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THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

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February 28, 1985

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
Voltage Drop in Emergency Service
Water Pumphouse Ventilation Control
Circuits [RDC 129(85)]

Dear Mr. Keppler:

This letter serves as the final report pursuant to 10CFR50.55(e) regarding evaluation of the voltage drop in some Emergency Service Water Pumphouse Ventilation system control circuits. Mr. J. McCormick-Barger of your office was notified on January 30, 1985, by Mr. T. A. Boss of The Cleveland Electric Illuminating Company that this problem was being evaluated per our Deviation Analysis Report 223. It has been determined that this situation is reportable pursuant to the requirements of 10CFR50.55(e).

This report contains a description of the deficiency, an analysis of safety implication, and our corrective actions.

Description of Deficiency

Calculations have indicated that the control circuit voltage drop in both the Division 1 and 2 Emergency Service Water (ESW) Pumphouse Ventilation system fan units, 1M32-C001A and 1M32-C001B, may be large enough to result in non-operation of these units.

Field testing of the fan unit's control circuits has shown that with greater than nominal (120 VAC) voltage present at the control circuit sources, the Division 1 fan unit's control circuit is inoperable and the Division 2 fan unit's control circuit is operable.

Analysis of Safety Implication

Although each Division is capable of providing adequate ventilation, a random failure which resulted in the inoperation of the Division 2 fan unit would result in no ventilation being available to the ESW Pumphouse in the event that the Division 1 fan unit did not start due to undervoltage problems.

Our Architect/Engineer, Gilbert/Commonwealth (G/C) Inc., has analyzed the above situation and has determined that the expected temperature rise would exceed equipment qualification temperatures of safety-related equipment contained in the ESW Pumphouse before, under accident conditions, either of the ventilation

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fan units could be restored to operation. This postulated failure of the Emergency Service Water system would impair the operation of the engineered safety systems to which it supplies cooling water.

Corrective Actions

G/C Inc. is performing an analysis of circuits to determine if additional undervoltage problems exist. Any identified discrepancies will be analyzed and processed in accordance with our design control program.

To ensure adequate starting voltage for the fan units, the following three modifications will be instituted:

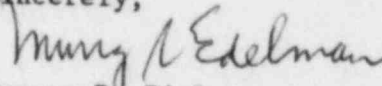
- o An interposing relay will be added to the control circuit for IM32-C001A. This relay is already in place on the control circuit for IM32-C001B.
- o Control power transformers of a higher VA rating will be added to the control circuits of both fan units.
- o Additional conductors will be added in parallel with existing circuit conductors in order to reduce the overall impedance of the control circuits.

Engineering Change Notice 25987-86-1135 Rev. - has been issued to implement these modifications.

We anticipate completion of the above corrective actions by April 26, 1985.

Please call if there are any 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

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