



# THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

P.O. BOX 5000 - CLEVELAND, OHIO 44101 - TELEPHONE (216) 622-9800 - ILLUMINATING BLDG. - 55 PUBLIC SQUARE

*Serving The Best Location in the Nation*

DMP

November 28, 1984

MURRAY R. EDELMAN

VICE PRESIDENT  
NUCLEAR

Mr. James G. Keppler  
Regional Administrator, Region III  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

RE: Perry Nuclear Power Plant  
Docket Nos. 50-440; 50-441  
Topaz Class 1E Inverters  
RDC [120(84)]

Dear Mr. Keppler:

This letter serves as a final report on the potential significant deficiency concerning Class 1E inverters manufactured by Topaz which are utilized in various control panels supplied by General Electric. This item was originally identified to Mr. Knop of your office on October 29, 1984, by Mr. P. P. Martin of The Cleveland Electric Illuminating Company (CEI). General Electric reported this deficiency to the NRC in accordance with 10CFR21 on October 6, 1984.

This report contains a description of the deficiency, an analysis of safety implications, and the planned corrective action.

## Description of the Deficiency

General Electric (GE) notified CEI in a letter dated October 11, 1984, that the adjustment of the low voltage shutoff and turnon for GE dedicated Class 1E inverters was set too high. The original manufacturer, Power Mark, a division of Topaz, set the adjustment too high. In the GE dedication process, an operable range of 105 to 140 volts DC was being checked for instead of the required range of 100 to 140 volts. Typical DC bus voltages range from 108 to 132 volts with momentary voltage dips to 105 volts DC during the startup of large DC loads. This results in a condition where the inverter may not start or restart until the voltage is increased to 118 volts DC since there is a 13 volt fixed offset above 105 volts.

## Analysis of Safety Implications

Because the allowable momentary dip of the input bus voltage for the inverters is equal to the preset inverter low voltage cutoff, 105 volts, an allowable voltage dip could result in an inverter trip and a failure to restart during a design basis accident. The subject inverters are used to power 24 volt DC

8412110405 841128  
PDR ADDCK 05000440  
S PDR

DEC 3 1984

IE27  
1/0

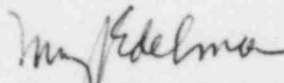
instrument buses in the Reactor Core Isolation Cooling (RCIC) and various Emergency Core Cooling Systems (ECCS). Failure of the inverters during a design basis accident could result in a loss of the RCIC or ECCS functional capability to perform their intended safety function.

Corrective Action

Nonconformance Report (NR) NDS-0098 was issued by Project Organization to track the Topaz inverters. GE is issuing Field Disposition Instructions (FDI) WOBO and WOBW to provide for testing of the inverter trip and restart voltages and adjust the settings as necessary for Unit 1. Unit 2 will be covered in the same manner by FDI's WRXD and WRXJ. All affected inverters will be adjusted so they will not trip at voltages between 100 and 140 volts DC and will resume operation when the input voltage increases to 108 volts DC. It is anticipated that the testing and adjustment of all Unit 1 and spare inverters will be completed by January 6, 1985. Testing and adjustment of the Unit 2 inverters will be completed consistent with the Unit 2 construction schedule and prior to turnover of the affected systems.

Please call if there are any additional questions.

Sincerely,



Murray R. Edelman  
Vice President  
Nuclear Group

MRE:pab

cc: Mr. J. A. Grobe  
USNRC, Site Office

Mr. D. E. Keating  
USNRC, Site Office  
Records Center, SEE-IN  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, Georgia 30339

Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

U.S. Nuclear Regulatory Commission  
c/o Document Management Branch  
Washington, D.C. 20555