

ESA - marine mammals No. 5711 side P. 2 take

Pacific Gas and Electric Company

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February 1, 2001

VIA FAX and Fed Ex



Joseph G. Cordaro
Wildlife Biologist
National Marine Fisheries Service
501 West Ocean Blvd., Suite 4200
Long Beach, California 90802-4213

Re: Pacific Gas and Electric Company
Marine Mammal Protection Act - Incidental Take Permit Application
Diablo Canyon Power Plant

Sea Lions, Harbor Seals, & Northern
Elephant Seals

Dear Mr. Cordaro:

In accordance with the Code of Federal Regulations (50 CFR Section 216, Subpart I, General Regulations Governing Small Takes of Marine Mammals Incidental to Specified Activities), Pacific Gas and Electric Company (PG&E) is submitting the enclosed application for incidental take of specified marine mammals for PG&E's Diablo Canyon Power Plant (DCPP).

Since the plant began operation in 1985, there have been no known incidents in which operation of the power plant (or the intake structure) has adversely impacted any marine mammal. PG&E does not expect any future adverse impacts to marine mammals from operation of DCPP. However, due to resident populations of marine mammals in the Intake Cove and the occasional occurrence of sick or dead marine mammals from causes unrelated to DCPP, PG&E is requesting an incidental take permit for DCPP for California sea lions, harbor seals, and northern elephant seals.

Additionally, PG&E evaluated operations and marine mammal activity at its two other power plants, Hunters Point Power Plant (HPPP) and Humboldt Bay Power Plant (HBPP), and determined that MMPA incidental take permits are not needed at these sites.

As discussed at the utility meeting last fall, PG&E will prepare the necessary section 10 Endangered Species Act (ESA) application for sea turtles at DCPP. HPPP and HBPP do not have any recorded incidents involving sea turtles and therefore do not require an incidental take permit under ESA.

We will keep you posted on the status of the DCPP ESA application. If you have any questions, please contact Diane Ross-Leech, Habitat and Species Protection Program Manager, at 415-973-5896 or me at (415) 973-5442.

Sincerely,

Pat Eckhardt
Patricia Eckhardt, P.E.
Senior Environmental Engineer

cc: Diane Ross-Leech

**Joseph G. Cordaro
PG&E - Diablo Canyon
MMPA Incidental Take Permit Application
February 1, 2001**

**bcc: Teresa DeBono
Kathy Jones
Jim Kelly
Drew Squyres**

**Pacific Gas and Electric Company
Diablo Canyon Power Plant
February 1, 2001**

**Marine Mammal Protection Act Incidental Take Permit Application
For California Sea Lions, Harbor Seals, and Northern Elephant Seals**

1. **A detailed description of the specific activity or class of activities that can be expected to result in incidental taking of marine mammals.**

There have been no known incidents in which operation of Diablo Canyon Power Plant (DCPP) has adversely impacted any marine mammal. Pacific Gas and Electric Company (PG&E) does not expect any future adverse impacts to marine mammals from operation of the plant. It is not anticipated that plant operations will result in incidental take of marine mammals other than the potential removal of animals that have been affected by non-plant related factors. This could include individuals that are dying or have died of natural causes, or have been injured or killed by other parties (fishing vessel collisions, etc.). Due to the abundance of resident and non-resident populations in the vicinity of the plant, this application for an incidental take permit is intended to cover any unanticipated marine mammal incidents.

DCPP, owned and operated by PG&E, is a nuclear-powered, steam-turbine power plant with a rated output of 2,200 megawatts of electricity. Commercial operation of Unit 1 began in May 1985, and Unit 2 in March 1986. DCPP is located on a coastal terrace midway between the communities of Morro Bay and Avila Beach on the central California coast (Figure 1). The local coast is a steep and rugged rocky shoreline that is exposed to heavy wave activity. The area supports a rich community of marine life that is a biogeographical extension of similar marine communities extending many hundreds of miles to the north. Except for DCPP, the coast is largely uninhabited and undeveloped along the 16 km (10 mi) between the cities of Morro Bay and Avila Beach.

The power plant draws in seawater from a constructed intake cove through a cooling water system to provide cooling for power plant operations. The intake structure was sited behind breakwater structures to mitigate the effects of wave action. The common Unit 1 and Unit 2 intake structure is located at the north end of the cove created by the breakwaters.

The intake for DCPP is a shoreline structure that houses bar racks, vertical traveling screens, auxiliary cooling water systems, and main circulating water pumps (Figure 2). The cooling water for each unit is supplied by two main Circulating Water Pumps (CWP) and one Auxiliary Seawater (ASW) pump. On the ocean side of the intake structure, a concrete curtain wall extends approximately 2.4 m below mean sea level to prevent floating debris from entering the structure. Seawater entering the intake structure passes through one of 16

sets of bar racks designed to exclude large debris from the forebays. The bar racks consist of vertical rows of steel bars spaced about 8 cm apart. The underwater portion of the bar racks is approximately 10 meters high depending on tide. Two of the bar racks are 1.5 m wide (ASW bar racks), while the other 14 are 3.1 m wide (CWP bar racks). The overall intake opening is approximately 10 meters high by 52.6 meters wide. Due to the large surface area of the intake opening the flow velocity of seawater through the bar racks into the intake structure is relatively low (about 1 foot per second). Sets of traveling screens with 0.95 cm mesh stainless steel screens are located behind the bar racks to remove smaller debris that passes through the bar racks.

Marine mammals visit and are resident in the Intake Cove (see question #3 below). They have no trouble swimming against the low velocity current going into the intake structure. In fact, these animals frequently swim near or into the intake structure while foraging for food. The bar racks prevent marine mammals from entering the interior section of the intake structure which contains the traveling screens.

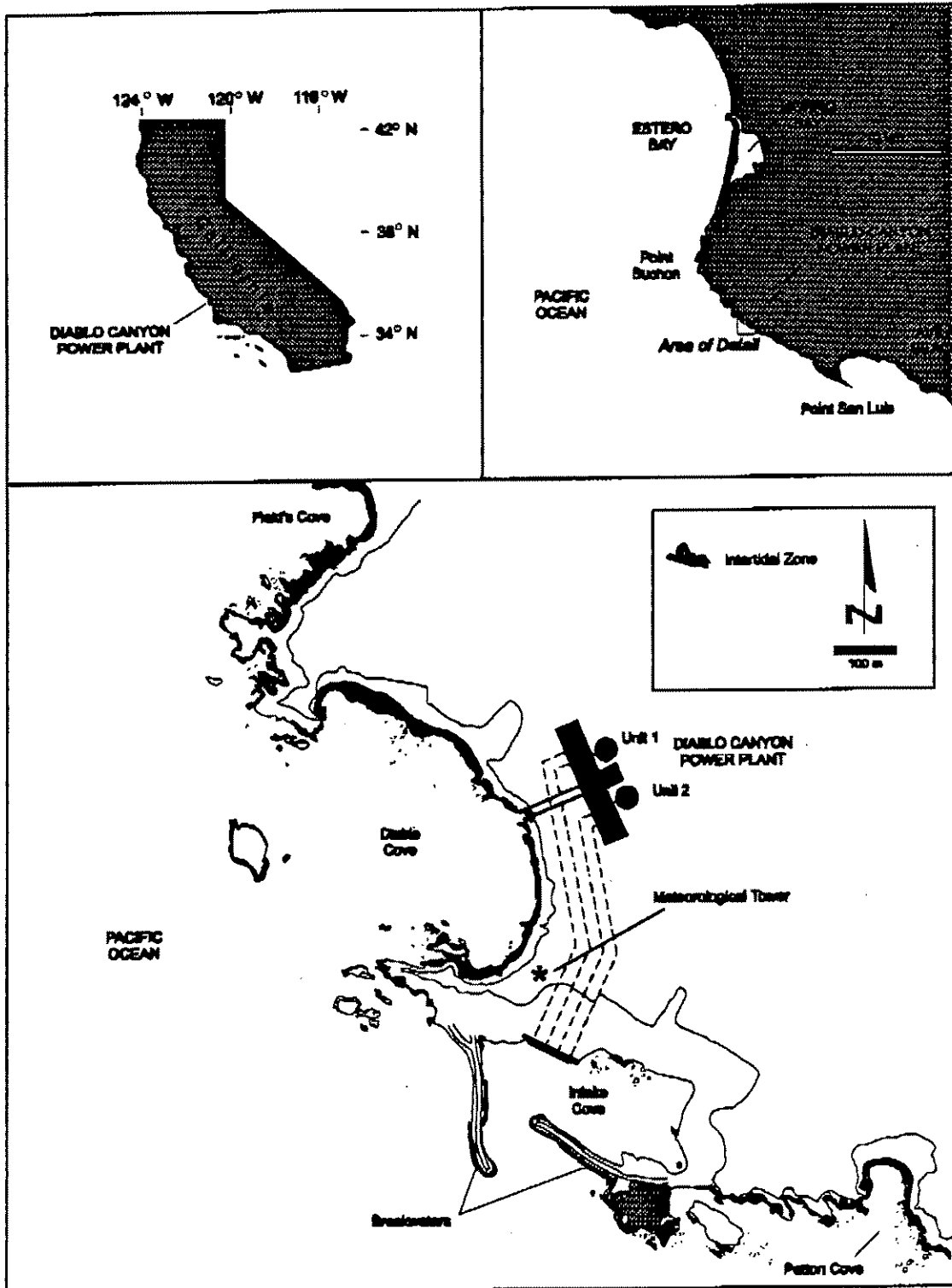


Figure 1. Location of Diablo Canyon Power Plant.

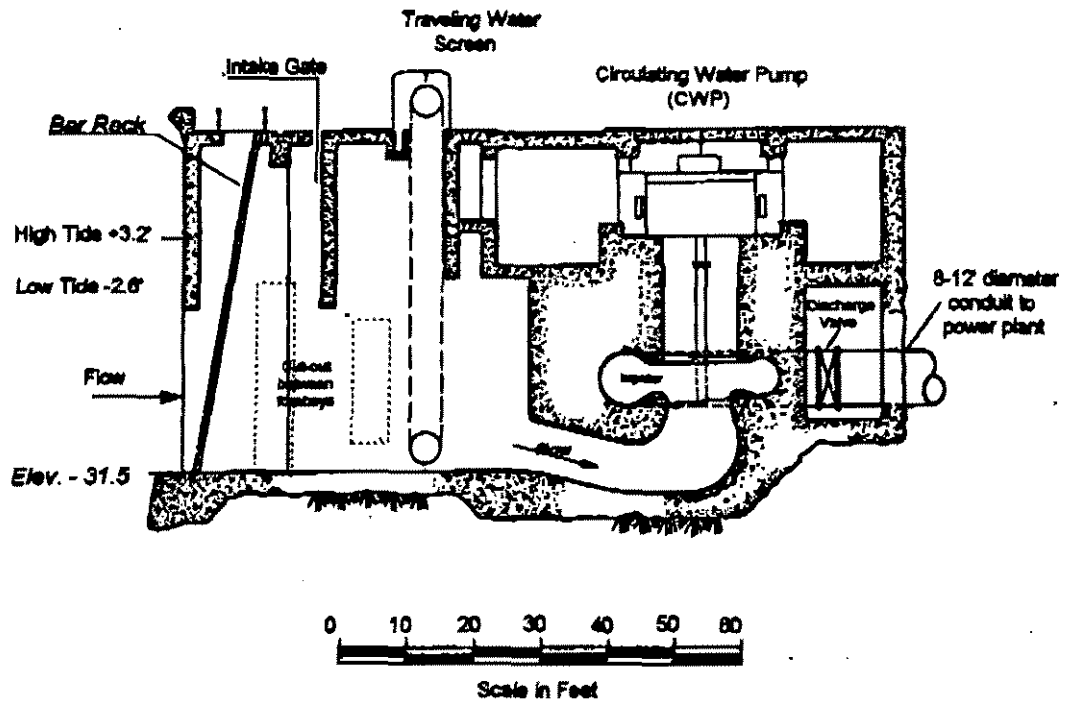


Figure 2. Cross-section diagram of DCPD intake structure showing water flow path. Elevations are based on mean sea level.

2. **The date(s) and duration of such activity and the specific geographical region where it will occur.**

Both of DCP's units have forty (40) year operating licenses. Based on the operational start dates for the two units, DCP will operate until at least March, 2025 for Unit 1 and April, 2026 for Unit 2. License extensions are possible for both units. Under normal operating conditions the circulating water pumps are used to draw cooling seawater into the plant. During maintenance outages, the circulating water pumps may be turned off for periods of up to about one (1) month. Usually, one unit remains operational during these maintenance periods and the circulating water pumps of the operating unit remain on. Therefore the Diablo Canyon Power Plant intake is expected to remain operational more or less continuously from the present until at least April, 2026.

3. **The species and numbers of marine mammals likely to be found within the activity area.**

The following species of marine mammals under NMFS jurisdiction are likely to be found in the vicinity of Diablo Canyon Power Plant:

- a. California Sea Lion. There is a sea lion rookery on Lion Rock about 2 miles north of the Intake Cove. Periodically solitary California sea lions visit the Intake Cove. Generally, they swim into the cove, explore or search for food, and leave. There have been several times over the last fifteen years that sick sea lions have come into the intake cove. Occasionally the Marine Mammal Center has captured animals for relocation and rehabilitation. At other times the sick animals have left on their own or, in a few cases, died while in the intake cove.

Occasionally a dead sea lion has drifted into the intake cove. These appear to be deaths due to natural causes. There is no indication that any of these incidents had anything to do with operation activities of the power plant.

- b. Harbor Seal. A resident population of up to sixteen harbor seals use the Intake Cove day and night. They move freely in and out of the Intake Cove for foraging activities.
- c. Northern Elephant Seal. Solitary northern elephant seals are occasionally observed in the Intake Cove. During the period from December 1986 to end of 1992 they had established a small haul-out site on the inside of the west breakwater, about 50 yards west of the intake structure. During that period there were up to about 65 animals using that area as a haul-out site. During the past 8 years that site has not been used as a haul-out site for northern elephant seals.

4. A description of the status, distribution, and seasonal distribution (when applicable) of the affected species or stocks of marine mammals likely to be affected by such activities.

The following summary comes from Draft NOAA Technical Memorandum: U.S. Pacific Marine Mammal Stock Assessments: 2000 (January, 2000). This document indicates that none of the three marine mammal species discussed below are threatened or endangered under the Endangered Species Act and that the populations of all three are increasing in abundance.

California Sea Lion:

Population Status:

The entire California sea lion population cannot be counted since all animals are never on shore at the same time. The population estimate comes from counts of pups during the breeding season (after all pups have been born). The number of births is estimated from the pup counts. The total size of the population is estimated from the number of births and the proportion of pups in the population. These estimates include factors for pre-census mortality. The population size was estimated to range from 204,000 to 214,000. Counts of all sea lions at haul-out sites and rookeries provides an Minimum Population Estimate of 109,854 (an additional unknown number of sea lions were at unknown haul-out sites or at sea and were not counted). The population has recently been growing at a rate of 6.2% per year.

California sea lions are not listed as "endangered" or "threatened" under the Endangered Species Act or as "depleted" under the Marine Mammal Protection Act (MMPA). They are not considered "strategic" stock under the MMPA because total human-caused mortality (1131 fishery related mortalities and 141 from other sources) is less than the Potential Biological Removal (PBR) value (6,591).

Distribution:

California sea lions range from Canada to southern Mexico and southward to the Galapagos Islands. The United States stock of sea lions extends from the U.S./Mexico border to Canada.

Seasonal Distribution: N/A

Harbor Seal:

Population Status:

A complete count of harbor seals in the California stock population is not possible because some portion of the seals are away from haul-out sites during counts. A complete pup count is also not possible because pups enter the water almost immediately after birth. Population size is estimated by counting the number of seals ashore during the peak haul-out period (May/June) and by multiplying this count by the inverse of the estimated fraction of seals on land. Based on the most recent counts (23,302 in May/June 1995) and using the appropriate correction factor, the harbor seal population in California is estimated to be 30,293. The Minimum Population

Estimate was calculated to be 27,962. Current trends indicate that the California population is increasing at a rate of 3.5% per year.

Harbor seals are not listed as "endangered" or "threatened" under the Endangered Species Act or as "depleted" under the Marine Mammal Protection Act. Total fishing mortality cannot be accurately estimated for recent years, but extrapolations from past years and preliminary data indicate that human-caused mortality is less than the PBR value (1,678). Therefore, they would not be considered a "strategic" stock under MMPA.

Distribution:

Harbor seals are widely distributed in the North Atlantic and North Pacific. The U.S. North Pacific subspecies (*Phoca vitulina richardsi*) ranges from southern Baja California, Mexico to the Pribilof Islands in Alaska. The California stock of harbor seals (for management purposes) extends from the U.S./Mexico border to the California/Oregon border. There are no known habitat issues for the California stock of harbor seals.

Seasonal Distribution: N/A

Northern Elephant Seal:

Population Status:

A complete population count of elephant seals is not possible because all age classes are not ashore at the same time. Population size is typically estimated by counting the number of pups produced and multiplying by the inverse of the expected ratio of pups to total animals. Based on the estimated 24,000 pups born in California and a 3.5 multiplier, the California stock was approximately 84,000 in 1996. The Minimum Population Estimate was estimated conservatively as 51,625. Northern elephant seal colonies are continuing to grow in California.

Northern elephant seals are not listed as "endangered" or "threatened" under the Endangered Species Act or as "depleted" under the Marine Mammal Protection Act. The annual human-caused mortality is much less than the PBR value (2,142). Therefore, they would not be considered a "strategic" stock under MMPA. There are no known habitat issues for the California stock of northern elephant seals.

Distribution:

Northern elephant seals range from southern Baja California, Mexico to the Aleutian Islands in the Gulf of Alaska. The California breeding population ranges from the U.S./Mexico border northward (see seasonal distribution).

Seasonal Distribution:

Northern elephant seals breed and give birth in California and Baja California from December to March. Males feed near the eastern Aleutian Islands and in the Gulf of Alaska. The females feed further south (Washington, Oregon, and California). Adults return to land to molt between March and August. Males return later than females.

Adults return to their feeding areas again between their spring/summer molting and their winter/breeding seasons.

5. **The type of incidental taking authorization that is being requested (i.e. takes by harassment only; takes by harassment, injury and/or death) and the method of incidental taking.**

Since the plant began operation in 1985, there have been no known incidents in which operation of the power plant (or the intake structure) has adversely impacted any marine mammal. PG&E is specifically requesting an incidental take permit to cover California sea lions, harbor seals, and elephant seals for these possible scenarios:

- To remove marine mammals that are dead (from causes other than power plant operation) and drift into the Intake Cove or intake structure. Removal would involve towing the carcass out to sea.
 - To relocate marine mammals that are sick or injured (from causes other than power plant operation) and have entered the Intake Cove or intake structure.
 - The highly unlikely event that a marine mammal is impacted by plant structures or activities.
6. **By age, sex, and reproductive condition (if possible), the number of marine mammals (by species) that may be taken by each type of taking identified in number 5 above and the number of times such takings by each type of taking are likely to occur.**

PG&E does not expect to adversely impact any marine mammals due to operation of the power plant and therefore the estimated number of animals would be zero. Historically, PG&E expects from one (1) to about four (4) California sea lions to be found dead from natural causes in the Intake Cove each year. Occasional (typically no more than one or two per year) harbor seals may die in the vicinity of the Intake Cove. These animals, as discussed in paragraph 5 above, may be of any age, sex or reproductive condition

7. **The anticipated impact of the activity upon the species or stock of marine mammals.**

Based on historical data and plant intake design, PG&E expects **NO** adverse impact on the species or stock of marine mammals from plant operation activities. Historically, any dead or injured marine mammal found in the Intake Cove has died or been injured from causes unrelated to plant operation.

8. **The anticipated impact of the activity on the availability of the species or stocks of marine mammals for subsistence uses.**

PG&E activities will not have an impact on the availability of marine mammals for subsistence purposes, as there is no take of marine mammals for subsistence purposes in California.

9. **The anticipated impact of the activity upon the habitat of the marine mammal populations, and the likelihood of restoration of the affected habitat.**

PG&E does not anticipate any adverse impact on marine mammal habitat from plant operation activities. Historically, any dead or injured marine mammal found in the Intake Cove has died or been injured from causes unrelated to plant operation.

10. The anticipated impact of the loss or modification of the habitat on the marine mammal populations involved.

PG&E does not anticipate any adverse impact on marine mammal populations from loss or modification of habitat, as plant operation activities are not anticipated to result in loss or modification of the marine mammal habitat.

11. The availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such activity or other means of effecting the least practicable adverse impact upon the affected species or stocks, their habitat, and on their availability for subsistence uses, paying particular attention to rookeries, mating grounds, and areas of similar significance.

As discussed in paragraphs 1 and 5 above, the intake structure design is such that PG&E does not expect any adverse impact to any marine mammal due to plant operational activities.

12. Where the proposed activity would take place in or near a traditional Arctic subsistence hunting area and/or may affect the availability of a species or stock of marine mammal for Arctic subsistence uses, the applicant must submit either a plan of cooperation or information that identifies what measures have been taken and/or will be taken to minimize any adverse effects on the availability of marine mammals for subsistence uses.

Activities at DCPD do not take place in or near a traditional Arctic subsistence hunting area and these activities would not affect the availability of any species or stock of marine mammal for Arctic subsistence uses.

13. The suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species, the level of taking or impacts on populations of marine mammals that are expected to be present while conducting activities and suggested means of minimizing burdens by coordinating such reporting requirements with other schemes already applicable to persons conducting such activity. Monitoring plans should include a description of the survey techniques that would be used to determine the movement and activity of marine mammals near the activity site(s) including migration and other habitat uses, such as feeding. Guidelines for developing a site-specific monitoring plan may be obtained by writing to the Director, Office of Protected Resources.

As any necessary reporting is only expected to involve marine mammals that have been affected by non-plant related causes, PG&E proposes to continue use of the Marine Mammal Stranding form to report such marine mammal incidents. As DCPD has no anticipated adverse impact to marine mammals, PG&E does not propose any additional monitoring of these populations. Agency monitoring programs that are currently in place adequately monitor population trends along the California coast.

14. Suggested means of learning of, encouraging, and coordinating research opportunities, plans, and activities relating to reducing such incidental taking and evaluating its effects.

PG&E cooperates with the National Marine Fisheries Service, the California Department of Fish and Game, and the Fish and Wildlife Service in their marine mammal programs. Based on lack of impact to marine mammals from DCPP operations, PG&E does not believe additional programs are needed.