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November 2, 1987

U.S. Nuclear Regulatory Commisssion
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The attached License Amendment Request, LAR 87-09, was mailed to you on Friday, October 30, 1987. The required check for $150 was inadvertently left out of the mailing. The check is enclosed in the attached LAR.

Thank you,

PG&E Nuclear Regulatory Affairs

w/ check $150 # 0963022

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PACIFIC GAS AND ELECTRIC COMPANY

PG&E

77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

JAMES D. SHIFFER
VICE PRESIDENT
NUCLEAR POWER GENERATION

October 30, 1987

PG&E Letter No.: DCL-87-259

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

Re: Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
License Amendment Request 87-09, Exemption to Technical Specification 3.8.1.1, Electrical Power Systems, A.C. Sources

Gentlemen:

Enclosed is an application for amendment to Facility Operating License Nos. DPR-80 and DPR-82. The enclosed License Amendment Request (LAR) proposes an exemption to Technical Specification 3.8.1.1. The exemption would allow diesel generator 1-3, the swing diesel generator, to be out of service for 14 days to perform the preventive maintenance and testing required by Surveillance Requirement 4.8.1.1.2b. during the Unit 1 second refueling outage. The Unit 1 second refueling outage is presently scheduled to begin in March 1988.

This LAR is similar to LAR 85-15, which proposed a 10 day allowed outage time for diesel generator 1-3 preventive maintenance and testing during the Unit 1 first refueling outage. The NRC approved this LAR by issuing License Amendment No. 9 for Unit 1 and License Amendment No. 7 for Unit 2.

Pursuant to 10 CFR 170.12(c), an application fee of $150 is enclosed.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,

Enclosure

cc J. B. Martin
J. S. McGurk
M. M. Mendonca
P. P. Narbut
B. Norton
B. H. Vogler
CPUC
Diablo Distribution

A001
1 P.

1741S/0052K/RLJ/2054

ENCLOSURE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	Docket No. 50-275
PACIFIC GAS AND ELECTRIC COMPANY	Facility Operating License No. DPR-80
Diablo Canyon Power Plant Units 1 and 2	Docket No. 50-323
	Facility Operating License No. DPR-82
	License Amendment Request No. 87-09

Pursuant to 10 CFR 50.90, Pacific Gas and Electric Company (PG&E) hereby applies to amend its Diablo Canyon Power Plant (DCPP) Facility Operating License Nos. DPR-80 and DPR-82.

The proposed change amends the Units 1 and 2 Technical Specifications (Appendix A of the Licenses) regarding Technical Specification 3.8.1.1 for the second refueling outage of Unit 1.

Information on the proposed change is provided in Attachments A through C.

This change has been reviewed and is considered not to involve a significant hazards consideration as defined in 10 CFR 50.92 or an unreviewed environmental question. Further, there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change.

Subscribed in San Francisco, California, this 30th day of October 1987.

Respectfully submitted,

Pacific Gas and Electric Company

By _____
J. D. Shiffer
Vice President
Nuclear Power Generation

Howard V. Golub
Richard F. Locke
Attorneys for Pacific
Gas and Electric Company

By _____
Richard F. Locke

Subscribed and sworn to before me
this 30th day of October, 1987.

_____ (SEAL)
Nancy J. Lemaster, Notary Public in
and for the City and County of
San Francisco, State of California

My commission expires April 2, 1990

OFFICIAL SEAL
NANCY J. LEMASTER
NOTARY PUBLIC - CALIFORNIA
CITY & COUNTY OF SAN FRANCISCO
My Commission Expires April 27, 1990

1741S/0052K

~~8711030268~~ 23 p.

Attachment A

TECHNICAL SPECIFICATION 3.8.1.1

INCREASING THE ALLOWED OUTAGE TIME OF DIESEL GENERATOR 1-3 FOR PREVENTIVE MAINTENANCE

A. DESCRIPTION OF AMENDMENT REQUEST

This license amendment request proposes an exemption from the 72 hour shutdown requirement of Technical Specification 3.8.1.1 when one diesel generator is out of service to perform the preventive maintenance and inspection required by Surveillance Requirement 4.8.1.1.2b. on diesel generator 1-3 (the swing diesel generator). The exemption would allow diesel generator 1-3 to be inoperable for 14 days during the Unit 1 second refueling outage to perform Surveillance Requirement 4.8.1.1.2b. The exemption requires that Surveillance Requirements 4.8.1.1.1a. and 4.8.1.1.2a.4. be performed within 48 hours prior to removal of diesel generator 1-3 from service and that the remaining diesel generators on Unit 2 be verified operable at least once per 24 hours.

The change to the Technical Specifications of Operating License Nos. DPR-80 and DPR-82 is noted in the marked-up copy of the applicable Technical Specification (Attachment C).

B. BACKGROUND

The background information provided in this LAR was also provided in LAR 85-15 (PG&E Letter No. DCL-85-375, dated December 26, 1985). The information is included to aid the NRC in the review of the request and has been updated since the previous submittal.

The Diablo Canyon Power Plant (DCPP) electrical power system consists of an offsite system and an onsite system. The offsite power system is comprised of a 230 kV transmission system and a 500 kV transmission system. The onsite power system consists of a distribution system normally supplied by the offsite power system. In the event of a loss of offsite power, the onsite power system is supplied by five emergency diesel generators. A description and discussion of reliability for the offsite and onsite power system follows.

DCPP OFFSITE POWER SYSTEM

Description

DCPP is connected to the 230 kV transmission system for startup and standby power. The two incoming 230 kV transmission lines, one from the nearby Morro Bay Power Plant, about 10 miles away, and the other from the Mesa Substation, feed a 230 kV switchyard having three 230 kV circuit breakers, one for each line and one for the standby startup transformers. The single line diagram of the 230 kV system to Units 1 and 2 is shown on Figure 8.2-1 of the FSAR Update. (All

referenced FSAR Update figures are included in Attachment B.) Figure 8.2-2 of the FSAR Update shows the offsite interconnections. Figure 8.2-3 of the FSAR Update shows the general arrangements of the 230 kV and 500 kV switchyards.

Offsite power to the plant can also be provided from the 500 kV system when the main generator is not in operation. The 500 kV line is a backup for the 230 kV plant power supply via the main transformer to the unit auxiliary transformer. Figure 8.1-1 of the FSAR Update (Plant Single Line Diagram) shows the three 500 kV line terminals and the interconnections to the plant auxiliaries. Figure 8.2-5 of the FSAR Update shows the arrangement of the 500 kV switchgear.

Reliability

The 230 kV switchyard of the Morro Bay Power Plant is a reliable source of power with four generating units and two 230 kV double circuit tower lines from Midway and Gates substations connected to the 230 kV switchyard buses. The switchyard contains a 230 kV double bus arrangement and has bus paralleling and sectionalizing facilities to obtain a high degree of service continuity.

In addition to the 230 kV offsite power source, the 500 kV transmission system can be used as an alternate source. The main generator can be disconnected from the main and auxiliary transformers after the two 500 kV breakers are opened. The main and auxiliary transformers can then be restored to service as a source of power to the plant.

In addition to the highly reliable transmission system, the weather conditions are not severe in the vicinity of Diablo Canyon. Section 2.3.1.3 of the FSAR Update states that the annual mean number of days with severe weather conditions, such as tornados and ice storms, is zero at West Coast sites.

Because of the number of offsite circuits to DCPP and the lack of severe weather conditions, the DCPP offsite power system is highly reliable.

ONSITE POWER SYSTEM

Description

The DCPP onsite power system consists of five diesel generators. Two diesel generators are dedicated to Unit 1 and two diesel generators are dedicated to Unit 2, with the fifth diesel generator (swing) shared between both units. Each diesel generator consists of a self-contained diesel engine directly connected to an alternating current generator. The diesel generator units have been supplied by ALCO Engine Division of White Industrial Power, Inc. Each diesel generator supplies a vital bus, with the swing diesel

generator supplying either a Unit 1 or 2 vital bus. Additional information about the diesel generators is contained in Section 8.3.1.1 of the FSAR Update.

Diesel Generator Reliability

The DCPP Diesel Generator Reliability Improvement Program is described in this section. Based on the results of this program, PG&E has been successful in achieving a high diesel generator reliability. The reliability history of each DCPP diesel generator was reviewed to determine the number of valid demands and failures in accordance with the recommendations of Regulatory Guide 1.108. This reliability history is shown below:

DCPP DIESEL GENERATOR RELIABILITY*

Diesel Unit	Number of Valid Tests	Number of Valid Failures	Reliability (%)**
1-1	137	2	98.56
1-2	139	2	98.58
1-3	147	2	98.66
2-1	43	0	100
2-2	48	0	100
Total	514	6	98.85

* Valid tests and failures were determined in accordance with Regulatory Guide 1.108. The results are based on tests performed between October 2, 1981 and August 27, 1987 for diesel generators 1-1, 1-2, and 1-3 and between January 24, 1985 and September 2, 1987 for diesel generators 2-1 and 2-2.

** $\text{Reliability} = \frac{\text{Valid Tests}}{\text{Valid Tests} + \text{Valid Failures}} \times 100$

As indicated in Generic Letter 84-15, the median value of diesel generator reliability at operating nuclear plants is 0.98/demand, with about 75 percent of the diesel generators currently in service having a reliability of 0.95/demand or greater. The DCPP reliability history listed in the table indicates that DCPP diesel generators have an average reliability of 0.988/demand. This is higher than the average diesel generator reliability. This conclusion is also consistent with Electric Power Research Institute report NP-4264, Volume 2, September 1985, "Failures Related to Surveillance Testing of Standby Equipment." NP-4264 concludes from a comparison between manufacturers that the surveillance related failures for the ALCO units are an order of magnitude less than for other manufacturers.

Diesel Generator Reliability Program

The DCPP Diesel Generator Reliability Improvement Program consists of preventive maintenance procedures, personnel training, and use of reliability improvement recommendations.

The purpose of the preventive maintenance program is to minimize the number of diesel generator failures by maintaining the diesels in the best possible condition and thereby increasing diesel generator reliability. The preventive maintenance procedures were developed using ALCO's guidelines "Engine Maintenance Schedule for Standby Engines (MI-11272)." Also, the development of the procedures considered DCPP operating experience. When a diesel failure occurs, an investigation is conducted to determine the cause of the failure. When it is determined that additional preventive maintenance would help prevent recurrence, the maintenance is incorporated into the procedures. Additionally, vendor information on preventive maintenance and surveillance programs and procedures is reviewed for application at DCPP.

Another part of the Diesel Generator Reliability Improvement Program is personnel training. PG&E has sent maintenance personnel and engineers to the manufacturer's training center. Also, personnel are involved in industry diesel generator reliability improvement meetings, such as the EPRI Seminar on Diesel Generator Operations, Maintenance and Testing held in August 1987.

The program also uses industry, NRC, and vendor diesel generator reliability improvement recommendations. For example, after reviewing NUREG/CR-0660 "Enhancement of Onsite Emergency Diesel Generator Reliability," PG&E found many of the recommendations included in this report were already implemented at DCPP, such as prelubing of the diesels and personnel training.

PG&E has also implemented the recommendations of Generic Letter 84-15. Two of the concerns raised in Generic Letter 84-15 were cold fast starting of the diesel generator and excessive testing. The DCPP Technical Specifications were revised to allow gradual acceleration and/or gradual loading of the diesel generators. Cold starting of the diesel generators is not applicable, as the diesels are equipped with lube oil and water jacket heating devices to maintain the oil and water temperatures at levels that permit immediate assumption of load. Also, the Technical Specifications were revised to minimize the number of diesel generator starts.

PG&E has also modified the diesel generators to improve reliability. Two examples of these modifications are the fuel oil priming system and the compressed air filtration and dehumidification system. The fuel oil priming system was added to enhance the starting reliability of the diesel generators. The compressed air filtration and dehumidification system was added to improve reliability of the solenoid valves and air motors by reducing corrosion.

C. JUSTIFICATION

Presently, Technical Specification 3.8.1.1 allows a unit to operate for only three days if one of the diesel generators is inoperable. PG&E has determined that the preventive maintenance, inspection, and acceptance testing required by Surveillance Requirement 4.8.1.1.2b. cannot be completed in three days. PG&E has determined it will take 14 days to perform Surveillance Requirement 4.8.1.1.2b. on diesel generator 1-3. Therefore, an exemption from the 72 hour shutdown requirement for an inoperable diesel, to a 14-day period, is necessary.

The preventive maintenance, inspection, and acceptance testing required for the Unit 1 second refueling outage is similar to that required during the Unit 1 first refueling outage. In order to perform Surveillance Requirement 4.8.1.1.2b. during the first refueling outage, PG&E received an exemption from the NRC (License Amendment No. 9 for Unit 1 and License Amendment No. 7 for Unit 2) that allowed Unit 2 to operate for 10 days with only two operable diesel generators.

The additional 4 days requested for the second refueling outage is to accommodate maintenance on the after cooler and the water pump drive gear that was not performed during the first refueling outage. The additional time is also necessary to accommodate potential problems discovered during maintenance and testing. During the Unit 1 first refueling outage, diesel generator 1-3 was out of service for 9.5 days with no major difficulties encountered. Based on the experience of the first refueling outage and the additional work scope, a 14-day exemption is required.

D. SAFETY EVALUATION

In evaluating the safety aspects of the proposed 14-day outage period, three areas have been considered: (1) reliability of systems and components, (2) operability of systems and components, and (3) probability of concurrent events.

Both of the two dedicated Unit 2 diesel generators (2-1 and 2-2) that will remain operable during the 14-day period when diesel generator 1-3 is out of service are highly reliable, each having a 100 percent reliability. As indicated earlier in this submittal, this is based on 43 and 48 valid tests on each diesel, respectively. Further, the 230 kV and 500 kV switchyards have been shown to provide reliable offsite power sources for both units.

To ensure electrical system operability during the 14-day outage period for diesel 1-3, the following conditions will be met before and during the outage:

1. Unit 1 will be in Mode 5 (Cold Shutdown) or 6 (Refueling) before diesel generator 1-3 can be removed from service.

2. The offsite circuits required by Technical Specification 3.8.1.1 will be verified to be operable by checking correct breaker alignments and indicated power availability.

3. No maintenance will be performed on the other diesels required for unit operation while diesel generator 1-3 is out of service.

4. The remaining diesels needed for Unit 2 operation will be verified operable at least once per 24 hours during the 14-day period. Verification will consist of examining logs or other information to determine if certain components are out of service for maintenance or other reasons.

It is also highly unlikely that an event requiring plant shutdown concurrent with the loss of offsite power and the loss of the two remaining diesel generators would occur during the 14-day period diesel generator 1-3 is out of service.

Based on the above evaluation there is reasonable assurance that the health and safety of the public will not be endangered by extending the allowed outage period for diesel generator 1-3 from the current 3 days to the proposed 14 days in order to perform preventive maintenance.

E. NO SIGNIFICANT HAZARDS EVALUATION

PG&E has evaluated the hazard considerations involved with the proposed amendment focusing on the three standards set forth in 10 CFR 50.92(c) as quoted below:

The Commission may make final determination, pursuant to the procedures in 50.91, that a proposed amendment to an operating license for a facility licensed under 50.21(b) or 50.22 or for a testing facility involves no significant hazards consideration, if operation of the facility in accordance with the proposed amendment would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated; or

2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or

3. Involve a significant reduction in a margin of safety.

The following evaluation is provided for the three categories of the significant hazards consideration standards.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Performing thorough preventive maintenance, inspection, and acceptance testing of the diesel generator in accordance with ALCO recommendations has provided and will continue to provide assurance

that the diesel will perform properly when required. The proposed exemption should serve to enhance the diesel generator reliability and overall plant safety. Because of the number of offsite circuits to DCPP and lack of severe weather conditions, the DCPP offsite power system is highly reliable. The DCPP diesel generator reliability history indicates that average reliability is higher than the industry average. The two Unit 2 dedicated diesel generators that will be operable during the period when preventive maintenance is being performed on the swing diesel have proven highly reliable. Thus, the proposed exemption does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Extending the allowed outage period for diesel generator preventive maintenance and acceptance testing does not necessitate physical alteration of the plant or changes in parameters governing normal plant operation. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated for Diablo Canyon.

3. Does the change involve a significant reduction in a margin of safety?

   The increased outage time for performance of preventive maintenance and testing will maintain reliability of the swing diesel generator. The increased outage time will result in Unit 2 operation for up to 14 days, rather than 3 days, with two operable diesel generators. The high reliability of the two Unit 2 dedicated diesel generators and the additional provisions regarding plant conditions and power systems availability ensure that there is an insignificant reduction in the margin of safety.

F. NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

In conclusion, based on the above evaluation, PG&E submits that the activities associated with this license amendment request satisfy the no significant hazards consideration standards of 10 CFR 50.92(c) and, accordingly, a no significant hazards consideration finding is justified.

G. ENVIRONMENTAL EVALUATION

PG&E has evaluated the proposed change and determined that the change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.

Attachment B

FSAR UPDATE FIGURES