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PACIFIC GAS AND ELECTRIC COMPANY

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April 11, 1975

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Mrs. Elizabeth S. Bowers
Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Landow Building - Room 1209
Washington, D. C. 20555

Re: Dockets 50-275-OL
50-323-OL

Dear Mrs. Bowers:

As agreed at our pre-hearing conference yesterday, enclosed is one copy of each of the following documents:

1. Letter dated December 31, 1974 and its enclosure, which is the monitoring program and schedule of technical reports to be submitted to the California Regional Water Quality Control Board - Central Coast Region covering discharges from the Diablo Canyon facility.

2. Copy of a letter dated February 14, 1975 and its enclosure, which is the report on the waste discharge monitoring program for the month of January 1975.

3. Letter dated March 14, 1975 and its enclosure, which is the report for February 1975.

4. A Finding of Violation issued April 3, 1975 by the Environmental Protection Agency. There is a serious question as to whether EPA has any jurisdiction in this matter. In any event, I will keep you and those receiving copies of this letter and the enclosures informed of significant developments.

COPY

I will see what other information on this subject is available and will either forward it to you and the others or advise that we have no additional information.

Very truly yours,

Philip A. Crane, Jr.

Enclosures

CC w/encs.: Other Board members, all parties,
James R. Tourtellotte, Esq.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
CENTRAL COAST REGION
1122 LAUREL LANE
SAN LUIS OBISPO, CALIFORNIA 93401

JAN 2 1975

December 31, 1974

Mr. E. E. Hall
Chief Siting Engineer
Pacific Gas and Electric Company
77 Beale Street
San Francisco, California 94106

Dear Mr. Hall:

Enclosed is a copy of the monitoring program to be attached to Order No. 74-41 and NPDES Permit CA0003751, Waste Discharge Requirements for Pacific Gas and Electric Company, Diablo Canyon Nuclear Power Plant, in San Luis Obispo County.

We have considered your comments and made the adjustments we believed warranted. The static bioassays refer to wastewater other than that flowing through the cooling system. Heavy metal analyses will be conducted on the cooling system.

Bioassay organisms should be obtained from outside Diablo Cove if a source can be found and may be cultured.

This monitoring program should be initiated by January 17, 1975. If you have any questons concerning this matter, please contact Jay Nighswonger of this office. Our telephone number is (805) 549-3147.

Very truly yours,

KENNETH R. JONES
Executive Officer

KRJ:JN:ms

Enclosure

cc: State Department of Fish and Game, Monterey
U. S. Environmental Protection Agency
State Water Resources Control Board
State Department of Public Health, Santa Barbara

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

Monitoring Program and Schedule of Technical Reports
to be Submitted to Regional Board by
Pacific Gas and Electric Company, Diablo Canyon
Nuclear Power Plant, San Luis Obispo County

I. Records to be maintained concerning plant discharge:

A. Average daily volume of waste discharge. Total daily flow during pre-operational testing.

B. Oil content of discharge from oil removal facilities - intermittent discharge to be sampled quarterly.

C. pH of discharge - daily when chemical cleaning of equipment is in progress. Also pH of intake when back washing.

D. Temperature of cooling water intake and discharge - daily.

E. Static bioassays (96-hr. TLm) using species indigenous to Diablo Cove, but obtained elsewhere, shall be conducted on all wastes resulting from cleaning of equipment and piping prior to discharge of any such materials either to Diablo Cove or Diablo Creek. Accumulation of materials in tissue shall be conducted on all bioassay tested animals. This is to be done until it is determined the toxic effects of materials being discharged. Bioassay on the screen backflush water for the worst possible cases shall also be conducted.

F. Concentration of radioactivity in the discharge, including the total quantity - daily, after plant begins operation.

G. Concentration of heavy metals in the discharge. Water samples are to be taken during pre-startup, pump testing, startup after maintenance operations and at other times as specified by the staff of the Regional Board. Water samples are to be taken at initial discharge and at two-minute intervals for forty-five minutes. Samples will be taken hourly thereafter to calculate mass emission rates for that day. Precision of measurement for heavy metal analyses must be $\pm$ 1 ppb. This testing shall continue until the decay rate of corrosion in the system has been determined.

II. Records to be maintained concerning receiving waters:

A. Complete radiological waste monitoring program as deemed adequate by the State Department of Public Health and relevant to the receiving waters, environment and discharge.

B. Ecological studies as specified by the Department of Fish and Game shall be continued in order to evaluate changes of the marine plant and animal distribution and abundance within Diablo Cove.

C. Ecological studies as specified by the Department of Fish and Game shall be conducted in the marine environment outside of Diablo Cove in order to evaluate the ecological conditions.

D. Aerial photographs of the existing kelp beds from Pecho Rock to Point Buchon shall be taken three times per year, during February, June and October, for a period of at least two years after initiation of operation.

E. Surface water temperatures shall be determined at two-month intervals from Point Buchon to Pecho Rock for at least two years following the beginning of operation. Isotherms shall be determined in 2°F intervals. Indidividual surveys shall be conducted consistently during the late morning hours at the same time each day.

F. Water temperatures shall be measured at one meter intervals from the surface to the bottom at seven stations prescribed by the Department of Fish and Game inside and adjacent to Diablo Cove. Measurements shall be taken in February, June, and October after operation begins. Precision of measurements shall be within $\pm$ 0.2°F.

G. Five 1/2 square meter quadrats in the rocky intertidal zone at locations formerly documented by the Department of Fish and Game shall be photographed three times per year for at least two years following discharge. A 2-1/4" color transparency shall be used for this purpose. Photographic schedule will conform to recommendations of the Department of Fish and Game.

H. pH and dissolved oxygen content of the receiving waters in February, June, and October.

I. Incident light measurements shall be taken at three meter intervals from the surface to the bottom at 9 stations prescribed by the Department of Fish and Game, Measurements shall be taken on a monthly basis during times of discharge. Measurement shall be with a photometer cell.

III. Collection of samples:

A. Temperature, oil, dissolved oxygen, and pH samples shall be grab samples.

B. Sampling for radioactivity monitoring shall be approved by the State Department of Public Health Bureau of Radiological Health.

C. All other samples shall be collected in accordance with accepted procedures having approval of the Department of Fish and Game or the staff of this Regional Board.

IV. Reports to the Board:

A. A report shall be made to the Board quarterly on that portion of the State Department of Public Health's approved environmental monitoring

program relating to the marine environment and the discharge, including daily radiological concentration and total quantity in the discharge.

B. Reports shall be made to the Board monthly not later than the 15th day of the following month and shall include:

1. Results of daily volume measurements.

2. Results of daily cooling water intake and discharge temperature measurements.

3. Results of oil content analyses of discharge from removal facilities.

4. Results of all bioassay (96-hr. TLm) tests performed.

5. Results of ecological studies as specified in Paragraph II. B., C., E., F., and H., above.

6. Copies of photographs as specified in Paragraph II. G., above.

7. The occurrence of any incident causing the level of radioactivity to exceed permissible levels or causing the release of other toxic materials in concentrations detrimental to human, plant, bird, or fish life shall be reported within 12 hours after its occurrence, and its cause, effect, and corrective action shall be described in detail in the next regular report submitted to the Regional Board.

V. Review and Evaluation of Monitoring Program, etc.:

Upon receipt of the Company's report at the end of the second year of plant operation, this Monitoring Program and Schedule of Technical Reports shall be re-evaluated in consultation with representatives of the Company, State Departments of Fish and Game and Public Health, and will be revised as deemed necessary to assure continued compliance with the Waste Discharge Requirements.

PACIFIC GAS AND ELECTRIC COMPANY

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

M. H. CHANDLER
MANAGER
STATION CONSTRUCTION DEPARTMENT
GENERAL CONSTRUCTION

February 14, 1975

Mr. Kenneth R. Jones, Executive Officer
California Regional Water Quality Control Board
1122A Laurel Lane
San Luis Obispo, California 93401

Diablo Canyon Project
Waste Discharge Monitoring Program

Gentlemen:

In accordance with your monitoring and reporting requirements for steam power plants, dated November 12, 1969 and amended December 31, 1974, the first report of the results of the monitoring program at Diablo Canyon Site Nuclear Power Plant is enclosed.

In that this is the first report, the content and format of this and subsequent reports is under study. Future reports may contain information in a different format and data for this and subsequent reports may be revised or expanded.

Although not required, discharge information which was taken in November and December is included for your information.

If you have any questions or require further clarification, please contact Mr. Dave Behrens at the Diablo Canyon Project. The telephone number where he can be reached is (805) 595-2324.

Sincerely,

(SIGNED) M. H. CHANDLER

DBehrens:jk

cc: MARINE RESOURCES REGION
California Dept. of Fish and Game
350 Golden Shore
Long Beach, California 90802

U. S. Environmental Protection Agency
100 California Street
San Francisco, California 94106

bcc: WBAllen PACrane WJLindblad RRamsey
RACayot EEHall CKMaxfield

PACIFIC GAS AND ELECTRIC COMPANY

STATION CONSTRUCTION DEPARTMENT

WASTE DISCHARGE MONITORING PROGRAM

DIABLO CANYON POWER PLANT SITE

FOR THE MONTH OF JANUARY 1975

REPORT PREPARED BY:

D. W. BEHRENS

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LIST OF TABLES

INTRODUCTION

Presented here is the first monthly report of the waste discharge monitoring program at the Diablo Canyon Site Nuclear Power Plant and its vicinity. This report contains monitoring data collected over the period November 1, 1974 to January 31, 1975.

Unless otherwise indicated, the methodologies for chemical analysis are performed in accordance with chemical analysis procedures which are contained in the Diablo Canyon Site Nuclear Power Plant, Units I and II Plant Manual, Volume 8. If modification or deviation from the recommended methodologies for these or any other analysis are made, they will be noted in the reported data summaries.

MONTHLY OVERVIEW

During the time period covered in this report, plant discharges to the receiving waters were 80,855,000 gallons in November, which was primarily screen wash water, 798,000 gallons in December and 627,000 gallons in January. There were no incidents causing the release of toxic materials in concentrations detrimental either to plant or animal life.

Full compliance with the monitoring program could not be met due to logistical problems in setting up the static bioassay laboratory. All other items in the program are either underway or are expected to be initiated in accordance with the proposed schedule.

RESULTS OF MONITORING PROGRAM

I. Monitoring of Plant Discharge

A. Volume of Waste Discharge

The total daily discharge, listed by system, is found for November 1974 in Table I, December 1974 in Table 2 and January 1975 in Table 3. Based on these data, the calculated average daily volumes are 2,695,196 gallons for November, 25,742 gallons for December and 20,226 for January.

B. Oil Content of Discharge

See Table 4, page 7.

C. pH of Discharge

See Table 5, page 8.

D. Temperature of Cooling Water Intake and Discharge

Water temperatures measured at the intake and discharge are found for November 1974, December 1974 and January 1975 in Tables 6, 7 and 8 respectively. Since the only cooling water circulated through the plant during this period was approximately 80,000,000 gallons of screen wash water in November and since the cooling load on this system is essentially nil, the recorded temperatures of intake and discharge are essentially

E. Static Bioassay (96) hour tlm

Whereas the bioassay laboratory facility is not yet ready for operation, there were no static bioassays accomplished during this reporting period. We hope we will be prepared to report 96 hour tlm by the March report. This inability to comply with this requirement was verbally communicated to Central Coast Regional Office of the California Water Quality Control Board and it was agreed that the bioassays would not be required until the laboratory facilities were completed.

F. Concentration of Radioactivity in Discharge

This measurement is not scheduled until after plant operation begins.

G. Concentration of Heavy Metals in Discharge

See Table 9, page 12

II. Monitoring of Receiving Waters

A. Radiological Waste Monitoring Program

Reported quarterly under a separate cover entitled Environmental Radiation Study in the vicinity of Diablo Canyon, California prepared by Pacific Gas and Electric Company of Engineering Research.

B. Ecological Studies of Diablo Cove

To be reported in monthly report following receipt of studies from the California Department of Fish and Game.

C. Ecological Studies Outside of Diablo Cove

To be reported in monthly report following receipt of studies from the California Department of Fish and Game.

D. Aerial Photography of Kelp Beds

Because of the size and bulk of these photographic data, copies of the transparencies will not be enclosed with this report. In the near future, the data will be converted to computer printout and will be enclosed as such.

E. Surface Water Temperatures

Not scheduled for monitoring until after plant operation begins.

F. Stratified Water Temperatures

Not scheduled for monitoring until after plant operation begins.

G. Intertidal Photographic Record

To be coordinated with and reported the month following intertidal transect analysis by the California Department of Fish and Game.

H. pH and Dissolved Oxygen of Receiving Waters

To be accomplished and reported in February report.

I. Incident Light Measurements

No measurements were made during January since the circulating water pumps were not run during this period and, therefore, there was no requirement to make these measurements.

APPENDIX

TABLE 1

DIABLO CANYON POWER PLANT

VOLUME OF WASTE DISCHARGES*

MONTH NOV. 1974

DAY	CIRCULATING WATER X 10^3 GALS.	SCREEN WASH WATER X 10^6 GALS.	DEMINERALIZER REGENERANTS X 10^3 GALS.	TURBINE BUILDING SUMP X 10^3 GALS.	AUX. SALTWATER PUMPS X 10^6 GALS.	LIQUID RADWASTE X 10^3 GALS.	STA. EVAP. BLOWDOWN X 10^3 GALS.	CONDENSATE DUMP X 10^6 GALS.	HOLDING POND MISC. X 10^3 GALS.	DAILY TOTAL
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12		5.616								
13		5.616								
14		5.616								
15		5.616								
16		5.616								
17		5.616								
18		5.616								
19		5.616					0.0765			
20		5.616								
21		5.616						10.40		
22		5.616								
23		5.616								
24		5.616								
25		5.616								
26		2.145								
27		0								
28										
29										
30										

TABLE 2

DIABLO CANYON POWER PLANT

VOLUME OF WASTE DISCHARGES*

MONTH DEC. 1974

DAY	CIRCULATING WATER X 10^6 GALS.	SCREEN WASH WATER X 10^5 GALS.	DEMINERALIZER REGENERANTS X 10^3 GALS.	TURBINE BUILDING SUMP X 10^3 GALS.	AUX. SALTWATER PUMPS X 10^6 GALS.	LIQUID RADWASTE X 10^3 GALS.	STA. EVAP. BLOWDOWN X 10^3 GALS.	CONDENSATE DUMP X 10^6 GALS.	HOLDING POND MISC. X 10^3 GALS.	DAILY TOTAL
SYSTEM										
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12								690.0		
13										
14										
15										
16										
17										
18								67.5		
19								40.5		
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

TABLE 3

DIABLO CANYON POWER PLANT

VOLUME OF WASTE DISCHARGES*

MONTH JAN. 1975

DAY	CIRCULATING WATER X 10^6 GALS.	SCREEN WASH WATER X 10^6 GALS.	DEMINERALIZER REGENERANTS X 10^3 GALS.	TURBINE BUILDING SUMP X 10^3 GALS.	AUX. SALTWATER PUMPS X 10^6 GALS.	LIQUID RADWASTE X 10^3 GALS.	STA. EVAP. BLOWDOWN X 10^3 GALS.	CONDENSATE DUMP X 10^6 GALS.	HOLDING POND MISC. X 10^3 GALS.	DAILY TOTAL
1										
2										
3										
4										
5										
6										
7								46.5		
8								108.0		
9								108.0		
10								108.0		
11								108.0		
12								108.0		
13								40.5		
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										

TABLE 4

DIABLO CANYON POWER PLANT

OIL CONTENT OF DISCHARGE

MONTH JAN. 1975

SYSTEM	DATE OF ANALYSIS	TIME	METHOD	RESULTS
...NG POND	1-7-75		CAMPHOR	NEGATIVE

TABLE 5

DIABLO CANYON POWER PLANT

pH OF DISCHARGE

MONTH JAN. 1975

SYSTEM	DATE OF ANALYSIS	TIME	RESULTS
OLDING POND	1-7-75		8.2

TABLE 6

DIABLO CANYON POWER PLANT

TEMPERATURE OF INTAKE AND DISCHARGE WATERS

MONTH NOV. 1974

DAY	TIME	INTAKE TEMPERATURE — °F	DISCHARGE TEMPERATURE — °F
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21	1000	55.0	61.0
22	1000	60.5	60.5
23	1100	56.6	55.4
24	1155	55.8	55.0
25	1115	54.8	55.8
26	1130	53.8	55.8
27	1030	54.8	54.8
28	1125	54.8	55.7
29	1030	55.2	55.6
30	1115	54.9	55.8

TABLE 6

DIABLO CANYON POWER PLANT

TEMPERATURES OF INTAKE AND DISCHARGE WATERS

HOURLY - MAY 1974

DAY	TIME	INTAKE	DISCHARGE
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21	1000		54.0
22	1000		55.5
23	1100		55.4
24	1155		55.0
25	1115		55.8
26	1130		55.8
27	1130		54.6
28	1125		55.7
29	1130		55.6
30			55.8
31			

TABLE 7

DIABLO CANYON POWER PLANT

TEMPERATURE OF INTAKE AND DISCHARGE WATERS

MONTH DEC. 1974

AY	TIME	INTAKE TEMPERATURE — °F	DISCHARGE TEMPERATURE — °F
1	1000	56.8	56.2
2	1115	56.4	55.9
3	1530	55.4	54.8
4	1030	56.0	57.0
5	1000	55.5	56.5
6	1000	55.5	55.3
7	1005	55.7	55.5
8	1000	55.9	55.7
9	1040	56.5	57.0
10	0930	55.8	55.5
11	1000	56.0	55.6
12	1000	56.5	56.5
13	1000	54.8	54.8
14	1000	53.0	53.0
15	1000	53.5	53.0
16	1100	55.0	53.5
17	1000	54.0	53.5
18	1000	53.2	530
19	1000	53.5	520
20	1030	54.5	54.5
21	1020	53.8	54.2
22	1000	53.0	51.2
23	1115	52.5	48.0
24	1010	51.8	50.5
25	1130	51.0	51.0
26	1010	52.5	52.3
27	1000	52.6	52.3
28	1000	53.4	53.1
29	1000	52.5	52.3
30	1015	54.0	53.5

TABLE 8

DIABLO CANYON POWER PLANT

TEMPERATURE OF INTAKE AND DISCHARGE WATERS

MONTH JAN. 1975

AY	TIME	INTAKE TEMPERATURE — °F	DISCHARGE TEMPERATURE — °F
1	1000	52.0	50.5
2	0900	52.5	51.0
3	1000	54.0	52.0
4	0900	53.5	53.5
5	1000	53.5	52.0
6	1100	53.5	53.3
7	0900	53.0	53.0
8	1015	52.5	51.0
9	1000	52.0	50.0
0	0930	53.0	53.0
1	1000	51.0	51.5
2	0900	50.8	51.0
3	1000	51.0	52.0
4	1800	52.5	52.0
5	1000	53.5	52.0
6	1430	54.0	54.0
7	1445	54.0	54.5
8	1130	53.0	52.5
9	1400	53.0	54.5
20	1130	52.5	53.5
21	1030	53.0	53.5
22	1030	52.5	53.0
23	1000	53.0	52.0
24	1015	52.5	53.0
25	0930	53.0	53.5
26	1000	52.5	53.5
27	1530	52.5	53.5
28	1000	52.5	52.0
29	0915	52.0	52.0

TABLE 9

DIABLO CANYON POWER PLANT

CONCENTRATION OF HEAVY METALS IN DISCHARGE

MONTH DEC. 1974 & JAN. 1975

SYSTEM	DATE OF ANALYSIS	TIME	METAL (µg/ml)							
			As	Cr	Cu	Fe	Hg	Ni	Zn	Co
HOLDING POND	12-18-74	0830			0.07			0.0		
HOLDING POND	1-6-75	0830	0.014	<0.2	<0.02	1.5 ± 10%	0.0018 ± 10%	<0.2	0.16 ± 10%	<0.0

RELATED CORRESPONDENCE

PACIFIC GAS AND ELECTRIC COMPANY

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

M. H. CHANDLER
MANAGER
STATION CONSTRUCTION DEPARTMENT
GENERAL CONSTRUCTION

March 14, 1975

Mr. Kenneth R. Jones, Executive Officer
California Regional Water Quality Control Board
1122A Laurel Lane
San Luis Obispo, California 93401

Diablo Canyon Project
Waste Discharge Monitoring Program

Gentlemen:

Submitted with this letter is the February 1975 report of the Waste Discharge Monitoring Program.

Although not required to be submitted until plant operation, information pertaining to the pH and dissolved oxygen of the receiving waters has been included.

Sincerely,

(SIGNED) M. H. CHANDLER

DBehrens:jk

cc: MARINE RESOURCES REGION
California Dept. of Fish and Game
350 Golden Shore
Long Beach, California 90802

U.S. Environmental Protection Agency
100 California Street
San Francisco, California 94106

bcc: WBAllen PACrane WJLindblad RRamsey
RACayot EEHall CKMaxfield

Attachment

PACIFIC GAS AND ELECTRIC COMPANY

STATION CONSTRUCTION DEPARTMENT

WASTE DISCHARGE MONITORING PROGRAM

DIABLO CANYON POWER PLANT SITE

FOR THE MONTH OF FEBRUARY 1975

REPORT PREPARED BY:

D. W. BEHRENS

TABLE OF CONTENTS

INTRODUCTION

Presented here is the Diablo Canyon Site vicinity waste discharge monitoring report for the period February 1 to February 28, 1975.

Unless otherwise indicated, the methodologies for chemical analysis are performed in accordance with chemical analysis procedures contained in the Diablo Canyon Site, Units I and II Plant Manual, Volume 8.

MONTHLY OVERVIEW

During the month of February, discharges were made on only three days, the 6th, 7th and 8th. These discharges were limited to 504,000 gallons of water which were stored in the holding pond.

There were no incidents causing the release of toxic materials in concentrations detrimental either to plant or animal life.

Expedited work continues on the static bioassay laboratory to have it operational at an early date.

RESULTS OF MONITORING PROGRAM

I. Monitoring of Plant Discharge

A. Volume of Waste Discharge

Daily discharges are provided in Table 1, Page 4.

B. Oil Content of Discharge

Table 2, Page 5.

C. pH of Discharge

Table 3, Page 6.

D. Temperature of Cooling Water at Intake and Discharge Structures.

Water temperatures measured at the intake and discharge structures are provided in Table 4, Page 7.

Since there was no cooling water circulated through the plant during this period, the recorded temperatures of intake and discharge are ambient sea water temperatures.

E. Static Bioassay (96) hour TLm

The bioassay laboratory facility is not yet ready for operation and there were no static bioassays accomplished during this reporting period. The Central Coast Regional Office of the California Water Quality Control Board has been verbally advised of the status of the laboratory.

F. Concentration of Radioactivity in Discharge

This measurement is not scheduled until after plant operation begins.

G. Concentration of Heavy Metals in Discharge

Table 5, Page 8.

II. Monitoring of Receiving Waters

A. Radiological Waste Monitoring Program

Reported quarterly under a separate cover entitled "Environmental Radiation Study in the Vicinity of Diablo Canyon, California", prepared by Pacific Gas and Electric Company's Department of Engineering Research.

B. Ecological Studies of Diablo Cove

To be reported following receipt of studies from the California Department of Fish and Game.

C. Ecological Studies Outside of Diablo Cove

To be reported following receipt of studies from the California Department of Fish and Game.

D. Aerial Photography of Kelp Beds

Aerial photographs will be submitted when agreement is reached with the Board as to the format of their submittal.

E. Surface Water Temperatures

Not scheduled for monitoring until after plant operation begins.

F. Stratified Water Temperatures

Not scheduled for monitoring until after plant operation begins.

G. Intertidal Photographic Record

To be accomplished during, and reported following, the May 1975 tidal transect analysis by the California Department of Fish and Game.

H. pH and Dissolved Oxygen of Receiving Waters

Referencing the letter from the Board, dated February 18, 1975, this measurement is not required until the operation of Unit 1. Measurements were taken this month, however, and are presented in Tables 6 and 7, Pages 9 and 10 respectively. Figure 1 shows the location of sampling stations.

I. Incident Light Measurements

No measurements were made during January since the circulating water pumps were not run during this period and, therefore, there was no requirement to make these measurements.

DIABLO CANYON POWER PLANT
VOLUME OF WASTE DISCHARGES*

MONTH FEB. 1975

DAY	CIRCULATING WATER X 10^6 GALS.	SCREEN WASH WATER X 10^6 GALS.	DEMINERALIZER REGENERANTS X 10^3 GALS.	TURBINE BUILDING SUMP X 10^3 GALS.	AUX. SALTWATER PUMPS X 10^6 GALS.	LIQUID RADWASTE X 10^3 GALS.	STA. EVAP. BLOWDOWN X 10^3 GALS.	CONDENSATE DUMP X 10^6 GALS.	HOLDING POND MISC. X 10^3 GALS.	DAILY TOT. X 10^3
SYSTEM										
1										0
2										0
3										0
4										0
5										0
6									135.0	135.0
7									216.0	216.0
8									153.0	153.0
9										0
10										0
11										0
12										0
13										0
14										0
15										0
16										0
17										0
18										0
19										0
20										0
21										0
22										0
23										0
24										0
25										0
26										0
27										0
28										0
29										—
30										—

TABLE 2

DIABLO CANYON POWER PLANT

OIL CONTENT OF DISCHARGE

MONTH FEB. 1975

SYSTEM	DATE OF ANALYSIS	TIME	METHOD	RESULTS
LDING POND	2-4-75	0830	CAMPHOR	NEGATIVE

TABLE 3

DIABLO CANYON POWER PLANT

pH OF DISCHARGE

MONTH FEB. 1975

SYSTEM	DATE OF ANALYSIS	TIME	RESULTS
LDING POND	2-4-75	0830	6.2

TABLE 4

DIABLO CANYON POWER PLANT

TEMPERATURE OF INTAKE AND DISCHARGE WATERS

MONTH FEB. 1975

TIME	INTAKE TEMPERATURE—°F	DISCHARGE TEMPERATURE—°F
0900	51	51
0800	52	52
0900	52	52
1000	53	53
0830	53	53
1315	53	53.5
1115	53	54
1100	54	53
1045	53	54
1015	56	52
0945	56	55
0930	54	54
0930	56	56
0930	55	55
1050	54	53
1300	54	54
1200	55	55
0900	50	50
1030	51	51
0900	51	50
0900	50	49
0925	50	48
1015	51	49.5
1100	51	50
0900	50.5	49.5
0830	50.5	50
0835	51	51
0900	50.5	50

TABLE 5

DIABLO CANYON POWER PLANT

CONCENTRATION OF HEAVY METALS IN DISCHARGE

MONTH FEB. 1975

SYSTEM	DATE OF ANALYSIS	TIME	METAL (µg/ml)							
			As	Cu	Fe	Pb	Hg	Ni	Zn	Co
LDING POND	2-4-75	0830	0.012	0.036 ± .005	1.05	<0.002	0.00009	0.018 ± .003	0.212 ± .020	0.001 ± .001

TABLE 6

DIABLO CANYON POWER PLANT

PH AT OFFSHORE SAMPLING STATIONS

MONTH FEB. 1975

STATION	DATE OF ANALYSIS	TIME	WATER DEPTH-FT.	RESULTS		
				SURFACE	MID-WATER	BOTTOM
6	2-27-75	0805	25	7.8	7.8	7.8
7	"	0815	25	7.8	7.9	7.9
8	"	0825	30	7.9	7.9	7.9
9	"	0840	15	7.8	—	7.9
10	"	0850	15	7.9	—	7.9
11	"	0855	30	7.9	7.9	7.9
12	"	0900	60	7.9	7.9	7.9
15	"	0910	35	7.9	7.9	7.9
16	"	0905	20	7.9	7.9	7.9

TABLE 1

DIABLO CANYON POWER PLANT

DISSOLVED OXYGEN AT OFFSHORE SAMPLING STATIONS

MONTH FEB. 1975

STATION	DATE OF ANALYSIS	TIME	WATER DEPTH-FT.	RESULTS		
				SURFACE	MID-WATER	BOTTOM
6	2-27-75	0805	25	7.6 ppm	7.7 ppm	6.8 ppm
7	"	0815	25	7.4	7.2	6.8
8	"	0825	30	7.4	7.2	6.8
9	"	0840	15	7.2	—	7.6
10	"	0850	15	7.8	—	8.0
11	"	0855	30	6.8	7.95	7.0
12	"	0900	60	7.6	8.3	6.5
15	"	0910	35	7.05	—	6.5
16	"	0905	20	6.0	6.0	6.0

OFFSHORE SAMPLING STATIONS – 6th 12, 15 & 16

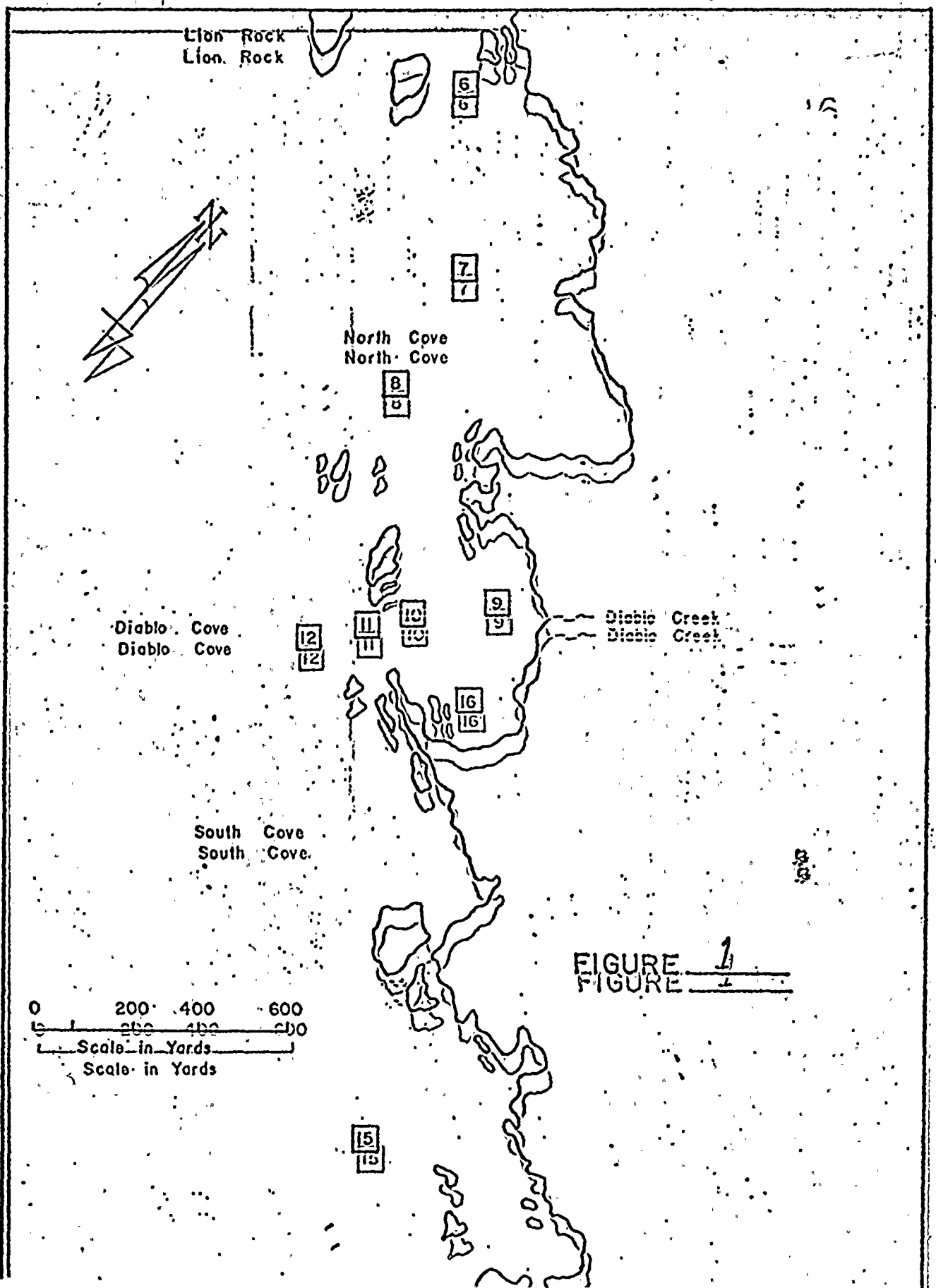

FIGURE 1
FIGURE 1

RELATED CORRESPONDENCE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
100 CALIFORNIA STREET
SAN FRANCISCO, CALIFORNIA 94111

CERTIFIED MAIL 704783
RETURN RECEIPT REQUESTED

Mr. John F. Bonner, President
Pacific Gas and Electric Company
77 Beale Street
San Francisco CA 94111

APR 3 1975

Dear Mr. Bonner:

Enclosed is a Finding of Violation issued this day by the Environmental Protection Agency, Region IX, to the Pacific Gas and Electric Company, Diablo Canyon Nuclear Generating Station, Avila Beach, California, for violation of certain conditions (specified in the Finding of Violation) of NPDES Permit No. CA0003751. This permit was issued by the California Regional Water Quality Control Board, Central Coast Region, under the NPDES permit program pursuant to Section 402(b) of the Federal Water Pollution Control Act Amendments of 1972 [33 USC 1342].

This Finding of Violation has been made pursuant to Section 309(a)(1) of the Federal Water Pollution Control Act Amendments of 1972 [33 USC 1319(a)(1)] which provides in part:

> Whenever, on the basis of any information available to him, the Administrator finds that any person is in violation of any condition or limitation which implements Section 301, 302, 306, 307, or 308 of this Act in a permit issued by a State under an approved permit program under Section 402 of this Act, he shall proceed under his authority in paragraph (3) of this subsection or he shall notify the person in alleged violation and such State of such finding.

It also provides that:

> If beyond the 30th day after the Administrator's notification the State has not commenced appropriate enforcement action, the Administrator

APR 15 1975

shall issue an order requiring such person to comply with such a condition or limitation or shall bring a civil action in accordance with subsection (b) of this section.

This letter constitutes your notice pursuant to Section 309(a)(1). The State of California has also been notified of this finding. If the California State Water Resources Control Board does not take necessary action to prevent further violations of these provisions of NPDES Permit No. CA0003751 within thirty (30) days of the date of this letter, appropriate action will be taken by the Environmental Protection Agency in accordance with Section 309(a)(1). Any such action would not, however, preclude the possibility of EPA initiating further enforcement action based on the past violations contained in the attached Notice.

Sincerely,

Frank M. Covington
Director, Enforcement Division

Enclosure

cc: John T. Wells, PG&E Dept. of
Engineering Research
Diablo Canyon Nuclear Project

In The Matter of

Pacific Gas & Electric Co. Nuclear Generating Station Diablo Canyon, Avila Beach California Under Section 309(a)(1) Federal Water Pollution Control Act Amendments of 1972, 33 USC 1319 (a)(1)	)	Docket No: CA0003751

Finding of Violation

I. This finding is made on the basis of the following facts, to wit:

A. NPDES Permit No. CA0003751 was issued to Pacific Gas and Electric (PG&E) Company Nuclear Generating Station - Diablo Canyon (hereinafter the "Company") on October 11, 1974 to become effective on that date and to expire on May 1, 1976. The permit was granted to cover an interim period of construction and testing. The final facility will consist of Units I & II. Unit I is expected to begin full operation in May 1976, followed by Unit II in 1978. The Diablo Canyon facility has a single discharge structure which will ultimately discharge 2,561 MGD of cooling water into Diablo Cove. The California Regional Water Quality Control Board, Central Coast Region issued the permit under authority of Section 402(b) of the

Federal Water Pollution Control Act Amendments of 1972 [33 U.S.C. 1342(b)]. This permit authorizes the discharge of effluents or pollutants to the Pacific Ocean at Diablo Cove.

B. NPDES Permit No. CA0003751 contains Discharge Requirement A.1. which states that the existing Waste Discharge Requirements adopted October 17, 1969, shall remain in effect. Such Waste Discharge Requirements adopted October 17, 1969 includes Requirement No. 5, which specifies that "The discharge shall be controlled to the extent that floating, suspended and settleable solids and toxic substances will not interfere with marine life, including fish, plant and bird life and the organisms upon which they depend."

C. A report sent by B. W. Shackelford of PG&E to Mr. G. Ray Arnett, Director of the California Department of Fish and Game dated January 10, 1975, states that PG&E conducted test operations of the circulation water pump system for Unit I for intermittent time periods from 24 minutes to 406 hours 1 minute duration beginning June 28, 1974 and ending October 24, 1974. Total time of operation for this period was approximately 1991 hours 25 minutes.

D. On December 12, 1974 the California Department of Fish and Game published a report entitled A Summary of the Cause and Impact of an Abalone Mortality -- Diablo Cove, San Luis Obispo, California by Michael Martin, Ph.D., Associate Water Quality Biologist, Marine Resources Region California DF&G. The following are exerpts (as quoted) from that report:

(1) "Introduction"

"On 21 July 1974, California Department of Fish and Game (DF&G) personnel discovered large numbers of dead abalone represented primarily by empty shells, but including some with meat attached. This finding was observed in Diablo Cove, San Luis Obispo County, California, in the vicinity of the Pacific Gas and Electric Company (PG&E) Diablo Canyon Nuclear Power Plant."

(2) "Diving Survey Results"

"A reconnaissance dive into Diablo Cove was conducted by DF&G personnel on July 22, the day following initial discovery of mortality. Fresh empty abalone shells and loose meats were collected accounting for a minimum of 39 mortalities. Of these mortalities within the

subtidal area, 36 were red abalones. A July 24 survey of 70 square meters of intertidal area in the south side of the discharge cove indicated 151 black abalone mortalities plus 56 living black abalone. A 72.9 percent mortality of black abalone was indicated in this intertidal sampling. No mortalities were observed in a control area, approximately one mile north of Diablo Cove which was examined on the same date."

(3) "Water Analysis"

"A literature survey of problems associated with other electrical generation facilities suggested copper, chromium, nickel, or zinc as potential toxicants. Accordingly, when the power plant circulating pumps were again started up on 31 July, DF&G took water samples within and near the power plant, to determine concentrations of potential toxic materials by chemical analysis and bioassay tests."

"Intake water revealed no heavy metal values. Outfall water (discharged to cove) showed extremely high copper values, especially in

the initial discharge. First pulse discharge water, resulting from initial start up of one circulating pump, showed a value of 1.8 mg/l. After 45 minutes the copper level in the discharge dropped to 0.04 mg/l. When the second circulating pump was started, the copper level rose to 0.50 mg/l."

(4) "On-site Bioassay Testing"

"Flow-through and static bioassay testing was also initiated at the plant site, commencing with the 31 July pump start-ups. Red and black abalone, and sea urchins...were used as test species. Samples of intake water, discharge water from the top of the discharge structure, and discharge water immediately before discharge to the Cove, were tested. After 51 hours the tests were terminated. The only abalone mortalities occurred in one static test with effluent collected in the initial surge. The initial copper concentration in that static test was 0.3 mg/l."

(5) "Abalone Tissue Analysis"

"Other tests were conducted to determine if heavy metals had been accumulated by abalone within Diablo Cove. To provide control

samples, tissues were taken from the gills and digestive gland of abalone collected from an area one mile south of Diablo Cove. Tissue samples were also prepared from abalone collected 22 July 1974, from within the influence of the power plant discharge. Both samples were analyzed for heavy metals. The results are summarized:

	Red abalone gill tissue	Red abalone digestive gland tissue
Control abalone		
Sample size	3	3
Copper (mg/kg) $\bar{x} \pm$ 1SE	15 $\pm$ 4	8 $\pm$ 4
Discharge area abalone		
Sample size	3	3
Copper (mg/kg) $\bar{x} \pm$ 1SE	65 $\pm$ 7	62 $\pm$ 8
Concentration factor	4.33	7.75

These results show a significant increase in copper values in digestive gland and gill tissues from abalone within the influence of the discharge.

"Similarly, a heavy metal comparison was made between samples from the abalone which died in the bioassay tests (initial surge effluent) and abalone in the control (intake water) sample. Only gill tissue was used...The results are summarized:

	Red abalone gill tissue	Black abalone gill tissue
Intake water abalone		
Sample size	3	3
Copper (mg/kg) $\bar{X} \pm$ 1SE	18 $\pm$ 6	25 $\pm$ 15
Discharge water abalone		
Sample size	2	4
Copper (mg/kg) $\bar{X} \pm$ 1SE	170 $\pm$ 14	308 $\pm$ 33
Concentration factor	9.44	12.3

These results show abalone concentrate copper in significant quantities which may cause mortalities at concentrations 5 to 13 levels above normal."

(6) "Algae Tissue Analysis"

"Algae samples were collected at Diablo Cove and Point Buchon on 23 August 1974. Point Buchon is approximately 3 miles north of Diablo Cove. Five species were collected and the tissues having the greatest surface area to weight ratio were analyzed. These data are summarized:

	mg/kg - fresh weight					
	Control (Point Buchon)		Diablo Cove		Concentration factor	
	Copper	Nickel	Copper	Nickel	Copper	Ni
Cystoseira osmundacea	0.32	0.74	42.0	0.70	131.25	
Laminaria andersonii	1.5	0.10	12.0	0.51	8.0	5.
Nereocystis luetkeana	0.37	0.24	1.2	0.21	3.24	

Iridaea sp.	0.59	0.35	38.0	0.28	64.4
Egregia menziesii	0.45	0.23	22.0	0.89	48.88

The copper levels in all five species of algae collected from Diablo Cove were higher. The copper levels ranged from six[1/] times higher in Nereocystis luetkeana, to one hundred thirty times higher in Cystoseira osmundacea. ...[t]he nickel level in Egregia menziesii and Laminaria andersonii were four and five times higher, respectively."

(7) "Laboratory Bioassay Testing"

"Marine static 96-hour standardized laboratory bioassays DF&G conducted showed red abalone to have a TL_{50} (= 50% survival) of 0.070 mg/l copper and black abalone had a TL_{50} of 0.050 mg/l. These values were three[2/] orders of

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1/This statement in the report is in error. It should properly be three (3) times higher, rather than six, confirmed by telephone conversation between Dr. Michael Martin, DF&G and Steve Fuller, Enforcement Division, EPA on January 12, 1975.

2/This statement in the report is in error. It should properly be two (2) orders or magnitude less than reported levels, rather than three orders of magnitude in excess of reported levels, confirmed by telephone conversation between Dr. Michael Martin, DF&G and Steve Fuller, Enforcement Division, EPA on March 20, 1975.

magnitude in excess of reported levels in the initial discharge (= 1.8 mg/l copper) from the power plant. Laboratory bioassays confirmed the hypothesis that copper was the most toxic element of the discharged effluent."

(8) "Magnitude of Impact"

"The best estimates of losses are 2,000 to 10,000 black abalone and 2,000 to 3,000 red abalone. It is recognized that these estimates cannot be supported statistically, but rather they represent our interpretation of the magnitude of the losses, considering both qualitative and quantitative information available."

II. On the basis of the facts listed above, the Director of Enforcement Division of the Environmental Protection Agency, Region IX, finds that:

A. Pacific Gas & Electric Company is in violation of Discharge Requirement A.1. of NPDES Permit No. CA0003751 in that the Company has violated Requirement No. 5 of the Waste Discharge Requirements adopted October 17, 1969 by California Regional Water Quality Control Board, Central Coast Region in that the discharge of a toxic substance, copper from the Company's Nuclear Generating Station, Diablo Canyon, has interfered with marine life by killing abalone and raising the copper concentration of certain algae.

Summary of Discharge

Violations

1. An estimated 2,000 to 10,000 black abalone have been killed due to copper concentrations discharged from power plant cooling water outfall between the months of July and October 1974.
2. An estimated 2,000 to 3,000 red abalone have been killed due to copper concentrations discharged from power plant cooling water outfall between the months of July and October 1974.
3. Algae has been contaminated due to copper concentrations to 130 times normal from power plant cooling water outfall.

April 2, 1975
Date

Frank M. Covington
Frank M. Covington
Director, Enforcement Division