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SUBJECT: Interim deficiency rept re excessive voltage drops in ac motor operated valve controls circuits ER 100450 & ER 100508. Caused by sizeable resistance of small control cable long lengths. Alternatives being evaluated.

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NORMAN W. CURTIS
Vice President-Engineering & Construction-Nuclear
821-5381

October 20, 1980

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

SUSQUEHANNA STEAM ELECTRIC STATION
INTERIM REPORT OF A DEFICIENCY ON
EXCESSIVE VOLTAGE DROPS IN AC MOTOR OPERATED VALVE CONTROL CIRCUITS
ERs 100450/100508 FILE 840-4
PLA-560

Dear Mr. Grier:

This letter serves to confirm information provided by telephone to NRC Region I Inspector Mr. J. Durr by Mr. R. A. Schwan of PP&L on September 18, 1980. During that conversation Mr. Durr was advised that the subject condition was under evaluation for reportability under the provisions of 10CFR50.55(e).

The deficiency involves excessive voltage drops in the control circuitry of the motor starters for some motor operated valves (MOV's). (Motor starters are devices which provide the control of power to motors.) For AC powered MOV's, the motor starter operating coils are supplied via a control transformer tapped off the MOV power supply. Multiple switches and relay contacts are wired in this control circuit to make up the control logic for the MOV.

At Susquehanna SES, excessive voltage drops occur in motor starter control cables when size 2, or larger, starters for motor operated valves are energized. These voltage drops, which are severe enough to prevent motor starter operation, are caused by the sizeable resistance (several ohms) of long lengths (several thousand feet) of small (#14 cu) control cable.

Twenty-two (22) size 2 or larger motor starters are located in Class 1E safety systems such as Reactor Recirculation and Residual Heat Removal and must be checked to determine if excessive voltage drops occur.

Since these valves are required to operate to mitigate a design basis event, the aforementioned failure to operate represents a significant deficiency in design. Therefore, the deficiency is deemed reportable under 10CFR50.55(e).

Further, since the details of this report provide information relevant to the reporting requirements of 10CFR21, this correspondence is considered to also discharge any formal responsibility PP&L may have for reporting in compliance thereto.

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PENNSYLVANIA POWER & LIGHT COMPANY

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October 20, 1980

PP&L Engineering is in the process of evaluating several alternatives in order to determine an optimum course of action. We currently estimate that a final report of the deficiency and the corrective action taken will be transmitted to you in January, 1981.

Very truly yours,



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

FLW:mcb

cc: Mr. Victor Stello (15)
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