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April 29, 1985

Director, Office of Nuclear Reactor Regulation
Attention: Mr. H. L. Thompson, Jr., Director
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Subject: Docket No. 50-206
NRC Generic Letter 84-15, Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability
San Onofre Nuclear Generating Station
Unit 1

References: (A) Letter M. O. Medford (SCE) to D. G. Eisenhut (NRC), dated October 26, 1984, NRC Generic Letter 84-15

NRC's Generic Letter 84-15, dated July 2, 1984, contained several recommendations to nuclear utilities for attaining and maintaining high reliability of the emergency diesel generators. By Reference A, Southern California Edison (SCE) submitted a partial response to these recommendations. Reference A stated that a reliability improvement program for the San Onofre Unit 1 emergency diesel generators would be developed by April 1, 1985, and then a comparison of this program with NRC Generic Letter 84-15 would be prepared and forwarded to the NRC.

This is to inform you that a report describing the features of our reliability improvement program has been developed and issued for implementation. Enclosure I to this letter compares that program with the example provided in Enclosure 3 of NRC Generic Letter 84-15. Effective April 1, 1985, all diesel start attempts and their results are monitored and logged in accordance with Revision 1 of Regulatory Guide 1.108.

This transmittal completes our response to Generic Letter 84-15.

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If you have any questions, please let me know.

Subscribed on this 29th day of April, 1985.

Respectfully submitted,

SOUTHERN CALIFORNIA EDISON COMPANY

By: M. O. Medford
M. O. Medford
Manager, Nuclear Licensing

Subscribed and sworn to before me this 29th day of April 1985.

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

OFFICIAL SEAL
AGNES CRABTREE
NOTARY PUBLIC — CALIFORNIA
PRINCIPAL OFFICE IN
LOS ANGELES COUNTY
My Commission Expires Aug. 27, 1986

My Commission Expires: Aug 27, 1986

Enclosure I

cc: USNRC Document Control Desk (Washington, D.C. 20555)

F. R. Huey (USNRC Senior Resident Inspector, Units 1, 2 and 3)

Enclosure I

Comparison of San Onofre Unit 1 Reliability Improvement Program With Enclosure 3 of NRC's Generic Letter 84-15

	NRC's Example Performance Specification		San Onofre Unit 1 Reliability Program
1. Reliability Goals	The staff would like plants to maintain diesel generator reliability at or above specified levels, with .95 as the minimum desired level.		Reference: Letter M.O. Medford (SCE) to D.M. Crutchfield (NRC) dated June 29, 1984, Return to Service Requirements, Enclosure 1 Enclosure 1 to the referenced letter reported a cumulative achieved reliability of 98.7% and 99.0% for diesel generator #1 and #2 respectively for the period April 1977 to April 1, 1984. However, the method used in calculating these numbers was not developed to conform to the definitions and criteria of Reg. Guide 1.108. Effective April 1, 1985, San Onofre Unit 1 has implemented Reg. Guide 1.108, positions C.2.e. and C.3.a, and will attempt to maintain a reliability level of $\geq$.95 on each diesel, as calculated from the last 100 valid tests at any time.
2. Reliability Level Remedial Actions	Reliability (R) R $\geq$.95	Action 31 day surveillance interval. Increase testing to once every 7 days for 2 failures in the past 20 tests.	References: (1) Letter M. O. Medford (SCE) to to J. A. Zwolinski (NRC), dated March 8, 1985, Revised Maintenance and Surveillance Program

NRC's Example Performance Specification		San Onofre Unit 1 Reliability Program
.95 >R ≥.90	31 day surveillance interval. Increase testing to once every 7 days for 2 failures in the past 20 tests.	(2) Letter K. P. Baskin (SCE) to H. R. Denton (NRC), dated February 14, 1985, Amendment Application No. 126
R <.90	Disqualify diesel generator. Requalify by 14 consecutive starts within 75 days of failure.	By Reference 1, SCE committed to extensive maintenance and surveillance (M&S) program designed to provide highly reliable diesel generator performance during future plant life. SCE considers that the full implementation of this M&S program, combined with root cause determinations of all observed diesel generator failures and implementation of appropriate corrective actions will assure that the reliability level of ≥ 0.95 is met. Additionally, by Reference (2), SCE submitted proposed Technical Specification changes to the NRC to limit engine loading t 4500 kw ± 5% (versus 6000 kw nameplate rating) and to restrict the application of fast engine test starts to the refueling interval SISLOP test only.

	NRC's Example Performance Specification	San Onofre Unit 1 Reliability Program
		In the course of work performed by the Transamerica Delaval (TDI) diesel generator owners group to assess the reliability of TDI diesel engines, it has been determined that engine starts (whether fast or slow) and engine coastdowns both subject the diesel crankshaft to undesirable stress concentrations. For this reason, accelerated testing is not preferred as a method of requalifying the diesels after a failed test. However, all diesel generator failures will be evaluated, and corrective actions implemented. Requalification may include accelerated testing, depending on the circumstances of the failures.
3. Surveillance Test Frequency	a.) Normal surveillance frequency - in accordance with manufacturer's recommendation, but at least once per 31 days. b.) Accelerated frequency - with 2 or more failures in last 20 tests, increase frequency to once a week.	The normal surveillance frequency is at least once per 31 days. Accelerated testing frequency will be as discussed in items 2 and 4.
4. Remedial Action Criteria	If the number of failures is greater than or equal to 3 in 20 or 6 in 100, prepare and maintain a report on the diesel generator reliability improvement program.	Remedial action criteria are as described in item 2 above. In addition, if the reliability level drops to < .95 (as calculated from the last 100 surveillance tests), the subject failures will be evaluated further. Corrective actions will be implemented based on the type and circumstances of the failure and may include accelerated testing. Additionally, the contents of the existing diesel generator reliability program will be reviewed for possible revision.

	NRC's Example Performance Specification	San Onofre Unit 1 Reliability Program
5. Requalification Criteria	With 5 or more failures in 20 tests or 11 or more failures in 100 tests, the diesel generator is subjected to a requalification program, requiring 14 consecutive tests without failure.	Requalification testing is discussed in item 2.
6. Failure to requalify diesel	The diesel generator is declared inoperable and action statement in the plant Technical Specification is followed.	The diesel generator is declared inoperable and action statement in the plant Technical Specification is followed.
7. DG inoperability limits	The staff determined that the allowable out-of-service period for a DG should be greater than the current 72 hour Tech. Spec. limit, while placing a yearly limit on cumulative out-of-service hours for planned and unplanned maintenance. Licensees may propose total cumulative outage time along with the basis for time chosen.	SCE may in the future submit a proposed Technical Specification change to increase the allowable out-of-service period.
8. Valid Demands and Failures	Valid demands and failures used in the above paragraphs should be determined in accordance with Reg. Guide 1.108, position c.2.e.	Valid demands and failures used in the above paragraphs will be determined in accordance with Reg. Guide 1.108, position c.2.e.
9. Reliability Records	Maintain records in accordance with Reg. Guide 1.108, position c.3.a. Submit a yearly data report on diesel generator reliability to the NRC.	Maintain records in accordance with Reg. Guide 1.108, position C.3.a. The reliability records maintained onsite will be available at any time for NRC audit.

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