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Docket No. 50-373/374

Mr. Dennis L. Farrar  
Director of Nuclear Licensing  
Commonwealth Edison Company  
P. O. Box 767  
Chicago, Illinois 60690

Dear Mr. Farrar:

Subject: Request for Additional Information of La Salle's Fatigue  
Evaluation Methods

As a result of our continuing review of La Salle, we find that we need additional information in the area of fatigue evaluation methods to resolve our concerns. The enclosure to this letter provides our request for additional information.

Please contact us if you desire further discussion.

Sincerely,

Original signed by

A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing

Enclosure:  
As stated

cc w/enclosure:  
See next page

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SURNAME	ABournia:kw	ASchwencer					
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110 Mechanical Engineering

111.87 In our review of your fatigue evaluation, we were not able to conclude that your fatigue evaluation adequately address the test and analysis programs with respect to fatigue. Specifically, emphasis and details were not placed on the methods (and their justification) for determining the number of design events, number of occurrences per event, the number of cycles for each event and relation of the event cycles to the fatigue cycles used for a particular component. Specific points of concerns are as follows:

- (a) Are all the components undergoing this fatigue evaluation properly included in the dynamic analysis establishing the total number of fatigue cycles in each of the three frequency ranges?
- (b) What is the relation of cycles attributed to the various dynamic events to the fatigue cycles for a specific component?
- (c) What is the justification for not including events which have the number of equivalent cycles "not defined" in the evaluation?
- (d) What is meant by testing "representative" components for fatigue?
- (e) What load combinations, such as seismic plus hydrodynamic events, are included? By what method(s) will they be combined? What is the justification for these combinations and the methodology used?
- (f) The peak redistribution factor is based on a 4.3 exponent from Appendix II of Section III of the ASME Code. From this Appendix and Table I-9.1 of the Code, it can be seen that this exponent should be used only where the number of test cycles is in excess of  $10^4$ . At high stress levels (and consequently low cycles), this exponent does not apply. The peak redistribution factor should be based on the stresses present in the individual component, which can in turn be related to the appropriate fatigue curve for the material. The use of the 4.3 exponent for all materials for all stress levels has not been justified.

Justification of methods referencing internal reports or memoranda should include such data in the submittal package. If referenced material has been previously submitted, please reference the report number and its submittal date to us.

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La Salle

Mr. Dennis L. Farrar  
Director of Nuclear Licensing  
Commonwealth Edison Company  
P. O. Box 767  
Chicago, Illinois 60690

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