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FEB 17 1984

JOHN S. KEMPER  
VICE-PRESIDENT  
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Mr. Thomas E. Murley, Director  
United States Nuclear Regulatory Commission  
Office of Inspection and Enforcement, Region I  
631 Park Avenue  
King of Prussia, PA 19406

50-352

SUBJECT: Significant Deficiency Report  
Final Report on Agastat CR0095 Relay Socket Failures  
Limerick Generating Station, Units 1 and 2  
NRC Construction Permits Nos. CPPR-106 & 107

REFERENCES: Telecon of January 18, 1984  
P. K. Pavlides (PECo) to R. Keimig (USNRC)

FILE: QUAL 2-10-2 (SDR #129)

Dear Mr. Murley:

In compliance with 10CFR50.55(e), enclosed is the final report on the subject deficiency.

Sincerely,

*John S. Kemper*  
*J. S. Kemper*

Copy to: Director of Inspection and Enforcement  
United States Nuclear Regulatory Commission  
Washington, DC 20555

S. K. Chaudhary, Residency NRC Inspector (Limerick)  
J. Wiggins, Resident NRC Inspector (Limerick)

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Agastat CR0095 Relay Socket Failures

Limerick Generation Station - Units 1 & 2

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Description of Deficiency

Recent testing at Limerick Generating Station has revealed a significant number of defective Agastat CR0095 relay sockets. These sockets are being tested to determine if the design defects described by General Electric (GE) Service Information Letter (SIL) 384 (October 1982), and NRC IE Information Notice 82-48 (December 3, 1982) exist at Limerick.

The defects are associated with inadequate retention of the female terminal in the relay socket allowing the terminals to be pushed-out of the socket when the relay is plugged-in. This results in an open circuit or a poor connection between the relay and the socket. Approximately 10% of the sockets tested thus far have had this defective condition and PECO has determined that these failures are a significant deficiency that should be reported under 10CFR50.55(e).

Inspection

A comprehensive inspection program was developed for Limerick in response to SIL 384 and IE Info Notice 82-48. The program was assigned to PECO Field Engineering Section on September 22, 1983. The program includes approximately 780 relay sockets in GE panels located mostly in the Control Room and Auxiliary Equipment Room. An investigation showed that only the GE portion of the Limerick design utilizes this type of socket. The program did not include any sockets that GE previously inspected or replaced with a modified socket. The test procedure being used is that which is recommended in SIL 384. Sockets are determined to be defective if any one of the sixteen (16) female terminals in the socket can be pushed-out through the back of the socket by a measured mechanical force (approximately 6 lbs.). As of January 17, 1984, 616 sockets have been inspected; 64 have been found defective and replaced. It was determined that this number of defective sockets presents a potentially reportable item and was reported via telecon to the NRC on January 18, 1984.

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Corrective Action

The program is continuing. As defective sockets are discovered, PECO Field Engineering removes the socket and replaces it with an Agastat CR0002 socket which is functionally identical but not susceptible to the failure mode described in GE SIL 384. This program will be completed prior to fuel load.

Safety Implications

Defective sockets have been found in Reactor Protection System (RPS), Emergency Core Cooling System (ECCS), and Nuclear Steam Supply Shutoff System (NSSSS) circuitry. Socket failures could result in failure of the associated system to perform as designed. The defective sockets are being replaced thus correcting any adverse safety implications induced by the defective socket failure.

Analysis of Corrective Action

Replacement of the defective sockets positively assures that the old socket failure will not induce any adverse safety implications.