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U-602299
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4F.140

Docket No. 50-461

10CFR21.21

Document Control Desk
Nuclear Regulatory Commission
Washington, D.C. 20555

JGC-090-94
June 6, 1994

Subject: 10CFR21 Defect 21-94-010: Incorrect Internal Wiring of Basler
Electric Motor-Operated Potentiometer Supplied by MKW Power Systems

Dear Sir:

On May 12, 1994, during a post maintenance test run of the Division 3 emergency diesel generator at Clinton Power Station (CPS), generator voltage climbed to approximately 5,000 volts alternating current and could not be lowered. An investigation identified that a newly installed motor-operated potentiometer (MOP) was not operating correctly and would not permit generator voltage adjustment. Further investigation using the manufacturer's wiring diagram identified that two wires internal to the MOP unit were connected to the wrong terminals.

On May 13, 1994, Illinois Power (IP) determined that the incorrectly wired MOP was a condition potentially reportable under the provisions of 10CFR21.

On the basis of an evaluation of this matter, IP concluded that the incorrectly wired MOP constitutes a defect. IP provides the following information in accordance with the requirements of 10CFR21.21(c)(4). Initial notification of this matter will be provided by facsimile of this letter to the NRC Operations Center in accordance with 10CFR21.21(c)(3) on the date this letter is signed by the responsible officer.

- (i) J. G. Cook, Vice President of IP, Clinton Power Station, Post Office Box 678, Clinton, Illinois, 61727, is informing the Nuclear Regulatory Commission of a 10CFR, Part 21 defect by means of this report.
- (ii) The basic component involved in this reportable defect is a motor-operated potentiometer, model number MOC3502, part number 9072300116, serial number 10426. The MOP is designed to permit operator control of the emergency diesel generator voltage output.

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- (iii) The MOP was manufactured by Basler Electric, Highland, Illinois, and supplied for use on the emergency diesel generator by MKW Power Systems, Rocky Mount, North Carolina, as a basic component.
- (iv) The defect is the incorrect internal wiring of the MOP, which was not in accordance with the vendor's wiring diagram and was terminated on incorrect terminals at the 125 volts direct current (vdc) input, thus reversing the motor polarity. The incorrect wiring caused the motor of the MOP to operate in a direction opposite of the intended direction. Therefore, when the MOP reached the end of its voltage range, it locked out and was no longer adjustable. This condition prevented control of emergency diesel generator voltage output.

The inability to control the generator voltage output could have resulted in damage to the generator loads, that is, motors of various safety-related equipment.

This condition would not have gone undetected at CPS due to existing post maintenance testing requirements. The defect was discovered while the emergency diesel generator was out of service for maintenance and was corrected before restoring the emergency diesel generator to service.

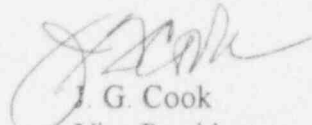
- (v) The incorrect wiring of the MOP was discovered on May 12, 1994. IP determined on May 13, 1994, that the condition was potentially reportable under the provisions of 10CFR21.
- (vi) IP has identified only one incorrectly wired MOP at CPS. IP has no information about potentially miswired MOPs supplied to other purchasers.
- (vii) IP determined the correct wiring scheme by review of a vendor wiring diagram and rewired the MOP in accordance with the diagram. The MOP was bench-tested with satisfactory results and reinstalled on the emergency diesel generator. A test run of the emergency diesel generator demonstrated that the MOP and the generator were operating properly prior to restoring the emergency diesel generator to service.

IP advised MKW Power Systems verbally of this defect and issued Request for Corrective Action (RCA) 94-00-02, requesting that MKW identify the root cause of the defect and take action to correct the condition and prevent its recurrence.

- (viii) IP recommends that, prior to installation, users of the MOP bench-test the unit with 125 vdc in accordance with the user's design. Additional information about this defect may be obtained by contacting J. C. Golding, System Engineer, at (217) 935-8881, extension 4049.

Documentation related to this defect is available for your review at our offices.

Sincerely yours,



J. G. Cook
Vice President

RSF/csm

cc: NRC Clinton Licensing Project Manager
NRC Resident Office, V-690
Regional Administrator, Region III, USNRC
Director, Office of Nuclear Reactor Regulation
INPO Records Center
Illinois Department of Nuclear Safety
MKW Power Systems