Docket Nos. 50-275
and 50-323

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JUN 1 1973

Mr. Tony Stadeker
Office of Management and Budget
Executive Office Building
Washington, D.C. 20503

Dear Mr. Stadeker:

Enclosed for your information are two copies of the summary sheet for the Final Environmental Statement prepared by the Commission's Regulatory Staff relating to the facility identified in the enclosure to this letter.

The Final Environmental Statement was prepared in accordance with the statement of general policy and procedure on implementation of the National Environmental Policy Act of 1969, as set out in Appendix D of the Commissions's regulations 10 CFR Part 50. A notice of availability of the Final Environmental Statement is being sent to the Office of the Federal Register for filing and publication.

Sincerely,

/s/

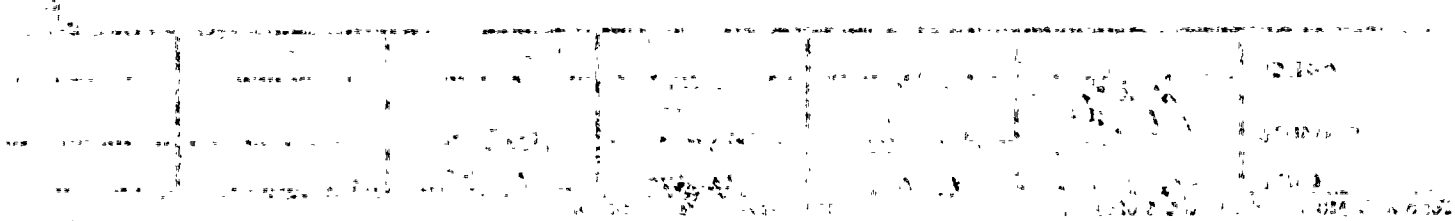
Daniel R. Muller, Assistant Director
for Environmental Projects
Directorate of Licensing

Enclosure:
List of Documents Transmitted

LB

OFFICE ▶	L:EP-2	L:EP-2	L:EP-2	ADEP		
SURNAME ▶	RWade RWade:dvw	LBW LWerner	LBW for GDicker	DMuller		
DATE ▶	3/7/73	3/7/73	3/7/73	3/ /73		

Form AEC-318 (Rev. 9-53) AECM 0240 GPO 913—16—81465-1 415-678



SUMMARY AND CONCLUSIONS

This Final Environmental Statement was prepared by the U.S. Atomic Energy Commission, Directorate of Licensing.

1. The action is administrative.

2. The proposed action is the continuation of construction permits Nos. CPPR-39 and CPPR-69 and issuance of operating license to the Pacific Gas and Electric Company for the Diablo Canyon Units 1 and 2, located on the California coast 12 miles southwest of San Luis Obispo, California (Docket Nos. 50-275 and 50-323).

   Both units will employ pressurized water reactors designed to produce up to 7136 thermal megawatts (3568 MWt each). This heat will be used to produce steam to drive steam turbines, providing up to a guaranteed output of about 2300 MW of electrical power capacity.

   The units will be cooled by once-through flow of water from the Pacific Ocean.

3. Summary of environmental impact and adverse effects.

   a. Construction activity associated with the plant and its transmission facilities will have the following environmental effects:

      (1) Construction-related activities on the site have disturbed 142 acres of land, resulting in some alteration of wildlife habitat. Of this area, 51 acres are to be used for plant facilities, parking lots, roads, and switchyards; the remaining 91 acres will be restored by seeding and other plantings. Use of the rest of the 750-acre exclusion area will be restricted.

      (2) Construction of transmission lines has affected 6000 acres of right-of-way. Service roads and tower bases occupy 1500 acres. There has been some loss of vegetation near the roads and towers, but most of this loss will be temporary. Erosion of steep areas along the roads can be serious if not controlled. A visual impact has been created by this construction.

(3) Construction of the intake breakwaters and the coffer dams at the intake and discharge has occupied about 14-1/2 acres of ocean bottom that previously provided habitat for benthic organisms; in addition, a small area was affected by the Avila Beach barge landing. The barge landing and the coffer dams are to be removed, permitting reestablishment of the natural populations. The breakwaters will provide new habitat for intertidal and subtidal organisms.

(4) There will be some shifts in natural animal populations as a result of increased human activity.

b. Operation of the plant is expected to result in the following impacts:

(1) At design power, condenser cooling water will be heated to a maximum of 82.5°F (28.1°C) and will be discharged at a rate of up to 3864 cfs (at a temperature rise of 19°F above ambient). The heated water will mix with the cooler water of the Pacific Ocean, where the heat will eventually be dissipated to the atmosphere. As much as 68 acres will be enclosed by the 4°F above ambient isotherm.

(2) The radioactivity to be released to the environment during normal operation will result in an estimated radiation dose of approximately 3.6 man-rems per year to the population. The impact from this dose is not considered to be significant when compared to the natural background radiation doses.

(3) A very low risk of accidental radiation exposure to nearby residents will be created.

(4) Some chemicals will be added to the water used for cooling; however, the concentration of these chemicals in Diablo Cove is not expected to have adverse effects on aquatic life.

(5) There will be very little, if any decline in the concentration of dissolved oxygen in the discharged cooling water.

(6) The thermal discharge from the plant will cause an ecological shift in benthic organisms and fish that will result in an increase in the number of warm-water-tolerant forms. The higher temperatures in Diablo Cove may cause those parts of the bull kelp that are near the surface to degenerate earlier in the year than they normally do; at most, 2 or 3 acres will be affected. The higher temperatures will also increase the feeding activity of the giant sea urchin, which competes with the abalone for the existing food supply (mainly kelp); this may lead to a decline in the abalone population unless measures are taken to control the urchin. A total of 110,000 abalone may be lost as a result of the station operation.

(7) No adverse effect on phytoplankton populations is expected, because of the rapid regeneration times and large stocks available for recruitment from outside Diablo Cove. A mortality of as much as 8.5% of the zooplankton passing through the cooling system may occur, but the generation times for California zooplankton are generally 24 hours to 8 weeks, and recruitment from the open ocean will be copious; therefore, the impact on the local ecosystem is believed to be insignificant.

(8) Some jellyfish will be killed in the intake structures as a result of impingement. The ecological consequences of this loss are expected to be small.

(9) No fish losses are expected to occur in Diablo Cove as a result of the thermal discharge. Some small fish (less than 3 inches) will be killed as a result of impingement or entrainment in the cooling system.

(10) There appears to be some potential for increased mortality of avian species from contact with transmission line facilities.

4. Principal alternatives considered:

a. Sources of energy other than nuclear.

b. The construction of an equivalent plant at some other site.

c. The use of cooling towers instead of the proposed once-through cooling.

d. The discharge of heated water at some distance from the shore instead of at the shoreline.

5. Comments on the Draft Environmental Statement were received from the agencies and organizations listed below and have been considered in the preparation of the Final Environmental Statement. Copies of those comments are included as Appendix 14 and the comments are discussed in Section 14.

Advisory Council on Historic Preservation
Department of Agriculture
Department of the Army, Corps of Engineers
Department of Commerce
Department of Health, Education, and Welfare
Department of Housing and Urban Development
Department of the Interior
Department of Transportation
Environmental Protection Agency
Federal Power Commission
California Resources Agency (Departments of: Conservation, Water Resources, Parks and Recreation, Fish and Game, Harbors and Watercraft)
Geothermal Energy Institute
Kenneth B. Kilbourne, Carpenteria, California

6. This statement was made available to the public, to the Council on Environmental Quality, and to the other specified agencies in May 1973.

7. On the basis of the analysis and evaluation set forth in this Statement, after weighing the environmental, economic, technical and other benefits against environmental costs and considering available alternatives, it is concluded that the action called for under NEPA and Appendix D to 10 CFR Part 50, is the continuation of construction permits* for the facilities subject to the following conditions for the protection of the environment:

a. The continuation of the ecological and radiological baseline monitoring program as specified in Section 6. In

* Staff consideration of issuance of an operating license follows submission of applicant's Final Safety Analysis Report.

addition, the applicant shall develop a monitoring program for operation in accordance with the requirements in Section 6.

b. The applicant shall implement a program, which is acceptable to the staff, to determine and document the concentration of small fish and the concentration of eggs and larvae of marine organisms in the intake cove. This information should be used to determine susceptibility to entrainment and impingement for the organisms present; and to determine the mortality resulting from such impacts (entrainment, or impingement). (Sect. 5.3.2; Sect. 6.2.2).

c. The applicant shall develop and be prepared to implement a program which will confirm that the total available chlorine in the plant discharge does not exceed 0.1 ppm even during heat treatment for organism removal. The applicant will be required to conduct additional onsite chlorine studies to determine the acute and chronic impacts on both entrained and receiving water marine life. These studies shall start prior to operation of the first unit and continue for at least one year after operation of both units. If there are adverse effects in Diablo Cove from chlorine in the station effluent, the applicant shall modify the station or procedures to eliminate the adverse effects. (Sect. 3.5.1; Sect. 3.5.7; Sect. 5.3.2; Sect. 6.3; Sect. 12.3.4; and Sect. 13.3).

d. The applicant will be required to operate the defouling treatment in such a manner that the thermal alteration of the ocean is no more than that for the treatment of one unit with the other unit in full operation. (Sect. 3.3.3; and Sect. 5.3.2).

e. The applicant shall implement a program, which is acceptable to the staff, for redress of the areas affected by transmission line construction. (Sect. 4.2.2; and Sect. 4.4.1).

f. If harmful effects or evidence of irreversible damage are detected by the monitoring programs, the applicant shall provide an analysis of the problem and implement a program of remedial action to be taken promptly to eliminate or significantly reduce the detrimental effects or damage. (Sect. 3.5.1; Sect. 3.5.7; Sect. 5.3.2; and Sect. 6).

g. The applicant will be required to initiate additional ocean current studies starting at least one year before operation of the first unit and continuing for one year after full-power operation of both units. (Sect. 3.3.3; and Sect. 6.1).

h. The applicant shall develop and implement a program subject to staff approval to determine the actual effect of ocean currents on the thermal plume. As part of the program the applicant shall measure the extent of the thermal plume in increments of 2°F from 10°F to 2°F above ambient at 50% and 100% power of the first unit. The results of these studies must show, that the area of the projected thermal plume for operation with two units does not exceed the predictions in this Statement, or an alternative discharge arrangement shall be considered for the second unit. (Sect. 3.3.3; and Sect. 6.3).