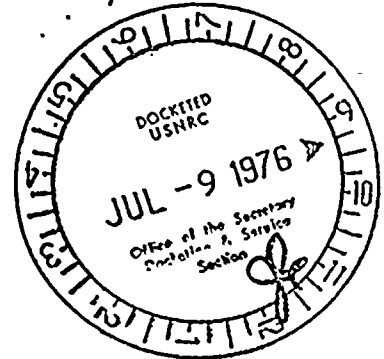


U.S. NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the matter of Pacific Gas and Electric Company
(Diablo Canyon Nuclear Power Plant, Units 1 and 2)
Docket Nos. 50-2750L and 50-323-0L



RESPONSE OF WILLIAM E. CORNWELL TO
INTERROGATORIES FILED BY PACIFIC GAS AND
ELECTRIC COMPANY DATED JUNE 16, 1976

Please outline the facts developed since September 1973 indicating that the bull kelp population inside Diablo Cove, in the southeast portion of North Cove, and the Pecho Rock area will be totally deleted?

The contention is based on the following:

1. SIZE AND MAKEUP OF THE THERMAL PLUME

How well does PG&E's physical model predict the prototype? the Addendum states:

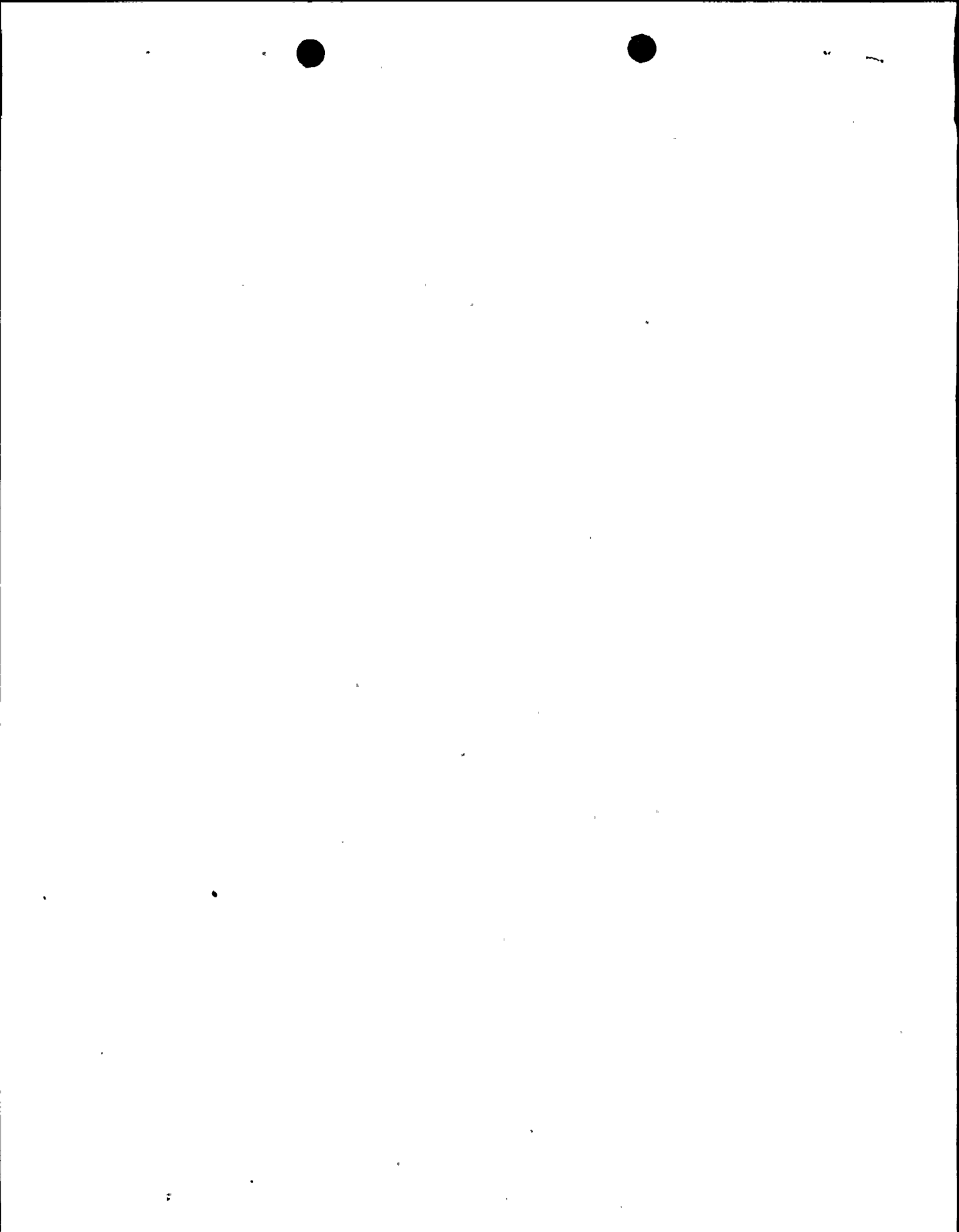
" Because of the spacial and temporal complexities in the current structure of both the model and prototype and because of the very irregular bathymetry in the cove, it is difficult to determine accurately the degree to which the model predicts the prototype behavior. These results (model and prototype comparison) strengthen the Staff's belief that model results can be used to predict the general behavior of the thermal plume in the prototype."

The Addendum goes on to say :

"the extent to which the physical model predicts, quantitatively, the features of the prototype thermal plume cannot be determined more accurately without considerably more comparative testing of the model and prototype. Therefore, the Staff believes the most practical method of obtaining a more quantitative assessment of thermal plume behavior will be the establishment of an extensive current and temperature monitoring program during initial operation of Unit 1. The data so obtained can be used to validate and further calibrate the physical model."

PG&E's ER, Supplement #8, " Report on Model Study of Cooling Water System", agrees with this Staff proposal:

" proof of whether or not a hydraulic model of a complicated area and process can be used to predict accurately the prototype in the case of a bouyant discharge can be obtained after Unit 1 becomes operational. "



The physical model does not make an adequate description because the evidence is neither substantial nor reasonable. It does not conclude the specific nature of the effect of the discharge heat on Diablo Cove and outside the Cove, because even though Staff and Applicant profess model and prototype comparisons show similarities, RG&E is relying on post operative monitoring to confirm the limits of environmental effects. As has already been argued in connection with NEPA hearings, NRC responsibility under that act is to predict the environmental effects of the proposed action before the action is taken and these effects fully known. Post operational monitoring cannot substitute for a valid preoperational environmental assessment.

If the physical model were to adequately describe the environmental effect of the prototype on the ocean's environment, there would be no need to describe those effects further through calibration.

Assuming that the physical model does simulate prototype operation, does the record indicate no more than a reasonable and acceptable amount of damage outside the Cove? RG&E's evaluation as stated in EK Supplement 8:

"...the surface temperature at the center of the entrance (west) never exceeded $6\frac{1}{2}$ degrees C above ambient temperature, and the temperature about 13 feet beneath the surface (MSL) was almost always less than 2 degrees C above ambient for downcoast and "no" currents, and less than $3\frac{1}{2}$ degrees C above ambient for the moderate upcoast current condition. Once the mixing warm water discharge jet reached the region seaward of Diablo Cove, the warm water was confined to the surface few feet with very little change from ambient occurring more than 10 feet beneath the surface..."

And in the addendum, p. 3-10:

"The 4 degree isotherm will always emerge from the Cove, sometimes covering an extensive area of hundreds of acres but is not expected to be as large as a square mile (640 acres) for downcoast currents. For upcoast currents, the 10 degree surface isotherm can extend well out of the west cove entrance, possibly as much as several thousand feet. This condition was most conspicuous during tow-unit operation and during tests with a DT of 22 Deg. F. The 4 degree surface isotherm is expected always to emerge from the Cove an extensive area. The maximum could not be determined in the model, however, due to the limited extent of the thermistor array and the size of the model."

In other words, The plume is expected to be a surface phenomenon upon exiting Diablo Cove, with bottom temperatures considerably higher than surface temperatures. And relative unimportance is being assigned to the far field 4 and 5 degree isotherms with regard to environmental effects, which introduces #:

2. THERMAL RESPONSE OF BULL KELP

Bull kelp sexuality initiates from the surface fronds. Several Sori develop on each blade. Preceding zoospore release, mature Sori break free from the blade and drift to the ocean floor (See: CDFG Report #19, "The marine Environment in the Vicinity of Diablo Cove with Special Reference



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to Abalones and Bony fishes", pg. 82). A slight increase in surface temperature may interrupt this process. There is little or no existing information in this area, and verification or not has not been made by FG&E. They have only experimented with some sporophyte juveniles over a 2 month period. Otherwise, as reported in, "Environmental Investigations at Diablo Canyon, 1974", Chapter 5, they are observing three distinct beds in benthic sea water temperature. This is interpreted in the Addendum as

"information which will provide the necessary background data for defining the physical environment during each stage of the algae's annual life cycle and furnish baseline information for any subsequent changes in the kelp's density."

Is this sufficiently reasonable evidence to adequately describe this algae's thermal response? Here again, the applicant is banking on post operative monitoring for its environmental responsibilities.

Bull kelp has a recorded range from Pt. Conception, Cal. to Shumagin Island, Alaska, some 2500 miles, although I have never observed a strand south of the Port San Luis Coast Guard Station, 4 miles south of the plant, where Giant kelp begins to grow. This, as I am trying to gather evidence on, is a result of current transported changes in temperature.

3. DEFINITION OF EFFECTED AREAS AND WHETHER IT IS SIGNIFICANT TO DIVING

Damage outside the Cove may be much greater than predicted by FG&E and the Staff, particularly if several degree increase in surface temperature adversely effects bull kelp sexuality. Predictions indicate a 4 degree isotherm could penetrate Field's Cove, Lion Rock area, upcoast. And downcoast, the denser beds along the coast to Pecho Rock. Although the areas north of the plant are temporarily gone to divers, all of the area from Pt Buchon to Port San Luis is recoverable and crucial to the diving industry in central California, as the otter is under consideration for management by Fish and wildlife Service, Dept. of the interior,

I declare under penalty of perjury that the foregoing response to the Interrogatory is true and correct to the best of my knowledge, information, and belief.

Sincerely Yours,

William P. Cornwell
William P. Cornwell

July 2, 1976

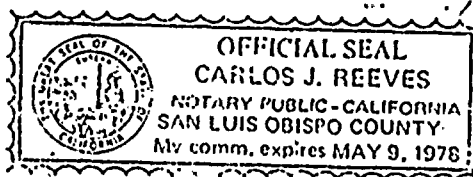
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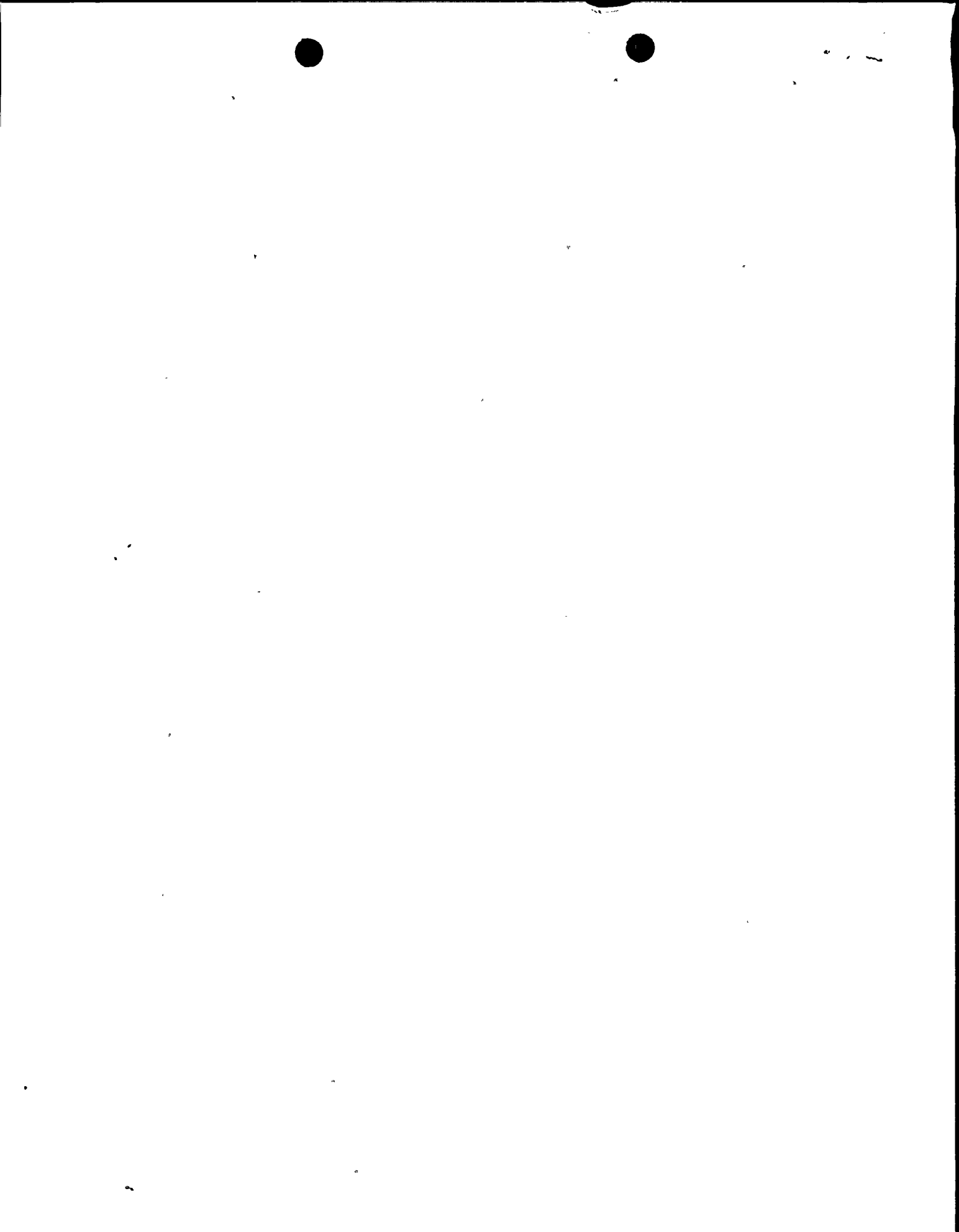
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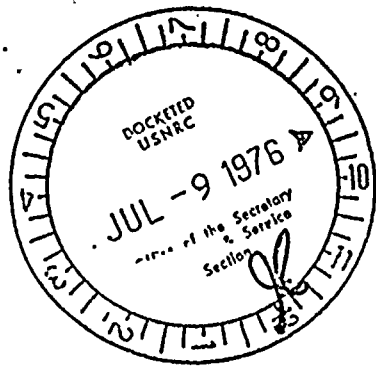
CC/

Elizabeth S. Bowers, Esq.
Mr. Glen O. Bright
Dr. William E. Martin
Andrew J. Skaff, Esq.
James R. Tourtellotte, Esq.
Secretary, USMRC
Mr. Frederick Missler
Mr. Gordon and MS. Sandra A. Silver
Ms. Elizabeth E. Apfelberg
Rayo Fleming





U. S. NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the matter of Pacific Gas and Electric Company
(Diablo Canyon nuclear Power Plant, Units 1 and 2)
Docket Nos. 50-275-OL and 50-323-OL

RESPONSE OF WILLIAM P. CORNWELL TO INTERROGATORIES FILED BY STAFF DATED JUNE 21 1976

I do not rely upon Interrogatory Nos: 1, 2, 3, 5 and 6.

Staff should refer to my June 2, 1976 response to Interrogatory filed by PG&E in answer to Interrogatories 4, 7, 8, 9 and 10.

11. Foam inside and outside of Diablo Cove will damage bull kelp

light intensity is the most important factor in bull kelp growth and reproduction (See: "The marine environment in the Vicinity of Diablo Cove with Special Reference to Abalone and Bony fishes", CDFG, 1973, Pg. 92 and FES, Pg. A2-6-12).

12. The applicant has failed to assess bull kelp response to chlorine.

the additional cumulative burden of a chlorinated thermal plume, as a result of titanium tubing, be investigated outside the Cove prior to operation (See: July 2, 1976 response to PG&E Interrogatory).

13. For reasons stated in Interrogatories 4, and 7-12, the Atomic Safety and Licensing Board should consider modification of the shoreline discharge structure.

14. Intake Cove be restored to its unaltered state

PG&E and Staff have stated that a new ecosystem is forming in the Cove. PG&E has a responsibility to return the Cove to its original state because of an adverse environmental condition existing there that initially could have been avoided.

15. PG&E should clean up the residual effects of discharging copper in Diablo Cove

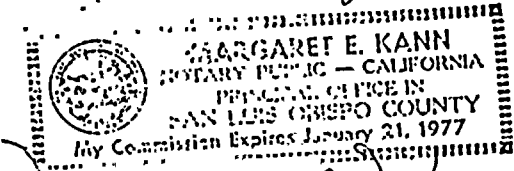
See the June 23, 1975 motion to the ASLB.

I declare under the penalty of perjury that the following responses to the Interrogatories are true and correct to the best of my knowledge information and belief.

CC/

- Elizabeth S. Bowers, Esq.
- Mr. Glen O Bright
- Dr. William E. Martin
- Andrew J. Skaff, Esq.
- Secretary, USNRC
- Philip A. Crane, JR., Esq.
- Mr. Frederick Eissler
- Mr. Gordon and Ms. Sandra A. Silver
- Ms. Elizabeth E. Apfelberg
- Raye Fleming

Sincerely Yours
William P. Cornwell
William P. Cornwell
July 3, 1976
July 3, 1976





1

COPY

PACIFIC GAS AND ELECTRIC COMPANY

PG&E + 77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211

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June 21, 1976

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GILBERT L. HARRICK
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SENIOR COUNSEL

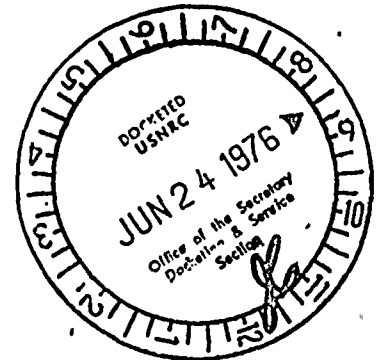
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ATTORNEYS

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

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



Dear Mrs. Bowers:

Enclosed is a copy of the quarterly report (April and May, 1976) of the Waste Discharge Monitoring Program for Diablo Canyon Site.

Very truly yours,

Philip A. Crane, Jr.

Enclosure
CC.w/enc.: ASLB
Parties



4

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PACIFIC GAS AND ELECTRIC COMPANY

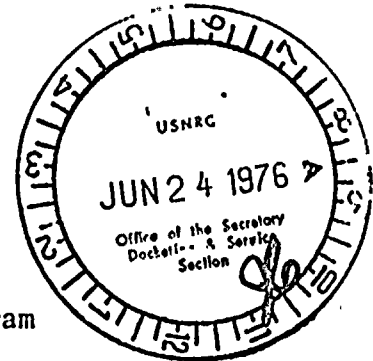
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R. S. DAIN
MANAGER
STATION CONSTRUCTION DEPARTMENT
GENERAL CONSTRUCTION

June 11, 1976

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

Waste Discharge Monitoring Program
Diablo Canyon Project



Gentlemen:

The quarterly report (April and May, 1976, March previously submitted) of the Diablo Canyon Project Waste Discharge Monitoring Program is enclosed.

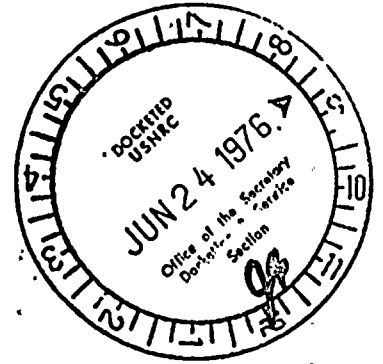
Sincerely,

DWBehrens (69-1771):jk

A handwritten signature in cursive script, appearing to read 'R. S. Dain'.

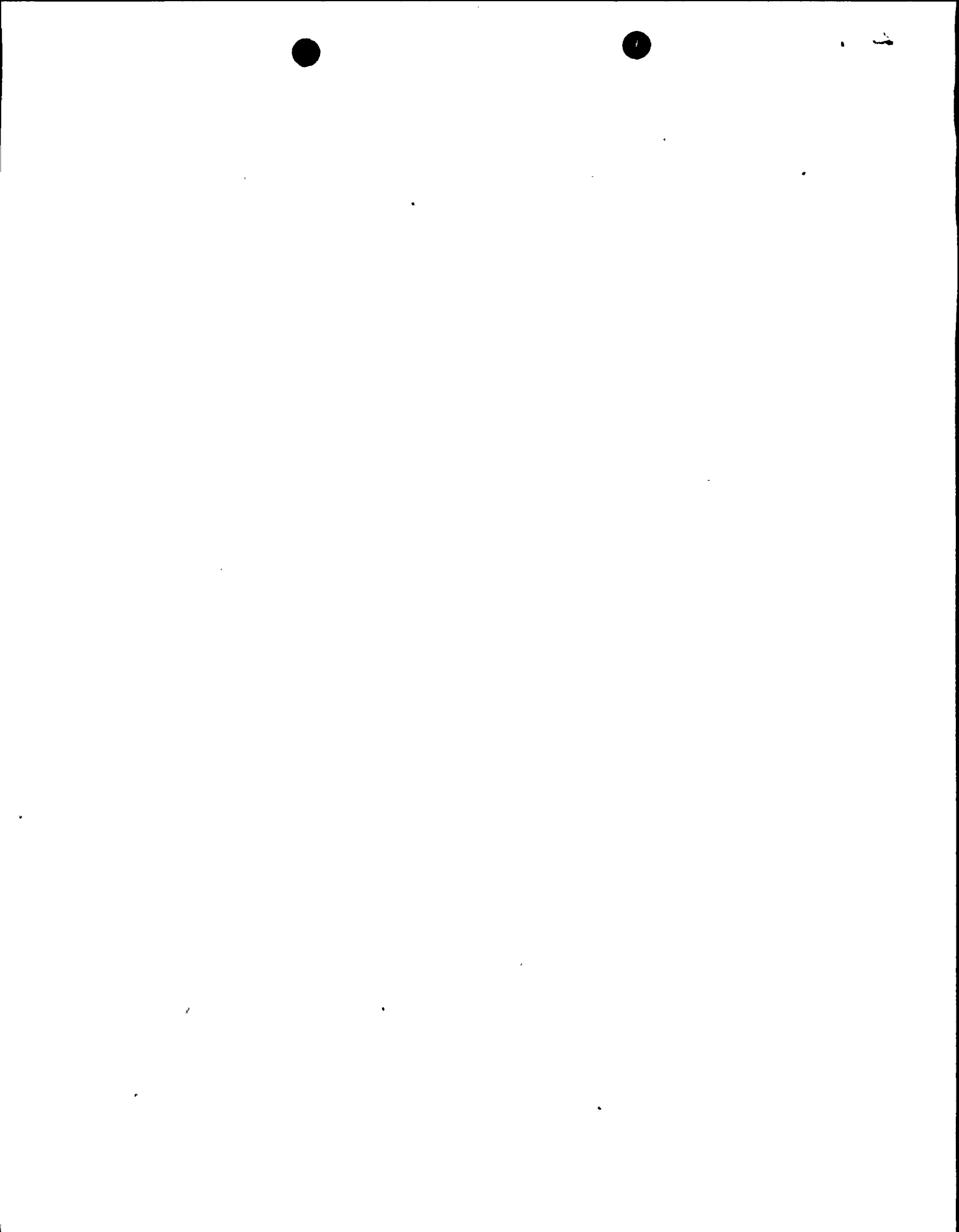
cc: MARINE RESOURCES REGION
California Dept. of Fish and Game
350 Golden Shore
Long Beach, CA 90802

Regional Administrator
Environmental Protection Agency
Region IX
100 California Street
San Francisco, CA 94111



PACIFIC GAS AND ELECTRIC COMPANY
STATION CONSTRUCTION DEPARTMENT

QUARTERLY REPORT ON
WASTE DISCHARGE MONITORING AT
DIABLO CANYON POWER PLANT SITE
DURING THE MONTHS OF APRIL AND MAY 1976



RESULTS OF MONITORING PROGRAM

In conformance with the adoption of the new NPDES permit for Diablo Canyon Nuclear Power Plant, the first quarterly monitoring report is due.

No plant discharges were made into Diablo Cove from any waste discharge system during this period (April 1-May 31, 1976).

Waste monitoring will be made when discharges from the plant systems resume.



COPY

PACIFIC GAS AND ELECTRIC COMPANY

PG&E + 77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211

June 21, 1976

JOHN C. MORRISSEY
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MALCOLM H. FURBUSH
ASSOCIATE GENERAL COUNSEL

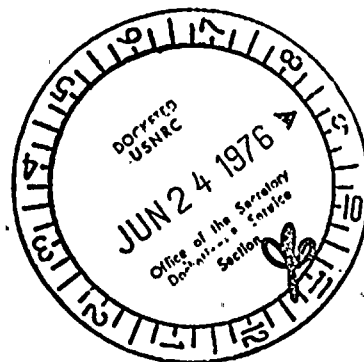
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Mr. J. F. Stolz, Chief
Light Water Reactors
Branch No. 1
Division of Project Management
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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



Dear Mr. Stolz:

Your letter of June 11, 1976 asked that we inform you of our schedule for supplying additional information required for resolution of items which remain outstanding in the safety review for Diablo Canyon, Units 1 and 2.

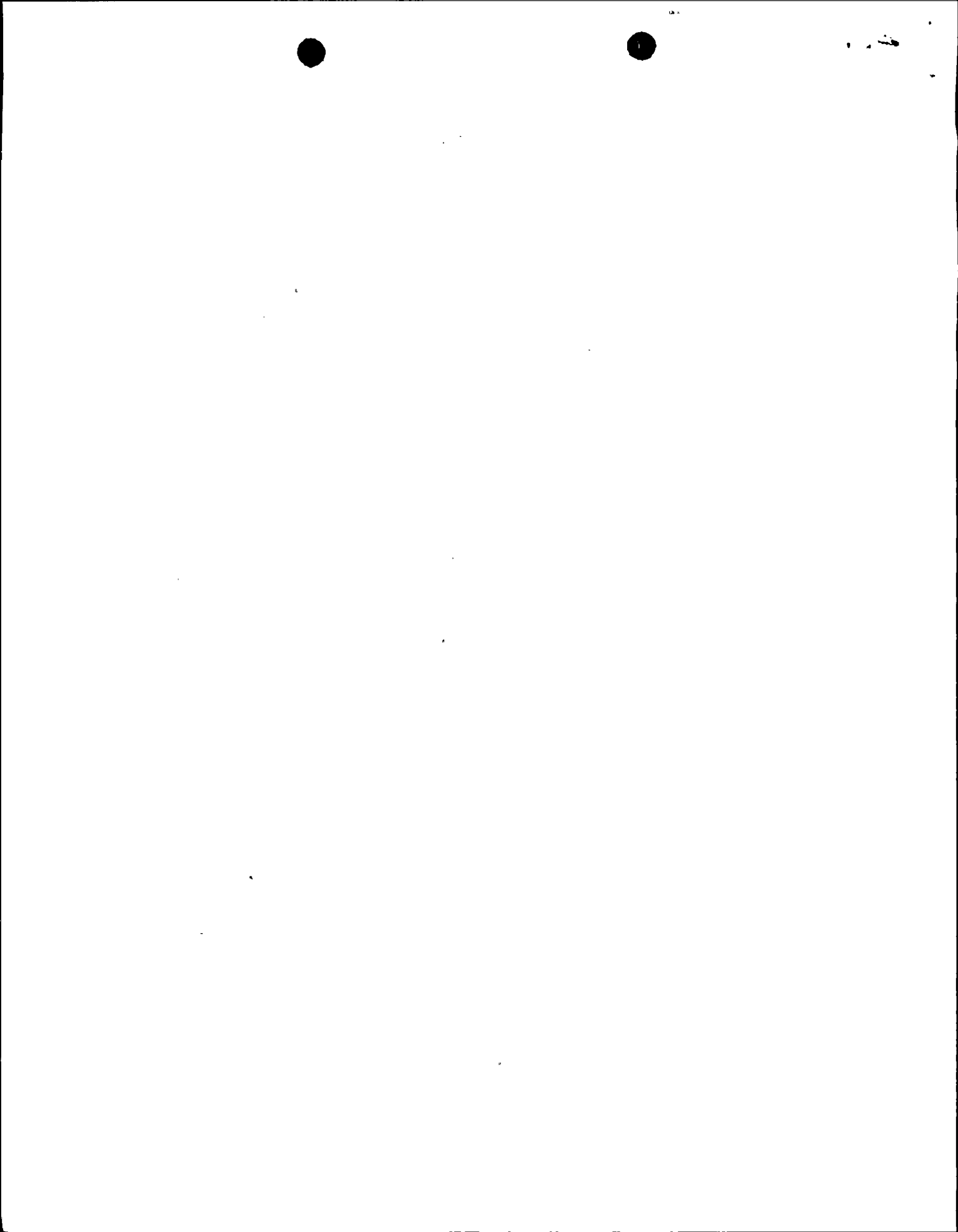
The Regulatory Staff has requested additional information for Items 3, 4, 5 and 9, as shown in the enclosure to your letter. Our schedule for submittal of this information is as follows:

Item 3. Pipe Break Outside Containment

Further description of the protection provided for conduits K6492 and K9966 was informally provided to the Regulatory Staff on June 21, 1976. This description will be formally submitted by June 30, 1976.

Item 4. Seismic Qualification of Category I Instrumentation and Electrical Equipment

A list of Westinghouse equipment with references for seismic qualifications will be included in the FSAR by July 15, 1976. The remainder of the information requested will be submitted in Amendment 43 to our application by June 30, 1976.



COPY

Mr. J. F. Stolz

2

June 21, 1976

Item 5. Single Failures in Motor-Operated Valves

Discussions with the Regulatory Staff have been completed. Additional information will be submitted in Amendment 43 to our application by June 30, 1976.

Item 9. Containment Structural Integrity Test

The additional information requested will be submitted by July 15, 1976.

Very truly yours,

Philip A. Crane, Jr.

CC: ASLB
Parties



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v
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