



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

November 21, 1989

Docket File

Docket No. 50-206

Mr. Harold B. Ray
Vice President
Southern California Edison Company
Irvine Operations Center
23 Parker
Irvine, California 92718

Dear Mr. Ray:

SUBJECT: TDI DIESEL CRANKSHAFT CRACKING PROBLEM, SAN ONOFRE NUCLEAR
GENERATING STATION, UNIT NO. 1 (TAC NO. 65087)

- References:
1. SCE letter dated January 13, 1989, Transmitting Failure Analysis Associates' Report FaAA-84-12-14 Revision 1.0, titled Evaluation of Transient Conditions on Emergency Diesel Generator Crankshafts at San Onofre Nuclear Generating Station Unit 1.
 2. SCE letter dated May 31, 1989, Subject: Transient Response of Emergency Diesel Generators.
 3. SCE letter dated June 19, 1989, Subject: Requests that Engine Start-Stop Cycles not be Counted if Engine Speed does not Exceed 200 RPM.

We have completed our review of your submittals (References 1, 2 and 3) regarding diesel generator crankshaft crack propagation. Our safety evaluation (SE) is enclosed for your information.

Based on our review, we have concluded that you must either (1) replace your diesel engine crankshafts with a design that is not susceptible to cracking or (2) demonstrate that your eddy current inspection technique is capable of detecting 10 mil deep flaws with a high degree of confidence. Also, you should review and revise (as appropriate) your diesel generator oil maintenance procedures to assure that oil quality is properly maintained and impurities in the oil do not exist which could contribute to crack initiation and propagation. Additionally, we have concluded that diesel engine start-stop cycles with engine speeds maintained less than 200 rpm may be excluded from the start-stop cycles allowed by License Condition 3.L (1) provided that you can demonstrate that the crankshaft stress levels for this situation remain less than the steady state values.

Currently, License Condition 3.L (1) remains in effect which allows you to load each diesel generator to 6000 KW for up to 50 start-stop cycles on each

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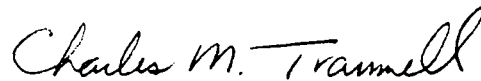
engine or until the end of Cycle 10, whichever comes first. Your resolution of the remaining items (discussed above) should include consideration to amend License Condition 3.L as appropriate. You may want to consider including any remaining requirements and restrictions relative to the diesel engines in the appropriate limiting conditions for operation and surveillance requirements, thereby eliminating the need for a specific license condition.

Please provide your submittal addressing the matter of license condition requirements, along with your resolution of the remaining technical issues, within 90 days of your receipt of this letter.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under Pub. L. 96-511.

Please contact us if you should have any questions regarding this request.

Sincerely,



Charles M. Trammell, Senior Project Manager
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosure: Safety Evaluation

cc: w/enclosure
See next page

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original signed by
Charles M. Trammell, Senior Project Manager
Project Directorate V
Division of Reactor Projects - III,
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Office of Nuclear Reactor Regulation

Enclosure: Safety Evaluation

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engine or until the end of Cycle 10, whichever comes first. Your resolution of the remaining items (discussed above) should include consideration to amend License Condition 3.L as appropriate. We would prefer that you include any remaining requirements and restrictions relative to the diesel engines in the appropriate limiting conditions for operation and surveillance requirements, thereby eliminating the need for a specific license condition.

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Mr. Harold B. Ray
Southern California Edison Company

San Onofre Nuclear Generating
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