



PHILADELPHIA ELECTRIC COMPANY

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MAR 6 1984

JOHN S. KEMPER
VICE-PRESIDENT
ENGINEERING AND RESEARCH

Mr. Thomas E. Murley, Director
United States Nuclear Regulatory Commission
Office of Inspection and Enforcement, Region I
631 Park Avenue
King of Prussia, PA 19406

Subject: USNRC IE Region I Letter dated November 22, 1983
Re: Site Inspection of September 12-16, 1983
Inspection Report No. 50-352/83-12
Limerick Generating Station, Unit 1
Reference: J.S. Kemper letter to T. E. Murley dated 12/22/83
File: QUAL 1-2-2 (352/83-12)

Dear Mr. Murley:

As stated in the referenced letter regarding the item identified during the subject inspection of construction activities authorized by NRC License No. CPPR-106, we are now transmitting herewith the description of the action completed and a full response to the violation on Attachment I - Response to Appendix A.

Also enclosed is an affidavit relating to the response.

Should you have any question concerning this item, we would be pleased to discuss it with you.

Sincerely,

John S. Kemper

GL:am
Attachment

Copy to: Director of Inspection and Enforcement
United States Nuclear Regulatory Commission
Washington, D.C. 20555

S. K. Chaudhary, USNRC Resident Inspector

8406050503 840529
PDR ADOCK 05000352
Q PDR

COMMONWEALTH OF PENNSYLVANIA:

COUNTY OF PHILADELPHIA :

ss.

JOHN S. KEMPER, being first duly sworn, deposes and says;

That he is Vice President of Philadelphia Electric Company,
the holder of Construction Permit CPPR-106 for Limerick Generating
Station Unit 1; that he has read the foregoing Response to Inspection
Report No. 50-352/83-12 and knows the contents thereof; and that the
statements and matters set forth therein are true and correct to the
best of his knowledge, information and belief.

John S. Kemper

Subscribed and sworn to
before me this 6th day
of March 1984.

Patricia D. Scholl

PATRICIA D. SCHOLL
Notary Public, Philadelphia, Philadelphia Co.
My Commission Expires February 10, 1986

ATTACHMENT I

RESPONSE TO APPENDIX A

VIOLATION

10CFR50, Appendix B, Criterion IV, requires that measures be established to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality, are suitably included or referenced in the documents for procurement of materials and equipment.....Bechtel Power Corporation drawing E-1412 and their electrical training program, defines the accept/reject workmanship standards to be used for wiring of safety-related electrical equipment at this site.

Contrary to the above, as of September 14, 1983, the MCC Powers Instrumentation Cabinets internal wiring did not have adequate service loops; terminals were not installed back-to-back and terminals exceeded bend limits.

Bechtel's General Project Requirements (G-12) for Standard Instruments, Controls, and Local Control Boards which was part of the MCC Powers Contract, did not adequately specify workmanship details.

RESPONSE

As stated in the subject Notice of Violation, 10CFR50, Appendix B, Criterion IV, requires that measures be established to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are suitably included or referenced in the documents for procurement of materials and equipment (emphasis added). In compliance with this requirement, Specification 8031-G-12, General Project Requirements for Standard Instruments, Controls, and Local Control Boards Supplied With Station Equipment, was invoked on purchase order 8031-M-66 with MCC Powers for HVAC local control stations. Section G12.11 of this specification provides detailed requirements for the electrical design, materials and workmanship which are necessary to assure the high quality of the panels built for the Limerick Generating Station.

The requirements of Section G12.11 of Specification 8031-G-12 were compiled based on the engineering and construction experience of both Philadelphia Electric Company and Bechtel Power Corporation. These requirements cover such areas as wiring workmanship, wire type, terminal block type and installation, grounding, lighting, receptacles, ventilation and cooling, power supply, internal wiring separation, wire flame retardance, wire ampacity and wire identification. These existing requirements in Specification 8031-G-12 adequately address the aspects of control panel construction which directly affect quality.

The subject Notice of Violation listed the following three conditions which are not specifically addressed in Specification 8031-G-12:

Inadequate service loops

Terminals not installed back to back

Terminals exceeded bend limits

These conditions are not specifically addressed in Specification 8031-G-12 because they do not affect the quality of the panels. This assertion is based on the following:

1. Service loops are provided strictly for convenience to allow easy removal of panel mounted components. The presence or lack of service loops has no effect on the quality or safety function of the panel.
2. Specification 8031-G-12 allows a maximum of two terminal lugs to be terminated under a common screw. It does not require that the lugs be terminated back to back because this configuration does not provide any added reliability, or circuit integrity over any other configuration of lug attachment to terminal blocks.
3. Maximum bending limits of control terminal lugs are not specified in Specification 8031-G-12 because our experience has shown that lug integrity and current carrying capability are not affected by the degree of the bend in the lug barrel.

The subject Notice of Violation states that Bechtel Power Corporation drawing 8031-E-1412, Wire and Cable Notes, Symbols and Details defines the workmanship standards to be used for wiring at Limerick. While this is partially correct, it should be noted that E-1412 applies only to the installation and construction work that takes place at Limerick by the Bechtel crafts. The requirements of E-1412 which are appropriate for vendor-supplied internal panel wiring are contained in Specification 8031-G-12. As the fabrication and modification work on the HVAC control panels was performed under the 8031-M-66 purchase order, Specification 8031-G-12 governed this work and not drawing 8031-E-1412.

It should be noted that drawing 8031-E-1412 does not contain any requirements concerning the three conditions discussed above. Confusion over this point may be attributable to Bechtel QC site personnel providing the USNRC Inspector with a Bechtel Training Manual. This manual, Training Manual TS-40, Electrical Commodities and Inspection Guidelines, is used by the Bechtel Procurement Supplier Quality Department as an aid for training shop inspectors. The preface of this manual clearly states that the material is not intended to increase the scope of inspection or supercede any specific requirements of the procurement documents. This manual is not included in any of the procurement documents for the Limerick Project, consequently, its contents cannot be used as inspection acceptance or rejection criteria.

To provide added assurance of the quality of the workmanship in the Class 1E HVAC panels supplied by MCC Powers, we have completed a 100% inspection of the panel internals. Several minor discrepancies were found and corrected.

Philadelphia Electric has evaluated the NRC concern on this matter and believes the enclosed information resolves the item.