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November 16, 1981

Mr. R. C. Haynes
Director, Region I
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406



SUSQUEHANNA STEAM ELECTRIC STATION
FINAL REPORT OF A DEFICIENCY INVOLVING
AGASTAT 'GP' RELAY BASES
ERs 100450/100508 FILES 840-4/821-10
PLA-963

Reference: PLA-930 (9/22/81)

Dear Mr. Haynes:

This letter serves to provide the Commission with a final report of a deficiency relating to the electrical integrity of wire terminations on Agastat 'GP' relay bases. The deficiency was originally described in the above referenced letter and this report is submitted pursuant to the provisions of 10 CFR 50.55(e).

The attachment to this letter contains a description of the problem, its cause, safety impact and the corrective action planned.

We trust the Commission will find this report to be satisfactory.

Very truly yours,

N. W. Curtis
Vice President-Engineering & Construction-Nuclear

FLW:sab

Attachment

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Mr. R. C. Haynes

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November 16, 1981

cc: Mr. Victor Stello (15)
Director-Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. G. McDonald, Director (1)
Office of Management Information & Program Control
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. Gary Rhoads
U. S. Nuclear Regulatory Commission
P.O. Box 52
Shickshinny, PA 18655

SUBJECT

Agastat GP Series Relay Bases

DESCRIPTION OF PROBLEM

The Agastat GP relay is a general purpose, auxiliary relay, which is used as a contact multiplier. These relays are used in various safety-related systems at Susquehanna.

A problem has been identified with the electrical wire terminations to the relay base. Several relays have been found with terminal screws and/or terminal nuts (referred to as locking springs by Agastat) having stripped threads.

This problem has been identified only in panels supplied by Comsip Customline Corp. of Linden, New Jersey.

CAUSE

The terminal nut is a thin nut approximately 1/16 in. thick with few screw threads. The nut floats freely, parallel to the direction of travel of the terminal screw. The nut is prevented from rotating by the molded relay base. Because of the nature of the free floating nut, it is possible to cross thread the screw into the nut, thereby stripping the nut. Also, due to the thinness of the nut, overtightening of the screw can also result in stripping the nut. There are no torquing requirements specified by the manufacturer.

During assembly of the panels at Comsip, some terminal screws and/or nuts were stripped. This was evident from the fact that a larger size screw was threaded into the existing nut. Also, due to the design of the relay base, the terminal screws were cross threaded into the nuts.

Initially, when the larger size screw is threaded into the existing nut, or when the terminal screw is cross threaded into the terminal nut, the screw will tighten, providing a good electrical connection.

During installation and checkout of the panels at the plant, the terminal screws are checked to ensure tightness. Also, if any rework is required in the panels, determining the electrical connections may result. The additional tightening and reterminating of the electrical connections can cause the terminal screws and/or nuts to strip, thus preventing them from tightening.

ANALYSIS OF SAFETY IMPLICATIONS

GP relays are used in various safety related systems. When the terminal screws and/or nuts are stripped, the electrical integrity of the wire terminations is in question. This leaves the potential for Class 1E circuit failures. PP&L Engineering has determined that, if this condition had gone uncorrected, it would have adversely affected the safe operation of the plant, and therefore is reportable under the requirements of 10 CFR 50.55(e).

CORRECTIVE ACTION

All Agastat GP series relay bases in the panels supplied by Comsip will be replaced with a different design base. Unit 1 and common replacements will be controlled by PP&L NCR 81-392 and Work Authorization U14283. Bechtel NCR 7492 will control Unit 2 replacements.

CONCLUSION

Completion of the replacement of the Agastat GP relay bases will assure the electrical integrity of the wire terminations to the relay.