



Pennsylvania Power & Light Company

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Bruce D. Kenyon
Vice President-Nuclear Operations
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APR 09 1984

Dr. Thomas E. Murley
Regional Administrator-Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

SUSQUEHANNA STEAM ELECTRIC STATION
10CFR PART 21 REPORT
ER 100450 FILE 841-29
PLA-2166

Docket Nos. 50-387
50-388

Dear Dr. Murley:

This letter provides the Commission with a report required by 10CFR21 regarding a deficiency on the failure of Crosby IMF-2 Solenoids. Mr. R. M. Harris of PP&L originally reported this defect by telephone to Mr. E. Kelly of NRC Region I on April 3, 1984. The defect was identified on March 16, 1984 and determined reportable on April 2, 1984.

The subject solenoids are identified as Crosby Valve and Gauge IMF-2 solenoids and were supplied by GE as part of the NSSS contract. The IMF-2 solenoids are installed on both SSES Units 1 and 2. Each unit has 12 solenoids for the ADS system (6 for Division I and 6 for Division II) and 16 solenoids for the safety relief valve electrical function, for a total of 28 solenoids per unit.

During construction testing on SSES Unit 1 six solenoids were found failed. Four of these failures were analyzed by Crosby. Crosby diagnosed the failures as insulation failure caused by voltage spikes and recommended that a diode be added to prevent the voltage spikes from causing damage. The diodes were subsequently added as a result of the Crosby recommendation. After the diodes were added, two more solenoids failed. These two failed solenoids were then analyzed by GE. GE also diagnosed the failure as insulation failure and informed PP&L of this on March 16, 1984.

Failure of an SRV solenoid due to insulation failure results in the solenoid not operating when an electrical signal is received to open the valve. For the ADS system, failure of one solenoid would not prevent the SRV from operating since either Division can operate the valve. For the electrical safety/relief function the valve would be electrically inoperable. The mechanical SRV function would not be affected.

Based on the number of failures seen to date and the safety function performed by the solenoids, PP&L has determined that this defect could represent a substantial safety hazard.

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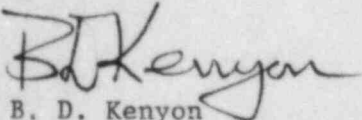
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The following corrective actions are being taken by PP&L:

1. PP&L and GE jointly developed test procedures to bench test spares and all 56 installed solenoids on both units. Two additional solenoids were found failed. One failure was found during the bench test of spares and another failure during testing on Unit #1 in a non ADS SRV. This solenoid has been replaced. Unit #2 testing is scheduled to be completed prior to steam dome pressure exceeding 100 psig.
2. All installed Unit #1 solenoid valves have now been tested and are acceptable. Any Unit #2 solenoids which fail the test procedure will be replaced by PP&L.
3. Additional testing of failed solenoids will be done by PP&L in an attempt to identify the failure mechanism.

PP&L has been informed by GE that similar failures have occurred on WPPS #2 but not on LaSalle #1 or #2. PP&L has no other information on the number, location or service conditions of IMF-2 solenoids other than the above. PP&L is not in a position to provide advice related to this condition to others who may use Crosby IMF-2 solenoid valves.

Very truly yours,



B. D. Kenyon
Vice President-Nuclear Operations

cc: Mr. R. H. Jacobs - NRC Senior Resident Inspector