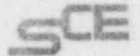


Southern California Edison Company



P. O. BOX 800

2244 WALNUT GROVE AVENUE

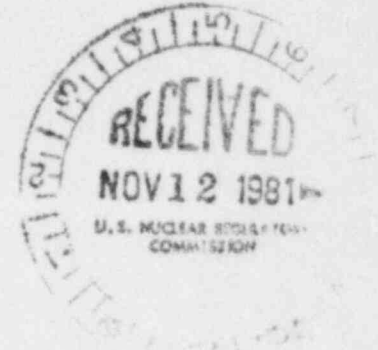
ROSEMEAD, CALIFORNIA 91770

L. T. PAPAY  
VICE PRESIDENT

TELEPHONE  
213-572-1474

October 23, 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:

In a letter to your office dated September 28, 1981 we identified a condition which we considered potentially reportable in accordance with 10CFR50.55(e). The condition involves improper sizing by the vendor of wire bundle connectors on Photohelic Gas Flow Gauges which are a component of the Process and Airborne Radiation Monitors.

Enclosed are twenty-five (25) copies of a final report entitled, "FINAL REPORT ON IMPROPER SIZED WIRE CONNECTORS ON RADIATION MONITORING DEVICES."

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

Very truly yours,

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Enclosures

cc: Victor Stello (NRC, Director I&E)  
A. E. Chaffee (NRC, San Onofre Units 2 and 3)

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FINAL REPORT ON IMPROPERLY SIZED WIRE CONNECTORS  
ON RADIATION MONITORING DEVICES  
San Onofre Nuclear Generating Station, Units 2 and 3

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e)(3). It describes a condition in which certain wire connectors on radiation monitoring devices supplied by Nuclear Measurement Corporation (NMC) are improperly sized for the wire used. This report includes a description of the deficiency, analysis of the safety implications and a summary of the corrective actions taken. By letter dated September 28, 1981, Edison confirmed notification to the NRC of this potentially reportable condition.

BACKGROUND

During instrument testing of the airborne radiation monitors, it was found that the wire connectors used for the Photohelic flow control gauge were too small for the size of wire used, causing the monitors to malfunction.

DISCUSSION

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

Description of the Deficiency

The vendor-supplied wire bundle connectors for the Photohelic Gas Flow Gauges (3000 series, NMC part no. 50150) are sized for 18 gage wire. However, the field size of the connectors were assembled (by the vendor) with 14 gage wire. The insulation on the 14 gage wire was stripped back to fit the 18 gage sized connector which allowed the wires to short. This has caused two of the below listed radiation monitoring instruments, of which the Photohelic Gauges are a component, to fail.

2RT-7804-1      Containment Airborne Monitors  
2RT-7807-2

2RT-7822-1      Fuel Handling Vent Airborne Monitors  
2RT-7823-2

2/3RT-7824-1    Control Room Airborne Monitors  
2/3RT-7825-2

On one of the monitors the filter paper advanced when the connector was touched, and on another monitor the valves failed to realign for the collection of a grab sample, when the grab sample button was depressed.

Analysis of Safety Implications

There are eleven wires going to the connector in question. These include 120V power flow control wires, and high and low flow alarms. This connector could fail such that high levels of radiation could occur without the operators being alerted. The Containment Airborne Monitor is used to isolate containment purge upon high levels of radiation inside containment. The Fuel Handling Vent Airborne Monitor is used to isolate the normal HVAC and switch to emergency HVAC following a postulated fuel handling accident. The Control Room Airborne Monitor is used to switch from the normal to the emergency HVAC when there is high radioactivity in the intake of the normal Control Room HVAC.

CORRECTIVE ACTION

1. Wire connectors to the photohelic gas flow gauge are being replaced with connectors of proper size for the wire used.
2. All other connectors in the monitors are being inspected.
3. A request has been made to the supplier to provide field assistance in resolving the problem and assuring adequate corrective action.

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