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February 22, 1989

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Subject: Docket No. 50-206
Supplement to Amendment Application No. 156
San Onofre Nuclear Generating Station
Unit 1

By letter dated November 11, 1988, SCE submitted Amendment Application No. 156 regarding increasing the diesel generator loading limit up to the nameplate rating of 6000 KW. As a result of a meeting between the NRC and SCE on January 17, 1989 regarding this amendment application, the following is necessary for NRC approval of Amendment Application No. 156:

1. A maximum load limit for surveillance testing as required by the technical specifications,

2. License Conditions in resolution to TDI diesel generator issues, including reporting requirements if cracks are identified during crankshaft and engine block inspections, and

3. A description of the contingency plan describing actions that will be taken if cracks are identified in the diesel generator crankshafts.

Items 1 and 2 are included in Enclosure 1 to this letter which provides a supplement to Amendment Application No. 156. Regarding Item 3, the following discussion provides the requested information.

As provided in Enclosure 1, SCE is incorporating into the Provisional Operating License reporting requirements for crankshaft inspections, should any cracks be detected. Subsequent to these reports, SCE will provide results of an analysis to determine if the new cracks and the operating history under which they developed are consistent with the predictions of the analysis documented in FaAA-84-12-14 (April 1985). In addition, a commitment to remove the cracks prior to returning the engine to operable status and reanalyze the adequacy of the repaired crankshaft as a basis for continued operation will be provided.

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If you have any questions or require additional information, please let me know.

Subscribed on this 22nd day of February, 1989.

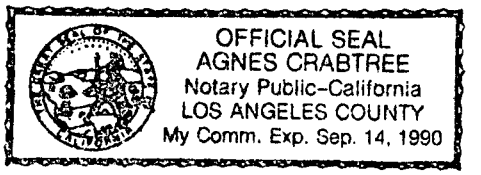
Respectfully submitted,

SOUTHERN CALIFORNIA EDISON COMPANY

By: Kenneth P Baskin
Kenneth P. Baskin
Vice President

Subscribed and sworn to before me this 22nd day of February, 1989,

Agnes Crabtree
Notary Public in and for the County of Los Angeles, State of California



cc: J. B. Martin, Regional Administrator, NRC Region V
F. R. Huey, NRC Senior Resident Inspector, San Onofre Units 1, 2 and 3
J. H. Hickman, California Department of Health Services

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of SOUTHERN CALIFORNIA EDISON COMPANY and SAN DIEGO GAS & ELECTRIC COMPANY San Onofre Nuclear Generating Station Unit No. 1	)))))	Docket No. 50-206

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Supplement to Amendment Application No. 156 was served on the following by deposit in the United States Mail, postage prepaid, on the 22nd day of February, 1989.

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James A. Beoletto

Enclosure 1

Description of Supplemental Changes to Proposed
Change No. 197 to the Technical Specifications
Provisional Operating License No. DPR-13

The following is a supplemental request to revise Section 3.L, "Diesel Generators" of the Provisional Operating License and Section 4.4 "Emergency Power System Periodic Testing" of the Appendix A Technical Specifications for the San Onofre Nuclear Generating Station, Unit 1 (SONGS 1).

DESCRIPTION OF SUPPLEMENTAL CHANGE

Subsequent to SCE's submittal of Proposed Change No. 197 (PCN 197) by letter dated November 11, 1988, additional changes to support increasing the diesel generator loading limit were requested by the NRC. In accordance with this request, the following Provisional Operating License change to revise license conditions applicable to the standby diesel generators, and a Technical Specification change to incorporate an upper load limit during surveillance testing are proposed in addition to those proposed by PCN 197:

1. Revise Section 3.L, "Diesel Generators" of the Provisional Operating License to remove license conditions that have been completed by SCE, incorporate new license conditions, and modify existing license conditions. The status of the existing diesel generator license conditions (LC) and proposed changes to these conditions are as follows:

   3.L(1) - This license condition was a one time inspection of selected main journals for cracks. These journals have been inspected and found free of cracks. Therefore, this license condition may be deleted. In place of this license condition, a new condition to enhance the reliability and operability of the diesel generators will be added. This will be achieved by implementing an NRC approved maintenance and surveillance program. This new license condition constitutes additional requirements which will not adversely impact plant safety.

   3.L(2) - Journal numbers 8 through 12 on both diesel generators have been inspected during the present refueling outage and found free of cracks. Based on this favorable finding and the additional factors listed below, this license condition will be revised to require inspection of only journal numbers 9 and 10 at each refueling in lieu of journal numbers 8 through 12.

   - Journal numbers 9 and 10 are the most highly stressed journals, per plant specific inspection experience as well as the analyses conducted by Failure Analysis Associates. A potential for new cracks will therefore manifest itself first in journal numbers 9 and 10.

- SCE is implementing the "slow start" requirement for diesel testing which reduces the potential for crankshaft cracking.

- Main journal oil holes 4 through 12 will be inspected at five year intervals in accordance with Owners Group site-specific maintenance matrix.

- License Condition 3.L(3) will be revised to incorporate an additional requirement that any cracks found be reported to the NRC within 24 hours and the affected engine remain inoperable until the NRC has approved its return to service.

3.L.(3) - All piston skirts have been replaced with type AE piston skirts. Therefore, this license condition has been satisfied and may be deleted. A new license condition 3.L(3) is proposed which requires periodic visual inspections of one of the cylinder blocks that contains degenerate Widmanstaetten graphite and requires that "stud-to-stud" cracks or "stud-to-end" cracks if found be reported to the NRC within 24 hours. The visual inspections would be required whenever the diesel generator is operated in excess of 4375 KW for one hour or more; 4375 KW is one half of the maximum engine rated load of 8750 KW as assumed by Failure Analysis Associates in their analysis.

3.L(4) - This license condition remains unchanged.

3.L(5) - This license condition was implemented to ensure that confirmatory load tests of the major loads on the diesel generators were completed. As documented in SCE to NRC letters dated December 29, 1988 and January 20, 1989, the requirements of this license condition were completed and, therefore, it will be deleted.

3.L(6) - This License condition required evaluation and recertification of the charging pump motors, and replacement if necessary. The evaluation and recertification of the charging pump motors was completed as documented in SCE to NRC letters dated September 22, 1988 and December 29, 1988. Per these references, this work has been completed and, therefore, the license condition will be deleted.

2. Revise Specification 4.4 "Emergency Power System Periodic Testing" to include a maximum value for loading of the diesel generators during surveillance testing. As proposed by PCN 197, the diesel generator loading limit will be increased to 6000 KW. Monthly surveillance testing at $\geq$ 6000 KW was proposed by PCN 197. This supplemental change will require monthly surveillance testing at 6000 KW $\pm$ 5% (greater than 5700 KW but less than 6300 KW).

EXISTING LICENSE CONDITIONS AND TECHNICAL SPECIFICATION

See Attachment 1.

PROPOSED LICENSE CONDITIONS AND TECHNICAL SPECIFICATION

See Attachment 2.

SIGNIFICANT HAZARDS CONSIDERATION ANALYSIS

These proposed revisions to PCN 197 to revise diesel generator license conditions and incorporate a maximum value for surveillance testing of the diesel generators are being submitted at the request of the NRC. The proposed license conditions are based on resolution of issues regarding TDI diesel generators. These license conditions include deleting conditions that have been completed, adding new conditions that require inspection and reporting in accordance with recent discussions with the NRC staff, and revising one condition to require refueling interval inspection of only the highest stressed journals. With the exception of inspecting only the highest stressed journals, these changes to the license conditions are consistent with the NRC staff requests. For the reasons stated in the description of the changes to License Condition 3.L(2), inspection of only the highest stressed journals will provide adequate indication of crankshaft degradation due to severe stresses and allow corrective actions to be taken in a timely manner.

The NRC request to incorporate a maximum value for surveillance testing of the diesel generators was made during a meeting between SCE and NRC staff members held on January 17, 1989 to discuss issues relating to PCN 197. The proposed load limit for surveillance testing of 6000 kW $\pm$ 5% is based on the 6000 kW nameplate rating of the generator with a 5% allowance to allow load fluctuations during testing. The upper limit of this proposed surveillance band (6300 kW) is conservatively less than the maximum value (6600 KW) at which the generator has been tested for short durations.

As discussed in the Technical Evaluation Report providing the Review and Evaluation of Transamerica Delaval, Inc., Diesel Engine Reliability and Operability - San Onofre Nuclear Generating Station Unit 1, prepared by Pacific Northwest Laboratory (PNL-5304) dated November 1984, onsite preoperational tests of both diesel generators included no load tests, a 4 hour run at 100% load, and a 2 hour run at 110% load (6600 KW). In addition, special function tests have been performed following major engine modifications and inspections. After the AF pistons were modified in 1982, both engines were subjected to special tests consisting of a 24 hour, full load run (22 hours at 6000 kW and 2 hours at 6600 kW). In 1984, this test was repeated following the sampling inspection. The results of this testing were satisfactory as discussed in PNL-5304. Based on these results, it is concluded that the proposed surveillance testing band will adequately confirm the ability of the diesel generators to satisfy emergency service demands while not introducing unacceptable testing conditions.

SAFETY AND SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Based on the Safety Evaluation provided in Amendment Application No. 156 and the information provided above, it is concluded that: (1) the supplemental change to Proposed Change No. 197 does not involve a significant hazards consideration as defined by 10CFR50.92; and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change.

Attachment 1 - Existing License Conditions and Technical Specifications
Attachment 2 - Supplemental Changes to Proposed Change No. 197

Attachment 1

Existing License Conditions and

Technical Specifications