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VICE-PRESIDENT
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January 6, 1988

United States Nuclear Regulatory Commission
Washington, DC 20555

Attention: Document Control Desk

Subject: USNRC Region I Letter dated December 7, 1987

Re: Site Inspection of October 12, 1987 to November 15, 1987
Inspection Report No. 50-353/87-14
Limerick Generating Station, Unit 2

File: QUAL 1-2-2 (353/87-14)

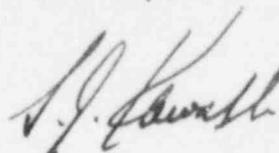
Gentlemen:

In response to the subject letter regarding the item identified during the subject inspection of construction activities authorized by NRC License No. CPPR-107, we transmit herewith the following:

Attachment I - Response to Appendix A

Should you have any questions concerning these items, we would be pleased to discuss them with you.

Sincerely,



JMC/mep

Attachment

Copy to: United States Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

R. Gramm, USNRC Resident Inspector

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Attachment I

Response to Appendix A

Violation

As a result of the inspection conducted on October 12, 1987 to November 15, 1987, and in accordance with 10CFR21, Appendix C (Enforcement Policy 1987), the following violation was identified.

10CFR50, Appendix B, Criterion III requires that measures shall be established to assure that regulatory requirements and the design basis specified in the license application are correctly translated into specifications and drawings. The Limerick Construction Quality Assurance Program Appendix D-6.2 specifies that Final Safety Analysis Report requirements will be translated into appropriate engineering specifications, drawings and purchase orders. The Limerick Final Safety Analysis Report Section 3.2.2d states that field installed ANSI B31.1 emergency diesel generator auxiliary piping will be procured as ASME material, that welds greater than two inches diameter will be radiographed and that pneumatic tests will be performed at 1.25 times the design pressure.

Contrary to the above, on November 4, 1987, the 26 inch diameter emergency diesel generator air intake piping depicted on isometric JBD-461-2 was installed as non-ASME material, the welds had not been radiographed and pneumatic tests had not been performed on the piping. These supplementary FSAR requirements had not been incorporated in the applicable piping design and installation specifications P-300, P-301-2, P-305 or P-323.

This is a Severity Level V Violation (Supplement II).

Response

PECo agrees with the violation as stated in the Inspection Report.

FSAR Section 3.2.2d provides the basis for classification of the off-skid portions of the diesel generator auxiliary systems which were not originally designed to ASME Section III, Class 3 as Quality Group C equivalent (see Regulatory Guide 1.26) by imposing certain supplementary requirements. These included procuring ASME materials, examining all pipe welds greater than 2 inches by radiography, and pneumatic testing all piping to 1.25 times the design pressure. This section was included in the FSAR in response to NRC RAI 430.75 during Unit 1 licensing.

Contrary to these supplementary requirements, ASTM materials were procured for the air intake and exhaust piping, welds on the air intake (26" JBD-361) and exhaust (24" & 30" XRE-1XH) piping were not radiographed, the air intake piping has not been pneumatically tested, and the pneumatic test pressure used for other off-skid piping was 1.2 in lieu of 1.25 times the design pressure. Although the intake and exhaust piping do not completely meet the supplementary requirements in the FSAR, the adequacy of this piping as installed to perform the intended design function is confirmed by the following information:

Although the piping is non-ASME, it was installed to meet Seismic Category I requirements and the materials used are essentially equivalent to ASME material since they were procured to ASTM standards (considered identical if supplier holds a Quality System Certificate (QSC)) with Certified Materials Test Reports (CMTR).

Radiography is typically performed on piping welds to provide additional assurance that the weld performs in a manner equivalent to the base material (piping) being joined. ASME Section III, Class 3 specifies one examination by either RT, MT or PT for circumferential welds, but does not require RT for any pipe sizes. In fact, ASME Section III, Class 3 piping on Limerick is typically examined by MT or PT only. The original design code (ANSI B31.1) used for this piping also does not require NDE for this service and temperature. The piping for the air intake and exhaust lines are rolled and welded pipe. In general, both ASME Section III, Class 3 and ANSI B31.1 apply a weld joint efficiency factor of 0.8 to single butt welded "longitudinal" and "circumferential" welds that have not been radiographed, thereby, reducing the allowable stress by 20%. The maximum stress level calculated for the worst case design basis condition for the exhaust piping was 43% of the allowable. The maximum stress level for the worst case design basis condition for the air intake piping was less than 1% of the allowable. Therefore, significant margin still exists even though radiography was not performed.

Welding was performed with procedures qualified in accordance with ASME Section IX of the Boiler and Pressure Vessel Code, as required by Quality Group C.

The lines were pneumatically tested to minimum of 1.2 times the design pressure which is in accordance with ASME Section III, Class 3 requirements. A minimum test pressure of 1.25 times is required for hydrostatic testing. Testing was not performed on the air intake piping since the design pressure is below atmospheric (-1 psig). The engines operate at nominally -7 in H₂O pressure in this piping. The line has performed satisfactorily during diesel generator engine preoperational testing and subsequent operational tests. Leak tightness has therefore been demonstrated during initial service testing. This type test is acceptable per the original design code (ANSI B31.1) for this piping.

It can therefore be concluded that the piping is essentially equivalent to Quality Group C.

An FSAR Licensing Document Change Notice (LDCN) FS-1239 has been prepared and is being reviewed in accordance with our QA Plan requirements. This LDCN will correct the description of the supplementary requirements for the off-skid portions of the emergency diesel auxiliary systems.

A review of other off-skid portions of the emergency diesel auxiliary systems is being conducted to ensure that all required supplementary FSAR requirements have been met.

A keyword search of the FSAR was performed to find any other places where additional supplementary requirements had been imposed. The only others found were also in Section 3.2. They were for the control room HVAC water chillers, the control structure chilled water piping, and the piping between the inboard and outboard containment isolation valves on the drywell chilled water system. These items are presently under review to ensure that all the required supplementary requirements have been met. A more detailed review is being conducted of Section 3.2 and the NRC Questions to further ensure that no additional supplementary requirements were imposed without being addressed in the design documents.

To assure this will not occur again, the LDCN form is being revised to require that any new commitments contained in an LDCN be listed, the design documents which will implement the new commitments be listed, and it be indicated whether or not the new commitments have been incorporated into the applicable design documents. In addition, the revised LDCN form will formally document the Bechtel re-review of any PECO comments by requiring a Bechtel sign-off. All appropriate personnel will be trained to the use of the revised LDCN form when it is approved.

The above actions are expected to be fully completed by March 31, 1988.