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PG&E Letter DCL-05-098

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555-0001

Docket No. 50-275, OL-DPR-80  
Docket No. 50-323, OL-DPR-82  
Diablo Canyon Units 1 and 2  
License Amendment Request 05-03  
Request for Amendment to Recapture Low-Power Testing Time

Dear Commissioners and Staff:

In accordance with 10 CFR 50.90, enclosed is an application for amendment to Facility Operating License Nos. DPR-80 and DPR-82 for Units 1 and 2 of the Diablo Canyon Power Plant (DCPP), respectively. The enclosed license amendment request (LAR) would revise the expiration dates of the Units 1 and 2 facility-operating licenses to recapture low-power testing time. Specifically, the expiration date of each unit's full-power operating license (FPOL) would be revised to reflect a 40-year term measured from the date of issuance of the FPOL, as permitted by 10 CFR 50.51.

SECY-98-296, "Agency Policy Regarding Licensee Recapture of Low-Power Testing or Shutdown Time for Nuclear Power Plants," dated December 21, 1998, and the associated Commission Voting Record and Staff Requirements Memorandum, dated March 30, 1999, established NRC policy regarding license recapture of low-power testing or shutdown time for nuclear power plants. By establishing this policy, the Commission has acknowledged that recapturing low-power testing time does not involve a significant hazards consideration. The Agency's policy bounds the proposed amendment request since this amendment request is similar to prior license recapture situations as described in SECY-98-296.

Enclosure 1 contains a description of the proposed change, the supporting technical analyses, and the no significant hazards consideration determination. Enclosure 2 contains a markup of the revised portions of the facility operating licenses for Units 1 and 2.

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PG&E has determined that this LAR does not involve a significant hazard consideration as determined per 10 CFR 50.92. Pursuant to 10 CFR 51.22(b), an environmental assessment does not need to be prepared since the proposed change does not involve a significant change in the types or in the amounts of any effluent that may be released offsite, or a significant increase in the individual or cumulative occupational radiation exposure.

The change in this LAR is not required to address an immediate safety concern. PG&E requests approval of this LAR be assigned a medium priority for review and approval and requests that the amendments be issued no later than March 2006. PG&E requests the LAR be made effective upon NRC issuance.

If you have any questions or require additional information, please contact Mr. Terence Grebel at (805) 545-4160.

Sincerely,

David H. Oatley  
*Vice President and General Manager*

tlg/4160

Enclosures

cc: Edgar Bailey, DHS  
Terry W. Jackson  
Bruce S. Mallett  
Diablo Distribution  
cc/enc: Girija S. Shukla

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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

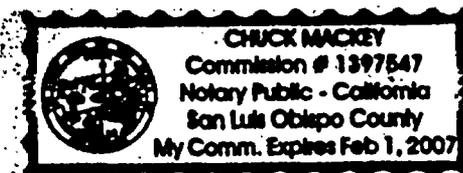
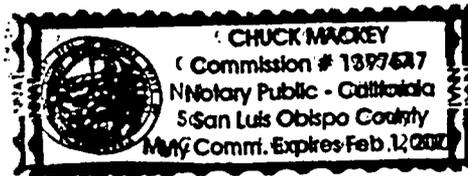
AFFIDAVIT

David H. Oatley, of lawful age, first being duly sworn upon oath says that he is Vice President and General Manager of Pacific Gas and Electric Company; that he has executed license amendment request LAR 05-03 on behalf of said company with full power and authority to do so; that he is familiar with the content thereof; and that the facts stated therein are true and correct to the best of his knowledge, information, and belief.



David H. Oatley  
Vice President and General Manager

Subscribed and sworn to before me this 23rd day of August , by David H. Oatley, personally known to me or proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

  
Notary Public  
County of San Luis Obispo  
State of California

## EVALUATION

### 1.0 DESCRIPTION

This License Amendment Request (LAR) proposes to amend Full Power Operating Licenses (FPOs) DPR-80 and DPR-82 for Units 1 and 2 of the Diablo Canyon Power Plant (DCPP), respectively.

The proposed changes would revise the Operating Licenses for Units 1 and 2 to recapture the low-power testing period such that expiration of the FPO would occur 40 years from the date of issuance of the FPO, as permitted by Title 10 of the Code of Federal Regulations (10 CFR) Part 50.51.

### 2.0 PROPOSED CHANGE

The current expiration dates of the Unit 1 and 2 facility operating licenses are measured from the date of issuance of the low-power operating licenses (LPOs) for each unit. The proposed amendments would revise the expiration date of the Unit 1 and 2 operating licenses to reflect a 40-year term measured from the date of issuance of each facility's FPO. The Units 1 and 2 facility operating licenses would be revised as follows:

<u>Facility Operating License</u>	<u>Date of FPO Issuance</u>	<u>Current Expiration</u>	<u>Revised Expiration</u>
DPR-80	11/02/1984	09/22/2021	11/02/2024
DPR-82	08/26/1985	04/26/2025	08/26/2025

Thus, the additional operating period for Unit 1 would be just over 37 months. The additional operating period for Unit 2 would be 4 months

The revised portions of the Unit 1 and 2 licenses are provided in Enclosure 2.

### 3.0 BACKGROUND

Section 103.c of the Atomic Energy Act of 1954 (AEA), as amended, provides that a license may be issued for a specific period not to exceed 40 years. Section 104.b of the AEA does not identify a specific license term. However, 10 CFR 50.51 also specifies that each license will be issued for a fixed period of time not to exceed 40 years from the date of issuance. Also, 10 CFR 50.56 and 50.57 allow the issuance of an operating license pursuant to 10 CFR 50.51 after the construction of the facility has been substantially completed, in conformity with the construction permit and when other provisions specified in 10 CFR 50.57 are met.

The Commission issued the LPOLs for DCCP Units 1 and 2 on September 22, 1981 (DPR-76), and April 26, 1985 (DPR-81), respectively. In the LPOL for each unit, the licensee was only authorized to operate the respective unit up to 5 percent of rated thermal power.

On November 2, 1984, the Commission issued FPOL Facility Operating License No. DPR-80 for Unit 1, which superceded the Unit 1 LPOL. The FPOL included an expiration date of April 23, 2008. On August 26, 1985, the Commission issued FPOL Facility Operating License DPR-82 for Unit 2, which superceded the Unit 2 LPOL. The Unit 2 FPOL included an expiration date of December 9, 2010. Both FPOLs were issued under Section 104.b of the AEA.

The initial FPOL term for both units was 40 years, commencing with the issuance of the construction permit on April 23, 1968, for Unit 1 and December 9, 1970, for Unit 2. On March 1, 1995, the Commission issued Amendment No. 97 to Facility Operating License No. DPR-80 and Amendment No. 96 to Facility Operating License No. DPR-82 for DCCP Units 1 and 2, respectively, to extend the operating license dates to September 22, 2021, for Unit 1, and to April 26, 2025, for Unit 2, or 40 years after the date of issuance of the LPOLs. The proposed amendments would revise the Units 1 and 2 licenses so that the licenses would expire 40 years from the date of issuance of the respective FPOLs.

In summary, the proposed amendments to the Units 1 and 2 facility operating licenses recapture the time between issuance of the LPOL and the FPOL for each unit. SECY-98-296, "Agency Policy Regarding Licensee Recapture of Low-Power Testing or Shutdown Time for Nuclear Power Plants," dated December 21, 1998, and the associated Commission Voting Record and Staff Requirements Memorandum (SRM), dated March 30, 1999, established NRC policy regarding license recapture of low-power testing periods (Reference 7.1). In the voting record and SRM, the Commission approved the staff's recommendation to allow Grand Gulf Nuclear Station to recover the time spent in low-power testing before their FPOL was issued. The Commission also approved the granting of similar requests from other licensees provided the 40-year license term began with the issuance of an LPOL or construction permit and a separate FPOL was subsequently issued.

In the case of DCCP, the 40-year FPOL term for Units 1 and 2 began with the issuance of the LPOLs. Each LPOL was subsequently superceded by the issuance of a FPOL. Therefore, the FPOL for Units 1 and 2 is bounded by the Commission's policy allowing license recapture of low-power testing and permitting a 40-year license term. No exemption from 10 CFR 50.51 is required.

The proposed amendments do not constitute license renewal and are therefore not subject to the requirements of 10 CFR 54.

#### 4.0 TECHNICAL ANALYSIS

The request for amendments to the present operating licenses is based on the fact that a 40-year service life was considered during the design and construction of the plant. Because some components will foreseeably wear out during the plant's operating lifetime, design features were incorporated in the plant, which provide for inspectability of structures, systems, and components. In particular, surveillance, inspection, and maintenance procedures were implemented in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) for inservice inspection and testing of pumps and valves and in accordance with the plant's Technical Specifications (TSs). The specific provisions and requirements for ASME Code testing are set forth in 10 CFR 50.55a. In total, these procedures provide assurance that any equipment degradation will be identified and addressed during the operating life of the plant, including the proposed additional operating period.

#### 4.1 Reactor Pressure Vessel

The DCPP reactor pressure vessels for Units 1 and 2 were designed and fabricated in accordance with the 1965 Edition through Summer 1966 Addenda for Unit 1 and the 1968 Edition for Unit 2, of the ASME Boiler and Pressure Vessel Code, Section III, "Nuclear Power Plant Components." They were designed for transients considered to envelope design conditions over a 50-year operating period. To ensure the continued integrity of the vessels during operation, an Inservice Inspection (ISI) Program has been in place since plant startup.

The effects of neutron radiation embrittlement of the vessel beltline region are considered in the design and operation of the units. Compliance with all NRC regulations governing vessel integrity has been documented most recently in the NRC staff safety evaluation related to Amendment No. 133 to Facility Operating License No. DPR-80 and Amendment No. 131 to Facility Operating License No. DPR-82, dated May 3, 1999. In addition, PG&E has instituted an Embrittlement Management Plan to manage reactor vessel embrittlement throughout the entire operating life of DCPP.

#### **Pressurized Thermal Shock**

Following Cycle 1 for each unit, the neutron fluence at the reactor vessel inner wall was reduced by installing increasingly lower neutron leakage cores, thus decreasing the reactor vessel rate of embrittlement and prolonging vessel life. The DCPP reactor pressure vessel beltline materials have been evaluated according to the NRC's Pressurized Thermal Shock (PTS) screening criteria defined in 10 CFR 50.61. The Reference Temperature for Pressurized Thermal Shock ( $RT_{PTS}$ ), has been calculated for each weld metal and base metal in the

DCPP beltline regions for neutron fluences corresponding to 40 operating years. The  $RT_{PTS}$  for all materials will not exceed the screening limit of 270°F for base metal and longitudinal welds and 300°F for circumferential welds. The most recent NRC review of DCPP Units 1 and 2 confirming conformance with the current PTS rule, is documented in Reference 7.2 of this LAR.

Based on a conservative fluence projection for 40 operating years, DCPP will also meet the requirements of 10 CFR 50, Appendix G. Charpy Upper Shelf Energies were determined (DCPP Final Safety Analysis Report (FSAR) Update Tables 5.2-19A, 5.2-19B, 5.2-21A, and 5.2-21B) in accordance with Regulatory Guide (RG) 1.99, Revision 2. All DCPP beltline materials will remain above the 50 ft-lb Charpy Upper Shelf Energy fracture toughness requirement for more than 40 operating years. In addition, reactor vessel pressure-temperature limits will meet 10 CFR 50, Appendix G requirements for 40-year operation without requiring plant modification or imposing operational restraints.

### **Material Surveillance Program**

The toughness properties of the reactor vessel beltline material will be monitored throughout the proposed 40-year operating license terms with a material surveillance program that meets the requirements of 10 CFR 50, Appendix H.

The original surveillance program for DCPP Unit 1 complies with ASME E 185-70, the standard in effect when the vessel was manufactured. Although the Unit 1 surveillance program was designed prior to the existence of 10 CFR 50, Appendix H, that program does contain the significant features required for later surveillance programs and will ensure vessel embrittlement is effectively monitored throughout the requested license period. The original program includes a total of eight surveillance capsules. Three of the eight capsules contain the limiting weld metal and base metal, correlation monitor material, dosimeters, and thermal monitors. The remaining five capsules contain the limiting base metal, but no weld metal. All base metal charpy specimens in the capsules are longitudinally oriented.

The Unit 2 surveillance program includes six capsules and conforms to ASTM E 185-73. All capsules contain the limiting weld metal. The base metal specimens in the capsules are not from the limiting plate, but were machined from an adjacent plate with similar chemistry, the same heat treatment, and similar level of embrittlement at plate end-of-life as the limiting plate.

As discussed in the "Pressure and Temperature Limits Report (PTLR) for Diablo Canyon," submitted in PG&E Letter DCL-05-016, dated February 28, 2005 (Reference 7.3), Units 1 and 2 are currently using the same heatup and cooldown limits, which are based on the limiting-unit surveillance program results. To date there have been three surveillance capsules removed and

analyzed from the Unit 1 reactor vessel and four from the Unit 2 reactor vessel. The Unit 1 surveillance results are currently limiting since the calculated delta Reference Temperature for Nondestructive Testing ( $RT_{NDT}$ ) data scatter does not fall within the two standard deviations of the predicted data as required by RG 1.99, Revision 2 criteria for "credible" surveillance data. Therefore, the DCPD heatup and cooldown limits established in the PTLR are currently based on the generic limiting CF values in Tables 1 and 2 of 10 CFR 50.61 and the chemistry values provided by CE Report CE NPSD 1039, Revision 2 (Reference 7.4). If the RG 1.99 credibility criteria are met upon future surveillance capsule withdrawal and evaluation, then the RG 1.99 Position C.2 will be utilized using plant specific surveillance data.

In order to enhance the current surveillance programs, a supplemental surveillance program was implemented for Unit 1 beginning with Cycle 6. The supplemental program consists of four new surveillance capsules that contain the limiting base metal and weld metal specimens that are representative of the Unit 1 limiting weld. This supplemental program will provide additional data to better assess and manage vessel embrittlement issues during the plant operating life.

Additional measures to monitor DCPD Units 1 and 2 vessel fluence are provided in the Reactor Cavity Neutron Dosimetry Program. This voluntary program has been in effect since initial criticality and consists of irradiating and evaluating reactor cavity dosimetry, which includes multiple foil sensor sets and axial flux gradient wires attached to the metal reflective insulation surrounding the reactor vessel. Results obtained are used to confirm and complement surveillance capsule data.

The overall program to monitor reactor vessel beltline materials is thorough and comprehensive. It meets all applicable regulatory guidance and will provide continuous information relevant to determining the degree of embrittlement of beltline materials over the proposed 40-year operating license terms. This program provides reasonable assurance that the reactor pressure vessel will be in conformity with the applicable provisions of NRC rules and regulations for the proposed additional operating period.

#### 4.2 Structures

The Category I structures at DCPD were designed and constructed in accordance with 10 CFR 50. The major codes and specifications used in the design and construction of the Category I structures are discussed in the FSAR Update, Chapter 3.0. The design basis, fabrication, construction, and implementation of quality assurance criteria for the plant were reviewed by the NRC staff when the plant was being licensed for low-power operation. Structures and associated protective coatings are periodically inspected and maintained in

accordance with 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," to ensure continued structural integrity. Industrial experience with Category I structures confirms a service life in excess of 40 years may be anticipated.

Criteria that were used in the analysis, design, and construction of Category I structures account for anticipated loadings and postulated conditions that may be imposed on the structures during their service lifetime, including the proposed additional operating periods.

The above program provides reasonable assurance that the Category I structures will be in conformity with the applicable provisions of NRC rules and regulations for the proposed additional operating period.

#### 4.3 Mechanical Equipment

DCCP mechanical equipment is designed, licensed, and constructed for a 40-year service life. The reactor coolant system components and support systems were analyzed for the integrated effects of radiation damage and cyclic loadings (with added margin) that could reasonably be expected to occur in a 40-year operating lifetime measured from issuance of the FPOL. Surveillance and maintenance practices were implemented in accordance with the ASME Code for ISI and Inservice Testing of Pumps and Valves, a maintenance program satisfying 10 CFR 50.65 requirements, and the TS. The TSs are part of the plant's operating license and have been approved by the NRC, as are all subsequent amendments to the TSs. The specific provisions and requirements for ASME Code testing are set forth in 10 CFR 50.55a.

Surveillance, maintenance, and testing requirements for mechanical equipment are in place at the plant to verify operability or to detect degradation and ensure that the equipment that does degrade is replaced or other corrective actions are taken. In addition, subcomponents such as nonmetallics (e.g., gaskets and o-rings) are inspected and replaced as necessary, as part of routine maintenance in order to ensure the design life of the equipment.

Compliance with the codes, standards, and regulatory requirements to which mechanical equipment were analyzed, constructed, tested, and inspected provides adequate assurance that the structural integrity of equipment important to safety will be maintained during the Units 1 and 2 operating lifetime and during the additional period proposed.

#### 4.4 Electrical Equipment

Environmental qualification (EQ) is a rigorous program of testing, analysis, and maintenance to confirm that electrical equipment relied upon in the event of an

accident will be capable of performing its design safety function, despite exposure to the harsh environment resulting from an accident. The DCPPEQ Program complies with 10 CFR 50.49, "Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants." As applied to DCPPEQ, 10 CFR 50.49 requires electrical equipment important to safety and located in a harsh environment to be environmentally qualified, at a minimum, in accordance with IEEE Trial-Use Standard 323-1971 and Category II positions in NUREG-0588 ("For Comment" version, dated December 1979). In accordance with 10 CFR 50.49(1), replacement equipment (for equipment that is required to be environmentally qualified) is required to be qualified in accordance with IEEE Standard 323-1974 and Category I positions in NUREG-0588 ("For Comment" version, dated December 1979), unless there are sound reasons to the contrary.

The DCPPEQ Program is a continuing program. The master list of equipment to be qualified is maintained as a controlled engineering drawing and is revised as plant design changes are implemented. Detailed EQ files document the results of the testing and analysis that substantiate that the equipment will perform as required in accident environments. Surveillance activities are performed to detect adverse trends in aging or performance. Maintenance procedures assure that the qualified configuration of equipment is restored after maintenance. Equipment that is not qualified for the entire 40-year operating license term (FPOL) is refurbished or replaced prior to exceeding its qualified life.

Supplements 15 (dated September 1981) and 31 (dated April 1985) to the DCPPEQ Safety Evaluation Report (SER) provide the NRC staff's evaluation of the DCPPEQ Program. In Supplement 31 to the SER, the NRC staff concluded that the DCPPEQ Program is acceptable and that compliance with 10 CFR 50.49 has been demonstrated. Supplement 31 also noted that the DCPPEQ Program had been expanded to include RG 1.97 Category 1 and 2 instrumentation. The NRC staff's findings are premised on the continuing nature of the DCPPEQ Program (e.g., replacement of equipment prior to expiration of its qualified life), without regard to the length of the remaining license period.

In summary, the DCPPEQ Program ensures that electrical equipment important to safety within the scope of 10 CFR 50.49 will be adequately qualified and maintained, and thus will be capable of performing required safety functions throughout the proposed 40-year FPOL terms.

#### 4.5 Quality Assurance and Maintenance Programs

The Units 1 and 2 Quality Assurance (QA) Program continuously assess how programs are implemented, procedures are followed, and operating requirements are met. This oversight includes the maintenance programs, which assure that equipment remains operable or corrective actions are taken. The maintenance programs must be performed in accordance with 10 CFR 50.65, "Requirements

for monitoring the effectiveness of maintenance at nuclear power plants.” Assessments of the QA Program and maintenance programs show that these programs remain acceptable. The QA Program meets the requirements of Appendix B to 10 CFR 50.

Therefore, implementation and use of these programs at DCPD provides reasonable assurance that equipment important to safety will, for the proposed additional operating period, be in conformity with the provisions of the rules and regulations of the NRC, and the DCPD licenses.

## 5.0 REGULATORY ANALYSIS

### 5.1 No Significant Hazards Consideration

PG&E has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, “Issuance of amendment,” as discussed below:

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

Response: No.

The proposed additional operating license periods do not affect the probability or consequences of an accident previously evaluated since they require no physical change in the plant equipment or operating procedures and the Final Safety Analysis Report (FSAR) Update safety analyses are based on 40-year full power operation. Surveillance and maintenance practices, as well as other programs such as environmental qualification of equipment, ensure timely identification and correction of any degradation of safety-related plant equipment. The long-term integrity of the reactor vessels has been evaluated using currently acceptable NRC calculational methods and best available Diablo Canyon Power Plant (DCPD) specific data. The evaluation results demonstrate that both reactor vessels are safe for normal operations in excess of 40 years.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

The possibility of a new or different kind of accident is not created by the proposed additional operating periods since at least 40 years of full power operation was assumed in the design and construction of DCCP Units 1 and 2. The plant maintenance programs are also designed to both maintain and determine the need to replace safety-related components. These programs will continue to be applied as they are presently to assure safe operation.

Therefore, the proposed change does not create the possibility of a new or different accident from any accident previously evaluated.

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

Response: No.

The proposed additional operating periods do not involve a significant reduction in a margin of safety since, as is the case with present operation, degradation of safety-related equipment will be identified and corrected by ongoing surveillance and maintenance practices. Existing programs, routine maintenance, and compliance with Technical Specifications assure that an adequate margin of safety is maintained. These activities will remain in effect for the duration of the proposed additional operating periods.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above evaluation, PG&E concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c) and, accordingly, a finding that the amendments involve "no significant hazards consideration" is justified.

## 5.2 Applicable Regulatory Requirements/Criteria

The proposed change has been evaluated to determine whether applicable regulations and requirements continue to be met. PG&E has determined that the proposed license amendments do not require any exemptions or relief from regulatory requirements and does not affect conformance with 10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants." Applicable regulatory requirements will continue to be met, adequate defense-in-depth will be maintained, and sufficient safety margins will be maintained. The applicable regulatory guidance of SECY-98-296, "Agency Policy Regarding Licensee Recapture of Low-Power Testing or Shutdown Time for Nuclear Power Plants" is met. The

applicable regulatory requirements are addressed in the individual sections of the technical analysis.

Based on the considerations discussed above and within the individual sections of the technical analysis: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; (2) such activities will be conducted in compliance with the Commission's regulations; and (3) the issuance of the amendment will not be inimical to the common defense and security of the health and safety of the public.

## 6.0 ENVIRONMENTAL CONSIDERATION

The following is a summary of the environmental considerations associated with the proposed low power license recapture. There are no significant environmental considerations involved with the proposed action.

The proposed amendments do not affect the design or operation of the plant, do not involve any modifications to the plant or any increase in the licensed power level for the plant, and will not create any new or unreviewed environmental impacts that were not previously considered in the Final Environmental Statement (FES) related to operation of DCP. The proposed license amendments also will not significantly increase the probability or consequences of accidents; do not involve any changes in the types of effluents that may be released off site, and do not increase occupational or public radiation exposures. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

The FES fully evaluated the environmental impacts of generating power at DCP based on 40 years of operation. The FES, in general, assesses various aspects associated with operation of DCP in terms of annual impacts and balances these against the anticipated annual energy production benefits. This assessment is not changed by the proposed amendments.

### Background

As part of the original licensing of DCP, PG&E prepared and submitted an environmental report to the NRC (Reference 7.5) addressing the potential impact of the operation of DCP on the surrounding environment. The NRC reviewed this report and issued a FES in 1973 (Reference 7.6). Both the environmental report and the FES concluded that operation of the DCP would have no significant adverse environmental effects on the areas surrounding DCP.

PG&E updated this environmental information as part of the construction period recapture LAR (Reference 7.7) and concluded that there were no significant

adverse environmental effects associated with the construction period recapture. The NRC review of the construction period recapture also determined that there was no significant adverse environmental impact associated with this additional operating period (Reference 7.8).

#### Environmental Impacts of the Low Power Testing Period Recapture

The offsite exposure from releases during postulated accidents has been previously evaluated in the FSAR Update. The results are acceptable when compared with the criteria defined in 10 CFR 100. This conservative design-basis evaluation is a function of four parameters: (1) the type of accident postulated; (2) the radioactivity calculated to be released during the accident; (3) the assumed meteorological conditions at the site; and (4) the population distribution versus distance from the plant. An environmental assessment is also provided in the FES. The type of accidents and the calculated release does not change as a result of the proposed action. The site meteorology as defined in Chapter 2 of the FSAR Update is essentially constant. The population size and distribution has not changed significantly from that evaluated in the FES.

The expected annual occupational exposure for the proposed extended period of operation does not change previous conclusions presented in the FES for average annual occupational exposure. The actual annual occupational exposure of workers at the plant is reported routinely in the Occupational Radiation Exposure Report submitted to the NRC. Through continued implementation of as low as is reasonably achievable (ALARA) and other programs, projected collective occupational exposure for the plant through the proposed extended period will continue to remain significantly below the exposures considered in the FES.

The offsite exposure from releases during routine operations was also previously evaluated in the FES. During the low-power license, the plant was restricted to no more than 5 percent of rated power and the generation of radioactivity at the plant was significantly smaller than would have occurred if the plant were at full-power operation. In addition, routine releases to the environment are governed by 10 CFR 20, which states that such releases should be ALARA. The annual Radioactive Effluent Release Reports provide an annual assessment of radiation dose as a result of effluents released from the plant. These reports show that actual releases of radioactive liquids and gases have historically been lower than those estimated in the FES. The volume of radwaste generated at the plant from the routine processing of radioactive liquids (filters and resins), and from routine maintenance on equipment, has significantly decreased from values considered in the FES due to waste volume reduction technology improvements.

The plant Annual Radiological Environmental Operating Program is used to monitor the effect of plant operation on the environment. This is accomplished

by continuously measuring radiation levels and airborne radioactive materials and periodically measuring amounts of radioactive materials in samples at various locations surrounding the plant. Continued environmental monitoring and surveillance under this program will continue to ensure early detection of any increase in exposures over the proposed additional operation period. Therefore, the proposed amendments do not change previous conclusions presented in the FES on annual public doses.

With regard to the environmental impacts of the uranium fuel cycle, all fuel at DCPD is bounded by the impacts reported in Table S-4 of 10 CFR 51.52. Thus this generic assessment is bounding for DCPD. To provide for the storage of additional spent fuel assemblies beyond the licensed capacity of the DCPD spent fuel pools, dry cask storage was licensed under a site-specific 10 CFR 72 license (Docket No. 72-26). Onsite storage capacity in the spent fuel pools and in dry cask storage will be adequate for the extended period of proposed operation.

With regard to potential nonradiological impacts, there are no impacts beyond those previously considered for 40 years of operation, including potential impacts on historical sites and impacts due to nonradiological plant effluents. Therefore, there are no significant nonradiological environmental impacts associated with the proposed action.

Accordingly, there are no significant environmental impacts associated with the proposed action.

### Conclusions

The environmental effects associated with the proposed license amendments are enveloped by the original and recapture environmental reviews (References 7.5 and 7.6), since these reviews assumed 40 years of full-power operation. The impacts associated with the additional periods of operation have thus been previously addressed. Furthermore, some of the environmental information related to 40-year plant operation, such as spent fuel storage options and no project alternatives, was updated and confirmed to have no significant adverse environmental effects as part of its Diablo Canyon Independent Spent Fuel Storage Installation (ISFSI) Environmental Report (ER) (Reference 7.9). The ISFSI ER was reviewed by the NRC (Reference 7.10).

PG&E has evaluated the proposed amendment and has determined that the proposed amendment does not involve: (i) a significant hazards consideration; (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite; or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental

impact statement or environmental assessment need be prepared in connection with the proposed amendment.

## 7.0 REFERENCES

- 7.1 SECY-98-296, "Agency Policy Regarding Licensee Recapture of Low-Power Testing or Shutdown Time for Nuclear Power Plants," dated December 21, 1998, and the associated Commission Voting Record and Staff Requirements Memorandum, dated March 30, 1999.
- 7.2 NRC Letter, Fracture Toughness/Pressurized Thermal Shock (10 CFR 50.61) (TAC Nos. 59951 and 59952), October 30, 1987.
- 7.3 PG&E Letter DCL-05-016, Pressure and Temperature Limits Report (PTLR-1), Revision 4, Diablo Canyon Power Plant Units 1 and 2, February 28, 2005.
- 7.4 CE NPSD-1039, Best Estimate Copper and Nickel Values in CE Fabricated Reactor Vessel Welds, Revision 2, and CE NPSD-1039 Appendix A, CE Reactor Vessel Weld Properties Database Volumes 1 and 2, Revision 2.
- 7.5 Environmental Report, Units 1 and 2, Diablo Canyon Site, PG&E, July 1971, and supplements No. 1, November 1971, No. 2, July 1972, and No. 3, August 1972.
- 7.6 Final Environmental Statement Related to the Nuclear Generating Station, Diablo Canyon Units 1 and 2, USAEC, May 1973.
- 7.7 PG&E License Amendment 92-04, 40-Year Operating License Application, July 9, 1992.
- 7.8 NRC Letter to PG&E, License Amendment No. 97 to Facility Operating License No. DPR-80 and Amendment No. 96 to Facility Operating License No. DPR-82, March 1, 1995.
- 7.9 Diablo Canyon Independent Spent Fuel Storage Installation Environmental Report, PG&E, December 2001.
- 7.10 NRC Letter to PG&E, Environmental Assessment and Finding of No Significant Impact Related to the Construction and Operation of the Diablo Canyon Independent Spent Fuel Storage Installation (TAC NO. L23399), dated October 24, 2003.

8.0 Precedent

The proposed license changes are consistent with SECY-98-296, "Agency Policy Regarding Licensee Recapture of Low-Power Testing or Shutdown Time for Nuclear Power Plants," dated December 21, 1998, and the associated Commission Voting Record and Staff Requirements Memorandum, dated March 30, 1999, which established NRC policy regarding license recapture of low-power testing or shutdown time for nuclear power plants.

**PACIFIC GAS AND ELECTRIC COMPANY**  
**DIABLO CANYON NUCLEAR POWER PLANT, UNIT 2**  
**DOCKET NO. 50-323**  
**FACILITY OPERATING LICENSE**  
License No. DPR-82

I. Term of License

This License is effective as of the date of issuance and shall expire at midnight on ~~April~~ August 26, 2025.

**PACIFIC GAS AND ELECTRIC COMPANY**  
**DIABLO CANYON NUCLEAR POWER PLANT, UNIT 1**  
**DOCKET NO. 50-275**  
**FACILITY OPERATING LICENSE**  
License No. DPR-80

I. Term of License

This License is effective as of the date of issuance and shall expire at midnight on ~~September 22, 2024~~ November 2, 2024.