



Pennsylvania Power & Light Company

Two North Ninth Street • Allentown, PA 18101 • 215 / 770-5151

Norman W. Curtis
Vice President-Engineering & Construction-Nuclear
215/770-7501

December 30, 1983

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
UPDATE OF INTERIM 10CFR50.55(e) REPORT - DESIGN
VERIFICATION DEFICIENCY OF MAXIMUM CIRCUIT
LENGTHS OF LOW VOLTAGE POWER AND CONTROL CABLES
ER 100508 FILE 821-10
PLA-1946

Docket No. 50-388

References: PLA-1439 dated December 15, 1982
PLA-1748 dated July 15, 1983
PLA-1832 dated September 21, 1983

Dear Dr. Murley:

This letter serves to provide the Commission with an additional interim report on a deficiency involving Bechtel's failure to accomplish the design verification of safety related power and control cables in accordance with Bechtel Project Engineering Procedure Manual EDPI 2.16.1, Rev. 0.

This deficiency was originally reported by telephone to Mr. Donald F. Johnson of NRC Region I as "potentially reportable" by Mr. Jason Saranga of PP&L under the requirements of 10 CFR 50.55(e) for SSES Unit II.

The attachment to this letter contains a description of the deficiency, its cause, the current status of the analysis of safety implications for both Unit I and II and the corrective action taken to date and planned. This information is furnished for SSES Unit II pursuant to the provisions of 10 CFR 50.55(e).

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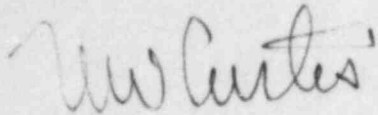
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A final report on the subject deficiency will be submitted to the Commission by the end of January 1984.

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

Very truly yours,



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

WLB:sab

wlb/lt/k/285/b

Attachment

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Dr. Thomas E. Murley

Copy to:

Mr. Richard C. DeYoung (15)
Director-Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. A. E. Finkel
U.S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

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

Mr. Loren Plisko
U.S. Nuclear Regulatory Commission
P.O. Box 52
Shickshinny, PA 18655

Records Center
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, GA 30339

Attachment to PLA-1946

SUBJECT

Electrical Power and Control Cables - Deficiency in design verification of maximum permissible lengths of wire in low voltage power and control circuits.

DESCRIPTION AND CAUSE

In 1980, PP&L identified a deficiency involving excessive voltage drop in low voltage power and control circuits. To prevent recurrence of this deficiency, PP&L required Bechtel to revise the Bechtel Engineering Procedures Manual to include a cable sizing procedure for all newly designed cables. Implementation of this procedure (EDPI 2.16.1) required the completion and filing of cable length verification forms. The present deficiency occurred as a result of Bechtel's failure to complete the required cable length verification forms in accordance with the requirements of EDPI 2.16.1 Rev. 0.

ANALYSIS OF SAFETY IMPLICATIONS

Bechtel's failure to verify the as-installed condition resulted in the need to re-evaluate the as-installed cable lengths. This re-evaluation resulted in the identification of forty-five (45) Unit I and one hundred thirty-five (135) Unit II cables that failed to meet the general minimum voltage design criteria. Bechtel Engineering has evaluated each of the 180 questionable cables and determined that sufficient end device voltage will be available to assure design operation. Currently, PP&L is evaluating each of the 180 cables via linear circuit analysis techniques using actual plant circuit parameters and existing plant voltage studies. PP&L continues to consider this deficiency to be "potentially reportable" until all evaluations have been completed.

CORRECTIVE ACTION

Bechtel Construction Engineering provided a list of cables added or revised from May 1, 1981 to October 25, 1982. This list of 1058 Unit I and 2478 Unit II cables, which included both safety related and affiliated power and control cables, was used to ensure a complete cable review. Each cable was to be reviewed against the requirements of Bechtel Cable Length Verification Procedure EDPI-2.16.1, Rev. 1.

CORRECTIVE ACTION (Continued)

Bechtel Engineering completed the review and required documentation by April 1, 1983 as anticipated in the interim report (PLA-1439). However, in order to satisfy concerns raised by PP&L Engineering, an audit was conducted of Bechtel San Francisco Home Office on June 13-17, 1983 to verify corrective action implementation. This audit identified that the pre-audit documentation for the Design and Verification of Power & Control Cables for the period cited was inadequate due to Bechtel Engineering's failure to fully implement the requirements (minimum voltage design criteria) of EDPI 2.16.1, Rev. 1.

Additional Bechtel corrective action was requested and completed in response to the June 13-17 audit. This corrective action resulted in the identification of 45 Unit I and 135 Unit II cables which failed to meet the General Minimum Voltage Design Criteria. PP&L is developing a drawing entitled: "Low Voltage Power and Control Cables, Source Voltage Requirements" to identify those circuits requiring more than the general minimum voltage design criteria. This drawing will be utilized to monitor these circuits to insure proper end device operation throughout the life of the plant.

To date Bechtel has adequately completed and documented the required cable length verification forms and associated calculations in accordance with Bechtel Project Engineering Procedures Manual. Presently, PP&L is reviewing the Bechtel documentation and conclusions to assure satisfactory cable design.

wlb/at/k/286/b