

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8102180509 DUC. DATE: 81/02/11 NOTARIZED: NO DOCKET #  
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylvania 05000387  
 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylvania 05000388  
 AUTH. NAME: CURTIS, M.H. AUTHOR AFFILIATION: Pennsylvania Power & Light Co.  
 RECIP. NAME: GRIER, B.H. RECIPIENT AFFILIATION: Region 1, Philadelphia, Office of the Director

SUBJECT: Final deficiency rept re GE pneumatic timing relay setpoint drift, initially reported on 800711. Affected relays in automatic depressurization & core spray sys will be replaced. Final rept re Agastat relays by 810529.

DISTRIBUTION CODE: B019S COPIES RECEIVED: LTR / ENCL / SIZE: 7  
 TITLE: Construction Deficiency Report (10CFR50.55E)

NOTES: Send I&E 3 copies FSAR & all amends. 05000387  
 Send I&E 3 copies FSAR & all amends. 05000388

| ACTION:       | RECIPIENT       |    | COPIES |      | RECIPIENT         | COPIES       |     |      |
|---------------|-----------------|----|--------|------|-------------------|--------------|-----|------|
|               | ID CODE/NAME    |    | LTR    | ENCL |                   | ID CODE/NAME | LTR | ENCL |
| ACTION:       | A/D LICENSNG    | 04 | 1      | 1    | YOUNGBLOOD, B     | 05           | 1   | 1    |
|               | KUSHBROOK, M.   | 06 | 1      | 1    | STARK, R.         | 07           | 1   | 1    |
| INTERNAL:     | AD/RCI/IE       | 17 | 1      | 1    | ASLBP/J.HARD      |              | 1   | 1    |
|               | D/DIR HUM FACIS |    | 1      | 1    | DIR, DIV OF LIC   |              | 1   | 1    |
|               | EDU & STAFF     | 19 | 1      | 1    | EQUIP QUAL BR11   |              | 1   | 1    |
|               | HYD/GEU BR      | 22 | 1      | 1    | I&E               | 09           | 1   | 1    |
|               | LIC QUAL BR     | 12 | 1      | 1    | MPA               | 20           | 1   | 1    |
|               | NRC PDR         | 02 | 1      | 1    | WELD              | 21           | 1   | 1    |
|               | PROC/TEST REV   | 15 | 1      | 1    | QA BR             | 14           | 1   | 1    |
|               | REG FILE        | 01 | 1      | 1    | RUTHERFORD, W. IE |              | 1   | 1    |
| STANDARDS DEV | 21              | 1  | 1      |      |                   |              |     |      |
| EXTERNAL:     | ACKS            | 16 | 16     | 16   | LPDR              | 03           | 1   | 1    |
|               | NSIC            | 06 | 1      | 1    |                   |              |     |      |

FEB 20 1981

VP

MHX

TOTAL NUMBER OF COPIES REQUIRED: LTR

42 ENCL 42

50-387

NORMAN W. CURTIS  
Vice President-Engineering & Construction-Nuclear  
770-5381

February 11, 1981

Mr. Boyce H. Grier  
Director, Region I  
U. S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

SUSQUEHANNA STEAM ELECTRIC STATION  
STATUS UPDATE OF A DEFICIENCY RELATING TO  
AGASTAT AND GENERAL ELECTRIC TIMING RELAYS  
ERs 100450/100508            FILE 840-4/900-10  
PLA-616

Reference: PLA-508 (7/11/80)


Dear Mr. Grier:

This letter serves to supplement the above referenced correspondence which advised the Commission of a deficiency relating to pneumatic time delay relays.

The attachment to this letter contains a final report on the defective General Electric CR2820 relays. We expect to provide a final report on the Agastat relays prior to May 29, 1981.

We trust the Commission will find the information forwarded by this letter to be satisfactory.

Very truly yours,



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

Attachment

FLW:sab

B019  
S  
1/1

S

8-102180 509

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

~~Mr. [REDACTED] Director~~  
Office of Management Information & Program Control  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. Robert M. Gallo  
U. S. Nuclear Regulatory Commission  
P.O. Box 52  
Shickshinny, PA 18655

## Subject

General Electric pneumatic timing relay set point drift.

## Description

In BWR Services Information Letter, SIL No. 230 Category 1, dated June 6, 1977 and SIL No. 230 Supplement No. 1 Category 2, dated December 30, 1977, GE recommends replacing the GE Model CR2820 pneumatic timing relays in the ADS, RHR, and Core Spray systems with the Agastat TR Series solid state timing relays. The reason given is that the GE pneumatic timers may exhibit set point drift, increasing the time delay, on the first pickup after more than one month in the deenergized state.

Upon investigation, fifty (50) Model CR 2820 timing relays are found being used at Susquehanna, 25 on Unit I and 25 on Unit II. For each Unit there are 12 timing relays in the RPS, one (1) timing relay in the HPCI system, one (1) timing relay in the RCIC system, two (2) timing relays in the Reactor Water Clean-up System, one (1) timing relay in the Feedwater Control System, two (2) timing relays in the ADS, four (4) timing relays in the Core Spray System and two (2) timing relays in the RHR System.

## Cause

The cause of the drifting set point, as described above, has not been defined. The condition appears to be a generic trait among pneumatic time delay relays.

## Analysis of Safety Implications

It was determined that, for each Unit, the two (2) relays in the ADS and four (4) relays in the Core Spray System would require replacement. The remaining relays do not require a change because precise timing is not critical for safe plant operation.

The relays used in the ADS control the High Drywell Pressure/RPV Low Level Logic and Alarms. These relays are used in the control circuits for the ADS Solenoid Valves, which actuate the relief valves, thereby relieving high pressure in the Reactor. Extended operating time of these relays could affect the safe operation of the nuclear power plant.

The relays in the Core Spray System are used in the starting circuits for the Core Spray Pumps. The Core Spray Pumps are required for the safe shutdown of the Unit in the event of certain postulated accident conditions. Extended operating time of the relays would mean an extended time in starting the Core Spray Pumps, and, subsequently a delay in providing adequate core cooling.

Project Engineering has determined that, if the conditions described had gone uncorrected, it would adversely affect the safe operation of the plant, and therefore, is reportable under the requirements of 10 CFR 50.55(e).

Corrective Action

The affected relays used in the ADS and Core Spray Systems, on both Units, will be replaced with Agastat TR Series solid state timing relays. We expect to complete Unit 1 replacements, based upon parts availability, in May 1981. PP&L NCR 81-069 controls Unit 1 GE relays, Bechtel NCR 7103 controls Unit 2.

Conclusions

The use of the Agastat TR Series solid state timing relays will eliminate the drifting set point problem on initial pickup for infrequent relay operations.

