie wrap wires near gear reducer or put wires inside spiral wiring harness. Mods will be completed prior to Unit 2 full load.

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NOTES: Send all FSAR & ER amends to L Chandler. 05000361  
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January 12, 1981

Mr. R. H. Engelken, Director  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Region V  
Suite 202, Walnut Creek Plaza  
1990 North California Boulevard  
Walnut Creek, California 94506

Dear Mr. Engelken:

Subject: Docket Nos. 50-361 and 50-362  
San Onofre Nuclear Generating Station, Units 2 and 3

In a letter to your office dated December 19, 1980 we identified a condition which we consider reportable in accordance with 10CFR50.55(e). The condition concerns the potential for gearing of the charging spring motor to wear away wiring insulation causing a grounded condition in 480 volt loadcenter switchgear.

Enclosed in accordance with 10CFR50.55(e)(3) are twenty-five (25) copies of a report entitled, "Final Report on ITE-Gould 480 Volt Air Circuit Breakers with Damaged Trip Coil Wiring - San Onofre Nuclear Generating Station, Units 2 and 3."

If you have any questions regarding this report, we would be pleased to discuss them with you at your convenience.

Very truly yours,

Enclosures



cc: Victor Stello (NRC, Director I&E)  
R. J. Pate (NRC, San Onofre Units 2 and 3)

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FINAL REPORT ON ITE-GOULD 480V AIR CIRCUIT BREAKERS  
WITH DAMAGED TRIP COIL WIRING

San Onofre Nuclear Generating Station Units 2 and 3

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e)(3). It describes a condition found during startup testing of 480 volt switchgear air circuit breakers. This report includes a description of the deficiency, an analysis of the safety implications and a summary of the corrective actions taken to date. By letter dated December 19, 1980 Edison confirmed notification to the NRC of this condition.

BACKGROUND

During startup testing it was discovered that a d.c. ground existed in the trip coil circuit of 480 volt load center circuit breaker 2B0410. Investigation revealed that the wire running to the charging spring motor is routed so that the teeth of the gear reducer wore away the insulation on the wire causing the grounded condition.

The circuit breakers affected are ITE-Gould "K" line which are used throughout the 480 volt load centers. Inspection of two other "K" line breakers from separate loadcenters revealed that the wiring was routed in the same general manner. To date, there have been no further reported grounds on ITE-Gould "K" line air circuit breakers at San Onofre Units 2 and 3.

DISCUSSION

The following discussion is responsive to 10CFR50.55(e)(3).

Description of Deficiency

ITE-Gould "K" line circuit breakers have been furnished with wiring arranged so that the insulation may be damaged by the charging spring gear reducer to the extent that a grounded condition can occur.

Analysis of Safety Implications

In ITE-Gould "K" line circuit breakers, the No. 68 wire, which was damaged, controls operation of the breaker trip coil. Grounding this wire results in an alarm on the ungrounded 125 volt d.c. battery systems but does not affect circuit operation. However, if the conductor of the No. 68 trip coil wire were to be cut through by the gear reducer, there could be a loss of safety function, because the breaker could not be tripped.

FINAL REPORT ON ITE-GOULD  
480V AIR CIRCUIT BREAKERS WITH  
DAMAGED TRIP COIL WIRING  
SONGS 2/3

-2-

CORRECTIVE ACTION

An ITE-Gould field representative has surveyed the problem at the jobsite. It is his recommendation to either tie wrap wires near the gear reducer or to put them inside the spiral wiring harness to remove them from the proximity of the gears. One or both of these methods, as appropriate, will be applied to all safety related ITE-Gould "K" line circuit breakers in San Onofre Units 2 & 3. This modification of wiring arrangement will be completed prior to fuel load of Unit 2.