

COPY

PACIFIC GAS AND ELECTRIC COMPANY

PG&E

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July 12, 1982

Mr. R. H. Engelken, Regional Administrator
U.S. Nuclear Regulatory Commission, Region V
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596-5368

Re: Docket No. 50-275, OL-DPR-76
Docket No. 50-323
Diablo Canyon Units 1 and 2
Changes to NPDES Permit

Dear Mr. Engelken:

The National Pollutant Discharge Elimination System (NPDES) Permit, Order No. 82-24 of the California Regional Water Quality Control Board, Central Coast Region, was amended on June 11, 1982 by Order No. 82-54. In accordance with the requirements of Section 3.2 of Appendix B (Environmental Protection Plan) of the Facility Operating License, enclosed is a copy of Order No. 82-24 along with Order No. 82-54.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Very truly yours,

8207150338 820712
PDR ADOCK 05000275
P PDR

Philip A. Crane, Jr.

Enclosures
cc w/encl:
Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Service List

DS 03

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
1102-A Laurel Lane
San Luis Obispo, California 93401

ORDER NO. 82-54
Amending NPDES Permit No. CA0003751

WASTE DISCHARGE REQUIREMENTS
FOR
PACIFIC GAS AND ELECTRIC COMPANY
DIABLO CANYON POWER PLANT
UNITS 1 AND 2
SAN LUIS OBISPO COUNTY

The California Regional Water Quality Control Board, Central Coast Region, (hereafter Board), finds:

1. On January 14, 1982, the Board adopted Order No. 82-24 NPDES Permit CA0003751, Waste Discharge Requirements for Pacific Gas and Electric Company, Diablo Canyon Power Plant, Units 1 and 2, San Luis Obispo County.
2. Discharge Prohibition A.6., Order No. 82-24, provides as follows:

Discharge of elevated temperature wastes exceeding ambient temperatures is prohibited until July 1, 1982, except for discharge from safety equipment required for non-power production operations and for low power testing provided the temperature increase shall not exceed 2°F. Prior to July 1, 1982, the Board will consider modification of this prohibition in accordance with provisions of this order. If this Board has not concluded its deliberation on this prohibition by July 1, 1982, it shall remain in effect until the Board acts on this prohibition.

3. Provision D.2., Order No. 82-24, provides as follows:

In order for the Board to consider modification of Discharge Prohibition A.6., the discharger shall submit prior to April 1, 1982, a technical report which includes the following:

- (a) Information on and evaluation of alternative plans to reduce the heat and volume of the cooling water discharge which may include alternative cooling systems or beneficial use of waste heat.
 - (b) further information regarding anticipated and possible thermal and volume effects, including heat treatment, on the beneficial use of ocean waters.
4. That Pacific Gas and Electric Company submitted on March 30, 1982, the technical reports required by the Board entitled "Thermal Discharge Assessment Report" and "Assessment of Alternatives to the Existing Cooling Water System".

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
1102-A Laurel Lane
San Luis Obispo, California 93401

AMENDED ORDER NO. 82-24
NPDES NO. CA0003751

WASTE DISCHARGE REQUIREMENTS
FOR
PACIFIC GAS AND ELECTRIC COMPANY
DIABLO CANYON POWER PLANT
UNITS 1 AND 2
SAN LUIS OBISPO COUNTY

The California Regional Water Quality Control Board, Central Coast Region (hereafter Board), finds that:

1. The Pacific Gas and Electric Company (hereafter discharger) applied for waste discharge requirements and a permit to discharge wastes under the National Pollutant Discharge Elimination System and was issued a Permit on April 9, 1976 Order No. 76-11. The Discharger applied for reissuance of the permit by submission of a preliminary Report of Waste Discharge dated January 27, 1981. The NPDES Permit application form 2. C. Part V; A, B, & C., was completed June 26, 1981. An analysis for toxic constituents of the discharge was submitted to the Regional Board on June 26, 1981. Further analyses will be conducted after commercial operation begins. Additional factual information was submitted by the discharger throughout the public hearing process. The Board has requested additional information on alternative methods of reducing heat and volume of the discharge.
2. The discharger proposes to discharge wastes from Diablo Canyon Nuclear Power Plant into the Pacific Ocean at Diablo Cove, a water of the United States, at points 12 miles southwest of San Luis Obispo (Latitude 35° 12', Longitude 120° 51') and as shown on Attachment "A" included with this Order.
3. The potential 2.67 billion gallon per day discharge consists primarily of heated seawater. To this flow are added smaller amounts of in-plant chemical wastes and low-level radioactive wastes.
4. Waste discharges are shown schematically on Attachment "B" included with this Order and described as follows:

Discharge 001 D-Liquid Radioactive Waste Treatment System
Effluent, 3×10^4 GPD (Intermittent)

Radioactive liquid wastes from the reactor system will be collected, treated, and monitored in a radioactive liquid waste treatment system. This system includes storage tanks to permit radioactive decay, ion exchangers, and filters to remove radioactive matter from the waste streams. High-level wastes produced by these processes (evaporator concentrates, ion-exchange resins, filter media) will be collected and packaged for ultimate off-site shipment to an approved burial site. After decay and/or treatment, individual batches of low level liquid waste will be sampled and analyzed to determine compliance with discharge limits. The batch will then be discharged through a 5-micron filter into the cooling water discharge. Wastes from other plant systems discharged into this system include boric acid, lithium hydroxide, sodium hydroxide, ammonium hydroxide, hydrazine, sodium sulfate, chemical laboratory drains, hot shower and laundry wastes, metal cleaning wastes, and a portion of the firewater system flush water. Treatment includes distillation and filtration.

Discharge 001 E-Service Cooling Water 5.62×10^6 GPD

This system provides once-through cooling water for the service cooling water system.

Discharge 001 F-Turbine Building Sump, 9.8×10^4 GPD
(Intermittent)

Floor drainage from the turbine building and reverse osmosis equipment room, as well as a portion of the firewater system flush, will be collected in sumps and treated in an oil-water separator prior to discharge.

Discharge 001 G-Reverse Osmosis Blowdown, 7.2×10^4 GPD

Waste from a reverse osmosis demineralization system containing dissolved solids, sulfuric acid, sodium hexametaphosphate, sodium hypochlorite and sodium bisulfite (for dechlorination) will be discharged to the cooling water stream.

Discharge 001 H-Condensate Demineralizer and Seawater Evaporator
Demineralizer Regenerant, 5.2×10^4 GPD (Intermittent)

- a.) Waste regenerant solution from the steam-cycle condensate demineralizer will normally be discharged once per day for each unit.

The discharge constituents are salts present in seawater which enter the steam cycle through main condenser leakage, iron and copper corrosion products with added sulfuric acid (1,700 pounds per regeneration), sodium hydroxide (850 pounds per regeneration) and calcium chloride (65 pounds per regeneration).

Discharge 002 - Intake Structure Building Floor Drains, 3 x 10⁵ GPD (Intermittent)

Drainage from within the cooling water intake structure, as well as a portion of the firewater system flush, will be collected in sumps and discharged inside the breakwater adjacent to the intake racks.

Discharge 003 - Intake Screen Wash, 5.62 x 10⁵ GPD

Solid material collected on the intake screens that is native to the ocean will be pumped back to the ocean at a point located at the foot of the west breakwater of the intake cove.

Discharge 004 - Thermal Effects Laboratory Discharge 1.44 x 10⁶ GPD

Seawater is pumped through tanks used for observation of, and experimentation with, marine organisms and discharged to the intake cove.

Discharge 005 - Yard Storm Drains, Flow Not Determined.

Stormwater runoff is collected in a drainage system and discharged to the ocean near the plant cooling water intake. This discharge also contains a portion of the firewater system flush.

5. Temperature of cooling water is proposed to be raised approximately 20°F during normal thermal operation. The cooling water temperature increase may be greater than 20°F during condenser heat treatment or transient conditions due to load rejection, steam dump, generator trip, conditions resulting from operation of engineered safety features, or during periods of reduced flow resulting from condenser tube sheet plugging or loss of the circulating water pump(s) flow. Periodic thermal treatment of each cooling water system (about once per month for each of the four systems or about once per week) is proposed to demussel and minimize growth of marine organisms in the piping and heat exchangers. The required frequency of this operation varies seasonally but will normally have a duration of not more than a few hours per month. The maximum temperature difference between intake and discharge during demusseling is expected to be 50°F. if pumps of only one unit are operating.
6. A chlorination system is proposed to control slime and algae in the once-through condenser cooling water.
7. Evidence presented at the hearings indicates that if chlorination is used, the concentration of chlorine allowed in the discharge will minimize degradation of beneficial uses.
8. Sewage will receive treatment in septic tanks prior to discharge to leachfields.

15. Effluent limitation guidelines for the Steam Electric Power Generating Point Source Category have been promulgated by the United States Environmental Protection Agency (EPA) requiring the application of the best practicable control technology currently available (BPT). Additional effluent limitation guidelines have been proposed, but not promulgated, by the EPA, including effluent limits for best available technology economically achievable (BAT). Some effluent limitations contained in this order are derived from the promulgated federal guidelines, some from the proposed guidelines, and others are based on the "Ocean Plan". Together, they are considered the best available technology in the judgment of the Board. Limits are subject to reconsideration when the final guidelines are promulgated.
16. Best available technology economically achievable (BAT) for Diablo Canyon Power Plant should result in minimal discharge of heavy metals which result from dissolution of metal in the plant piping system and from other sources. Such quantities in many cases may be significantly less than State Ocean Plan allowable concentrations. Discharge requirement found in Paragraph B.1.b. are based on limits aimed at maintaining discharges of metal as low as reasonably achievable.
17. Section 316 (b) of the Clean Water Act requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact. The large volume of this discharge may require special procedures to minimize entrainment and impingement of marine organisms.
18. There are difficulties in measuring constituents listed in B.1.b. at low levels. Many of the low volume streams have the potential for contributing significant concentrations of heavy metals and other toxic constituents and for diversion to further treatment if necessary. Since analytical procedures are more reliable at higher concentrations, the Board considers internal monitoring of various waste streams to be reasonable, desirable and necessary.
19. The presently available method for calculation of toxicity in Seawater does not allow for measurement of lower limits than that given in B.1.b.
20. Waste discharge requirements for this discharge are exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Section 13389 of the California Water Code.

- (c) 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. (FES) The NRC staff will require that, during heat treatment, no chemicals that can be controlled be added to the effluent stream (FES, p. 3-50). The NRC staff will require that the effluent be monitored for total available chlorine and the cove, for acute and chronic effects (FES) and that total available chlorine be limited to 0.1 ppm in the discharged cooling water (FES, p. 3-46).
- (d) There will be very little, if any decline in the concentration of dissolved oxygen in the discharged cooling water. (FES)
- (e) The FES stated: 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 warmwater-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.
- (f) The Addendum predicted loss of 10-20 acres of bull kelp, but concluded that this will not be a serious impact to those aquatic species that depend on kelp for food or habitat. (p. 5-4). Because the populations of abalone and sea urchins within D.C. have been reduced to a small fraction of their former abundance primarily due to factors unrelated to the plant (including sea otter predation, copper discharge from the plant and a red tide (Addendum, p. 2-21), the additional impact of the thermal plume will be small (Addendum). However, the Cove will not afford a viable habitat for abalone in those areas where the thermal plume remains in constant contact with the bottom. (Addendum p. 5-5)
- (g) 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. (FES)
- (h) 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. (FES)

- (q) The issue of alternative cooling systems will be decided by the California Regional Water Quality Control Board in connection with the applicant's request for an exemption from applicable thermal discharge prohibitions under Section 316(a) of the FWPCA. (Addendum)
22. Testimony received by the Board during the hearing shows that the large volume of the proposed discharge combined with the temperature increases in the proposed discharge may not assure protection of some beneficial uses of water within Diablo Cove. Temperature levels in Diablo Cove, especially during demusseling operations, may cause stress of and increase mortality rates of marine organisms.
23. That Pacific Gas and Electric Company submitted on March 30, 1982, the technical reports required by the Board entitled "Thermal Discharge Assessment Report" and "Assessment of Alternatives to the Existing Cooling Water System".
24. Implementation Provisions of the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" state that "Existing and future dischargers of thermal waste shall conduct a study to define the effect of the discharge on beneficial uses and, for existing discharges, determine design and operating changes which would be necessary to achieve compliance with the provisions of this plan."
25. The Ocean Plan states that "The Regional Board shall require dischargers to conduct self-monitoring programs and submit reports necessary to determine compliance with the waste discharge requirements, and may require dischargers to contract with agencies or persons acceptable to the Regional Board to provide monitoring reports. Such monitoring programs shall comply with Guidelines for Monitoring the Effects of Waste Discharges on the Ocean which shall be issued by the Executive Director of the State Board."
26. On July 13, 1981, the Board notified the discharger and interested agencies and persons of its intent to revise waste discharge requirements for the proposed discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
27. The Board in public meetings on Sept. 11 & 24, Oct. 9, 29 & 30, Nov. 13 & 14, 1981, Jan. 14, May 14, and June 11, 1982 considered all comments pertaining to the discharge.

	<u>6-Month Median</u>	<u>Daily Maximum</u>	<u>Instan- taneous Maximum</u>
Grease and Oil	5.0	10.0	20.
Ammonia (expressed as nitrogen)	0.1	0.2	0.3
Toxicity Concen- tration	0.7 tu	-	-
Total Chlorinated Pesticides	0.002	0.004	0.006
Radioactivity	Not to exceed limits specified in Title 17, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269 of the Cali- fornia Administrative Code. In addi- tion the Provisions of 10 CFR20 and 10CFR50 shall apply.		

- c. The daily maximum total chlorine residual concentration in Effluent Limitation B.1.b. shall not be maintained for longer than 30 minutes per day per generating unit. Longer periods of chlorination may be used as long as the maximum concentration is reduced to comply with the time-concentration relationship contained in the California Ocean Plan. Chlorination periods shall not exceed two hours per day per generating unit at any time. At least thirty minutes must separate the chlorine discharged from each one-half condenser unit.
- d. During any Six-Month period, the effluent mass emission rate for each constituent listed in Effluent Limitation B.1.b. shall not exceed the "Maximum Allowable Six-Month Median Mass Emission Rate" as calculated from the total waste flow occurring on the day of the Median effluent concentration and the constituent concentration specified in the "Six-Month Median" column of Effluent Limitation B.1.b.
- e. The discharge shall contain a minimum dissolved oxygen concentration of 5.0 mg/l at all times.
- f. The discharge shall not exceed 2.67 billion gallons per day.
- g. The temperature measured at the point⁴ of discharge shall not exceed 20°F. over that of the intake except during heat treatment.
- h. During discharge of heat treatment effluent from Unit 1, Unit 2 circulating water pumps shall be operated at full capacity with no commercial load. Temperature measured at the point of discharge of Unit 1 shall not exceed 100°F.

9. Discharge 001, 002, 003, 004, and 005:

- a. The discharge of waste shall not cause a pollution as defined in Section 13050(1) of the California Water Code.
- b. The discharge of waste shall not cause a nuisance as defined in Section 13050(m) of the California Water Code.

C. Receiving Water Limitations

(Receiving water quality is a result of many factors, some unrelated to the discharge. This permit considers these other factors, and is designed to minimize the adverse influence of the discharge in the receiving water).

1. Elevated temperature wastes shall not adversely affect beneficial uses.

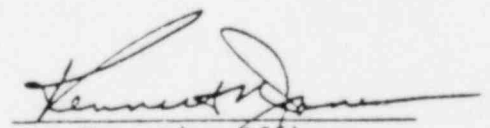
Waste discharges shall not individually or collectively cause:

2. Floating particulates or grease and oil to be visible.
3. Esthetically undesirable discoloration of the ocean surface.
4. Significant reduction in transmittance of natural light in ocean waters which would cause marine communities to be degraded.
5. Change in the rate of deposition of inert solids and the characteristics of inert solids in ocean sediments such that benthic communities are degraded. Degradation shall be determined by analysis of the effects of waste discharge on species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species.
6. The dissolved oxygen concentration in the ocean waters to be depressed more than 10 percent from that which occurs naturally.
7. The pH in the ocean waters to be changed more than 0.2 units from that which occurs naturally.
8. Dissolved sulfide concentrations of waters in and near sediments to increase significantly above those present under natural conditions.
9. Foam and froth that causes marine communities to be degraded.
10. Objectionable aquatic growth.
11. Concentrations of materials in marine sediments to increase to a level which would degrade marine life.

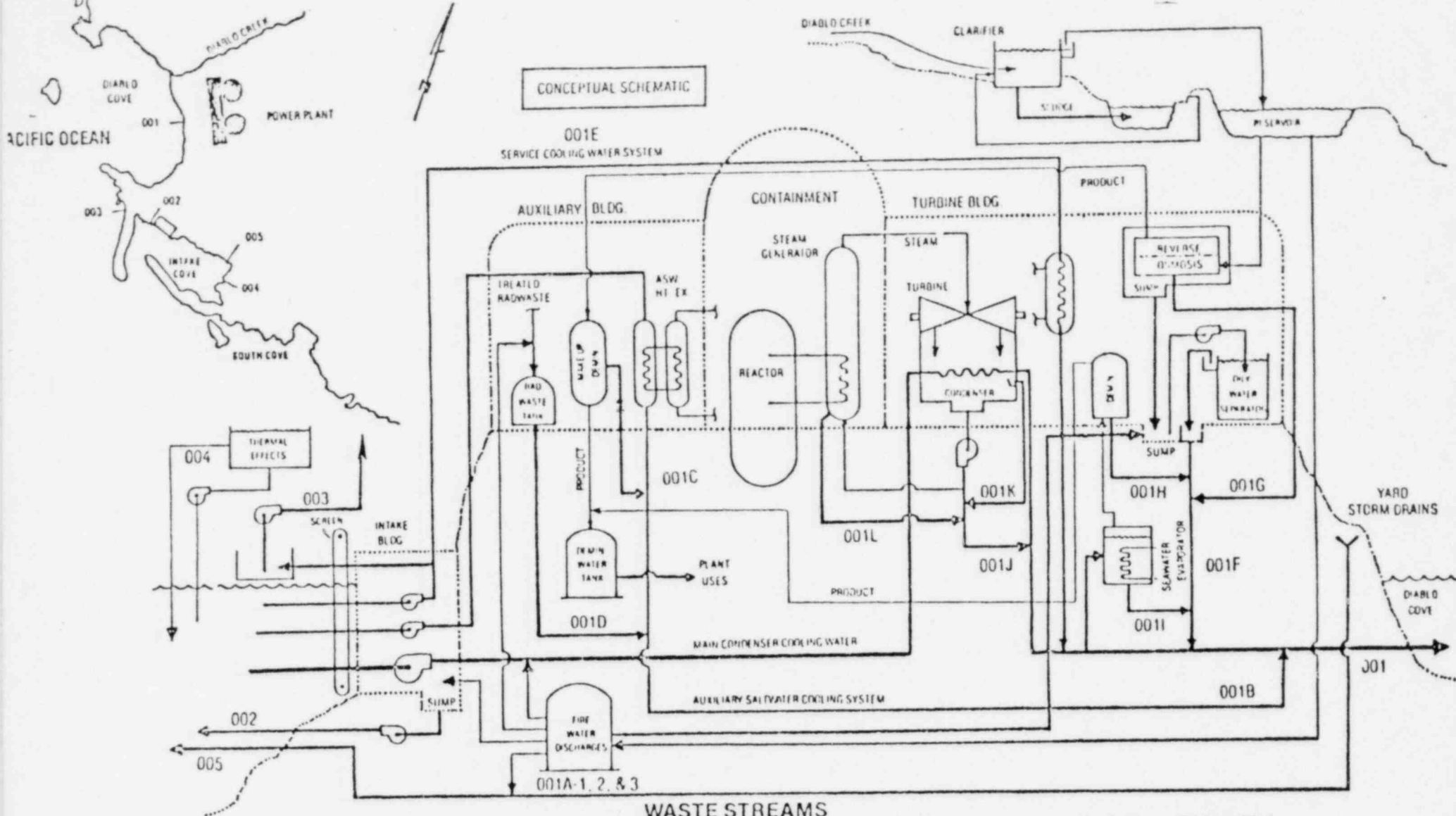
7. Within 36 months after beginning commercial operation, the discharger shall submit results of:
 - (a) Thermal Effects Study to determine whether a thermal discharge in compliance with this Order adequately protects beneficial uses of receiving waters.
 - (b) Studies necessary to demonstrate compliance with Section 316 (b) of the Clean Water Act.
8. The permit is subject to revision if any of the above studies demonstrate different effects than those estimated prior to plant operation.
9. The terms "significant difference" and "degradation" used in this permit are defined in footnotes 5 and 7, respectively, of the 1978 Water Quality Control Plan for Ocean Waters of California.
10. All facilities used for containment, transporting or holding waste on site shall be adequately protected against overflow, flooding or washout occurring as a result of a 100 year frequency storm.
11. This Order does not alleviate the responsibility to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order, nor does this Order preclude imposition of additional standards, requirements, or conditions by any other regulatory agency.
12. Requirements prescribed by this Order supersede requirements prescribed by Order No. 76-11 adopted by the Board on April 9, 1976. Order No. 76-11 is hereby rescinded.
13. This Order expires January 1, 1986. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Act, or amendments thereto, and shall take effect January 25, 1982.

I, KENNETH R. JONES, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Coast Region, on January 14, 1982 and amended on June 11, 1982.


Executive Officer

ATTACHMENT "B"



WASTE STREAMS

Discharge	Description	Volume (gal/day)	Discharge	Description	Volume (gal/day)	Discharge	Description	Volume (gal/day)
001	Once through Cooling Water (Seawater)	2,540,000,000	001 E	Service Cooling Water	5,620,000	001 L	Steam Generator Blowdown	432,000
001 A.1	Firewater System Flush (Intermittent)	50,000	001 F	Turbine Building Sump (Intermittent)	98,000	002	Intake Structure Building Floor Drains (Intermittent)	300,000
001 A.2	Firewater System Flow Test (Intermittent)	24,000	001 G	Reverse Osmosis Blowdown	72,000	003	Intake Screen Wash	582,000
001 A.3	Fire Hose Test (Intermittent)	1,400	001 H	Condensate Demineralizer and Seawater Evaporator Demineralizer Regenerant (Intermittent)	52,000	004	Thermal Effects Laboratory Discharge	1,440,000
001 B	Auxiliary Salt Water Cooling	31,700,000	001 I	Sea Water Evaporator Blowdown	430,000	005	Yard Storm Drains	Variable
001 C	Make-up Water System Waste Effluent (Intermittent)	19,000	001 J	Condensate Pumps Discharge Header Overboard (Intermittent)	360,000			
001 D	Liquid Radioactive Waste	30,000	001 K	Condenser Tube Sheet Leak	8,000			

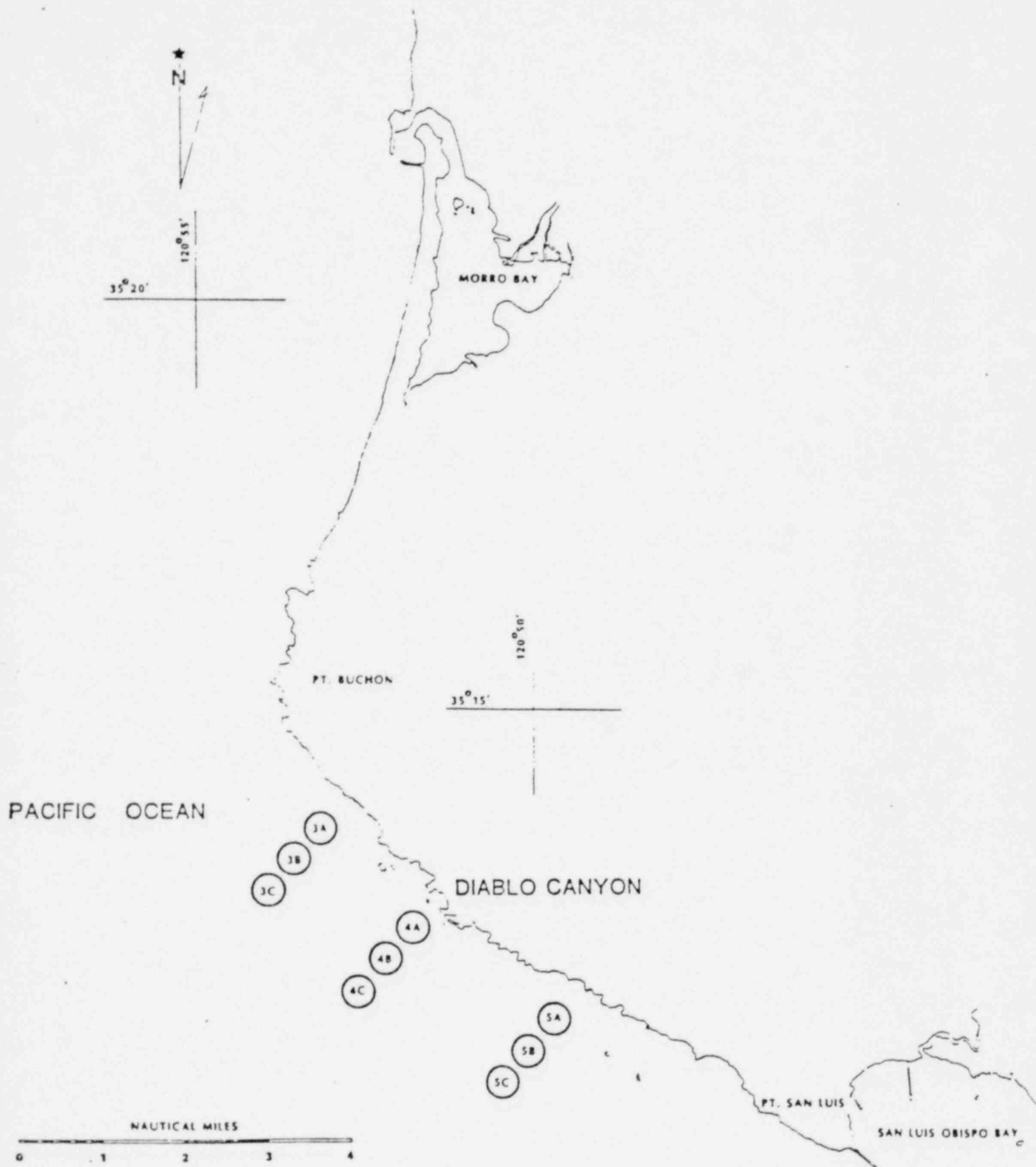
Parameter	Units	Discharge	Type of Sample	Minimum Frequency of Analysis
Turbidity	NTU	001	Grab	Monthly
Grease & Oil	mg/l	001 & 001F	Grab	Monthly
Grease & Oil	mg/l	001C,001D,001G, 001H,001I,001J, 001K,001L,002,& 005	Grab	Qtrly(Jan, Apr, July, Oct)
Total Non-Filtrable Residue* (Suspended Solids)	mg/l	001&001I	Grab	Monthly
Total Non-Filtrable Residue (Suspended Solids)	mg/l	001C,001D,001F, 001G,001H,001J, 001K&001L	Grab	Monthly
Arsenic	mg/l	001	Grab	Annually (Oct.)
Cadmium	mg/l	001	Grab	Annually (Oct.)
Total Chromium	mg/l	001	Grab	Qtrly(Jan, Apr, July, Oct)
Copper	mg/l	001	Grab	Monthly
Copper	mg/l	001D,001F, 001I,&001L	24-Hr. Composite	During metal cleaning operations
Lead	mg/l	001	Grab	Annually (Oct.)
Mercury	mg/l	001	Grab	Annually (Oct.)
Nickel	mg/l	001	Grab	Qtrly(Jan, Apr, July, Oct)
Silver	mg/l	001	Grab	Annually (Oct.)
Zinc	mg/l	001	Grab	Monthly
Cyanide	mg/l	001	Grab	Annually (Oct.)
Phenolic Compounds	mg/l	001	Grab	Annually (Oct.)
Total Chlorine Residual	mg/l	001	Grab	At least twice during each chlorination cycle
Chlorine Used	lbs/day	001	Record of Actual amount used.	Monthly
Ammonia (as N)	mg/l	001	Grab	Qtrly(Jan, Apr, July, Oct)
Toxicity Concentration**	tu	001	Grab	Qtrly(Jan, Apr, July, Oct)
Total Chlorinated Pesticides & PCB's***	mg/l	001	Grab	Annually (Oct.)
Iron	mg/l	001D,001F 001I&001L	24-Hr. Composite	During metal cleaning operations
Titanium	mg/l	001	Grab	Qtrly(Jan, Apr, July, Oct)
Boron	mg/l	001	Grab	Qtrly(Jan, Apr, July, Oct)
Dissolved Oxygen	mg/l	001	Grab	Qtrly(Jan, Apr, July, Oct)
Lithium	mg/l	001D	Grab	Qtrly(Jan, Apr, July, Oct)
Hydrazine	mg/l	001	Grab	Qtrly. when discharging hydrazine into 001.
Cadmium, chromium, copper, lead, mercury, nickel silver, and zinc	mg/l	001D, 001H & 001L	Quarterly Composite	Qtrly(Jan, Apr, July, Oct)
Cadmium, chromium, lead, copper, mercury, nickel, silver, and zinc	mg/l	001F	Weekly Composite	Qtrly(Jan, Apr, July, Oct)

2. Sediment samples shall be analyzed annually at two stations inside and two stations adjacent to Diablo Cove for constituents listed in paragraph B.6. on page 9 of Order No. 81-76.
3. 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 commercial operation begins.
4. Surface water temperatures shall be determined at two-month intervals from Point Buchon to Pecho Rock for at least two years after commercial operation begins. Isotherms shall be determined in 2°F intervals.
5. Water temperatures shall be measured at one meter intervals from the surface to the bottom at twelve stations inside and adjacent to Diablo Cove. Measurements shall be taken in February, June and October after commercial operation begins. Precision of measurements shall be within $\pm 0.2^{\circ}\text{F}$.
6. pH and dissolved oxygen content of the receiving water in February, June, and October (including Pacific Gas & Electric stations 3a through c, 4a through c, 5a through c, as well as three stations in Diablo Cove). Dissolved oxygen and pH samples shall be grab samples.
7. Incident light measurements shall be taken at three meter intervals from the surface to the bottom at 6 stations approved by the Executive Officer. Measurements shall be taken on a monthly basis after commercial operation begins and during times of discharge. Measurement shall be with a photometer cell.
8. Radiological monitoring of seawater and bull kelp at stations located at the middle and immediately north and south of Diablo Cove shall be conducted monthly. Radiological monitoring of the following animals shall be conducted quarterly at the same locations:
 - Black Abalone
 - Red Abalone
 - Perch
 - Rockfish
9. An in situ bioassay monitoring program approved by the Executive Officer shall be instituted.

Reporting

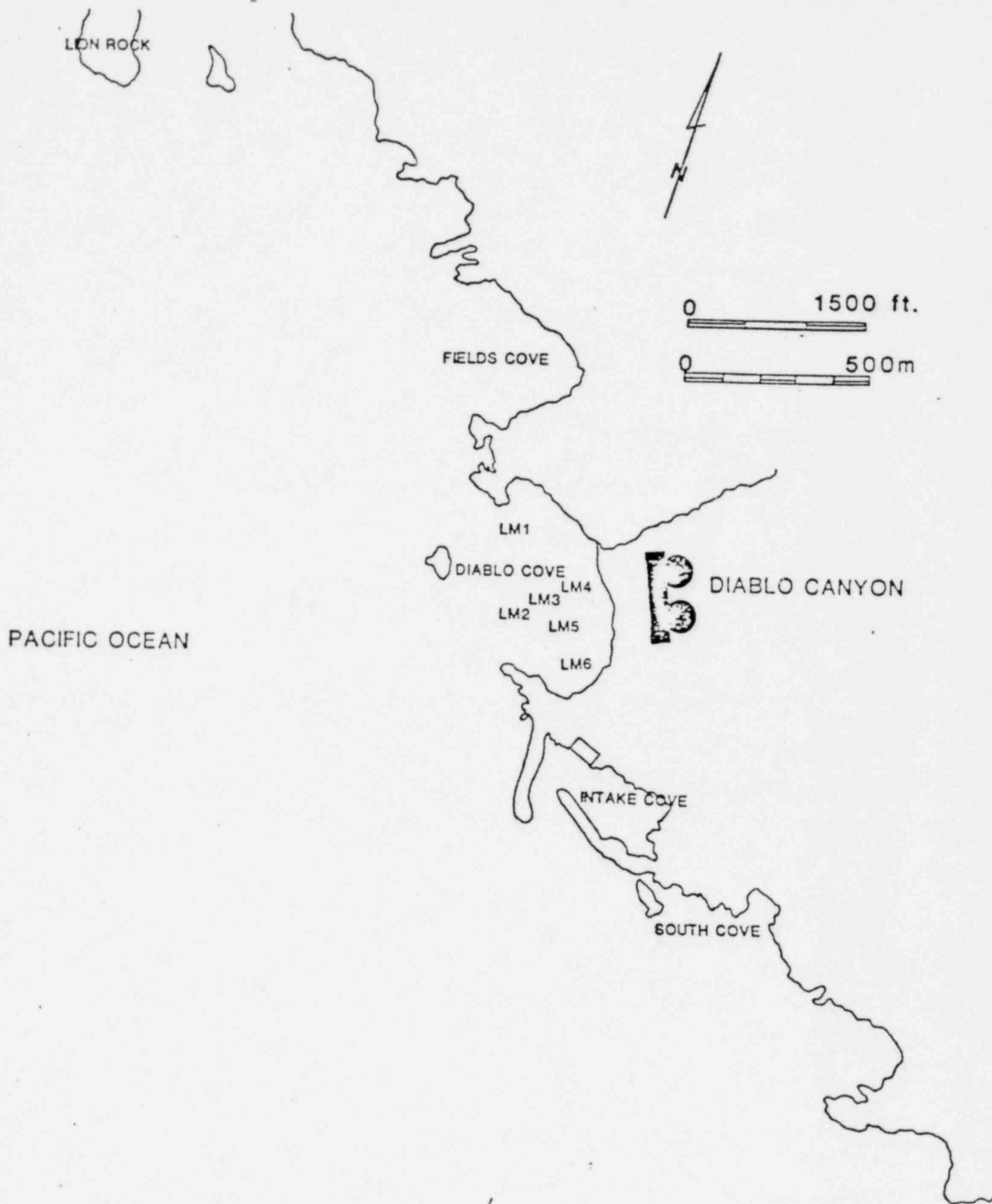
The following information shall be reported to the Board:

1. Results of Influent, Effluent and Receiving Water Monitoring.
2. Details of any bypass or damage of the 5 micron filters in the liquid radwaste system.



OCEANOGRAPHIC STATIONS

FIGURE 1



LIGHT METER LOCATIONS

FIGURE 3

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

JULY, 1981

STANDARD PROVISIONS AND REPORTING REQUIREMENTS
for
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMITS

CONTENTS:

- A. General Permit Conditions
- B. General Monitoring Requirements
- C. General Reporting Requirements
- D. General Pretreatment Provisions
- E. Bypasses or Upsets
- F. Enforcement
- G. Definitions

A. General Permit Conditions:

Prohibitions:

1. Introduction of "incompatible wastes" to the treatment system is prohibited.
2. Discharge of high-level radiological waste and of radiological, chemical, and biological warfare agents is prohibited.
3. Discharge of "toxic pollutants" in violation of effluent standards and prohibitions established under Section 307(a) of the Clean Water Act is prohibited.
4. "Bypass" and "overflow" of untreated and partially treated waste is prohibited.
5. Discharge of waste sludge, sludge digester supernatant, and sludge drying bed leachate to drainage ways, surface waters and the ocean is prohibited.
6. Introduction of pollutants into the collection, treatment, or disposal system by an "indirect discharger" that:
 - a. inhibit or disrupt the treatment process, system operation, or the eventual use or disposal of sludge; or,
 - b. flow through the system to the receiving water untreated; and,
 - c. cause or "significantly contribute" to a violation of any requirement of this Order, is prohibited.
7. Introduction of "pollutant free" wastewater to the collection, treatment, and disposal system is prohibited.

- c. a change in any condition or endangerment to human health or environment that requires a temporary or permanent reduction or elimination of the authorized discharge; and,
 - d. a material change in character, location, or volume of the discharge.
15. This permit does not authorize commission of any act causing injury to the property of another, does not convey any property rights of any sort, does not remove liability under Federal, State, or local laws, and does not guarantee a capacity right in receiving waters.
17. The "permittee" shall take all reasonable steps to minimize or correct adverse impacts on the environment resulting from non-compliance with this permit.
18. Provisions of this permit are severable. If any provision of the permit is found invalid, the remainder of the permit shall not be affected.
19. If an applicable effluent standard or limitation is promulgated under Section 301 (b) (2) (C) and (D), 304 (b) (2), and 307 (a) and that effluent standard or limitation is more stringent than any effluent limitation in the permit, or controls pollutants not limited in the permit, the permit shall be modified or reissued to conform to that effluent standard or limitation.
20. The "permittee" shall furnish, within a reasonable time, any information the Regional Board may request to determine whether cause exists for modifying, revoking, and reissuing or terminating this permit, or to determine compliance with this permit.
21. Safeguards shall be provided to assure maximal compliance with all terms and conditions of this permit. Safeguards shall include preventative and contingency plans and may also include alternative power sources, stand-by generators, retention capacity, operating procedures, or other precautions. Preventative and contingency plans for controlling and minimizing the effect of accidental discharges shall:
- a. identify possible situations that could cause "upset", "overflow" or "bypass", or other noncompliance. (Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.)
 - b. evaluate the effectiveness of present facilities and procedures and describe procedures and steps to minimize or correct any adverse environmental impact resulting from noncompliance with the permit.

7. The "permittee" shall maintain records of all monitoring information, including all calibration and maintenance records; all original strip chart recordings for continuous monitoring instrumentation; the date, exact place, and time of sampling; the individual who performed the sampling; the date analysis was performed; the laboratory and individual who performed the analysis; the analytical techniques used; and results. Records shall be maintained for a minimum of three years. This period may be extended during the course of any unresolved litigation or when requested by the Board.

C. General Reporting Requirements:

1. Monitoring results shall be reported at intervals and in a manner specified in the "Monitoring and Reporting Program" of this permit.
2. Monitoring reports shall be submitted on State Water Resource Control Board Form Q2, which will be supplied by the Regional Board upon request.
3. Reports of marine monitoring surveys conducted to meet receiving water monitoring requirements of the "Monitoring and Reporting Program" shall include the following minimum information:
 - a. A description of climatic and receiving water characteristics at the time of sampling (weather observations, floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling, tide height, etc.).
 - b. A description of sampling stations, including differences unique to each station (e.g., station location, grain size, rocks, shell litter, calcareous worm tubes, evident life, etc.).
 - c. A description of the sampling procedures and preservation sequence used in the survey.
 - d. A description of the exact method used for laboratory analysis. In general, analysis shall be conducted according to paragraph B.1. However, variations in procedure are acceptable to accommodate the special requirements of sediment analysis. All such variations must be reported with the test results.
 - e. A brief discussion of the results of the survey. The Discussion shall compare data from the control station with data from the outfall stations. All tabulations and computations shall be explained.

- b. a schedule for studies, design, and other steps needed to provide additional capacity for waste treatment and/or disposal facilities before the waste flow rate equals the capacity of present units.

In addition to complying with paragraphs C.14.c and C.15, the report must certify that the policy-making body is informed about the report's contents.

- 10. All "permittees" shall submit reports to the:

California Regional Water Quality Control Board
Central Coast Region
1102-A Laurel Lane
San Luis Obispo, California 93401

In addition, "permittees" with designated major discharges shall submit a copy of each document to:

Regional Administrator
Environmental Protection Agency, Region IX
215 Fremont Street
San Francisco, California 94105
Attention: ENC'R

- 11. Transfer of control or ownership of a waste discharge facility must be preceded by a notice to the Regional Board at least 30 days in advance of the proposed transfer date. The notice must include a written agreement between the existing "permittee" and proposed "permittee" containing specific date for transfer of responsibility, coverage, and liability between them. Whether a permit may be transferred without modification or revocation and reissuance is at the discretion of the Board. If permit modification or revocation and reissuance is necessary, transfer may be delayed 180 days after the Regional Board's receipt of a complete permit application.
- 12. Except for data determined to be confidential under Section 308 of the Clean Water Act (excludes effluent data and permit applications), all reports prepared in accordance with this permit shall be available for public inspection at the office of the Regional Board or Regional Administrator of EPA.
- 13. Should the "permittee" discover that it failed to submit any relevant facts or that it submitted incorrect information in a report, it shall promptly submit the missing or correct information.
- 14. All reports shall be signed as follows:

Notice shall include information on the quality and quantity of waste being introduced to the system and the anticipated impact of the waste upon the quantity and quality of the aggregate discharge.

18. The "permittee" must notify the Regional Board as soon as it knows or has reason to believe:
 - a. That a discharge of a toxic pollutant not limited by the permit has occurred, or will occur, in concentrations that exceed the highest of the following:
 - (1) 100 $\mu\text{g/l}$;
 - (2) if acrolein or acrylonitrile, 200 $\mu\text{g/l}$; if 2,4-dinitrophenol or 2-methyl-4,6 dinitrophenol, 500 $\mu\text{g/l}$; and if antimony, 1 mg/l; and,
 - (3) Five times the maximum concentration value reported for the toxic pollutant in the permit application.
 - b. That they have begun, or expect to begin, use or manufacture of a toxic pollutant not reported in the permit application.

D. General Pretreatment Provisions

1. Discharge of pollutants by "indirect dischargers" in specific industrial sub-categories (appendix C, 40CFR Part 403), where categorical pretreatment standards have been established, or are to be established, (according to 40CFR Chapter 1, Sub-Chapter N), shall comply with the appropriate pretreatment standards:
 - a. By the date specified therein;
 - b. Within three (3) years of the effective date specified therein, but in no case later than July 1, 1984; or,
 - c. If a new "indirect discharger", upon commencement of discharge.
2. Unless the "Permittee's" Pretreatment Program has been approved by the Environmental Protection Agency, affected "indirect dischargers" must submit a report, a certification, and a proposed schedule for complying with prohibition paragraph D.1., above, to the "Permittee", the Regional Board, and the Environmental Protection Agency. This report shall be submitted within 180 days after the effective date of a categorical pretreatment standard or after a categorical determination decision. The report and certification shall meet the requirements of 40CFR Part 403, paragraphs 403.12 (b) (1) - (7) and (c) (1) and (2). Thereafter, progress reports shall be submitted to the "Permittee", the Regional Board, and the Environmental Protection Agency within fourteen (14) days of each date in the approved compliance time schedule mentioned above until either full compliance with paragraph number D.1. or until the "Permittee's" Pretreatment Program is approved.

- a. an "upset" occurred and that the permittee can identify the specific cause(s) of the "upset"; and,
- b. the permitted facility was at the time of "upset" being properly operated; the "permittee" submitted notice of "upset" within 24 hours; and the "permittee" took all reasonable steps to minimize or correct any adverse impact on the environment.

F. Enforcement:

1. The "permittee" must comply with all conditions of this permit. Permit noncompliance violates state and federal law and is grounds for enforcement action, for permit revocation, reissuance, or modification, or for denial of a permit renewal application.
2. Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained in this permit may, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or both.
3. Any person who knowingly makes any false statement, representation, or certification of any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, may, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment of not more than six months per violation, or by both.
4. Any person causing violation of this permit shall be subject to a civil penalty not to exceed \$10,000 per day of violation. Any person who willfully or negligently causes violation of this permit is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, and by imprisonment for not more than one year.
5. Upon reduction, loss, or failure of the treatment facility, the "permittee" shall, to the extent necessary to maintain compliance with this permit, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. Should enforcement action be brought against the "permittee", the necessity to halt or reduce the permitted activity in order to obtain compliance with the conditions of this permit shall not be a defense.

G. Definitions:

1. "Bypass" means the diversion of waste streams from any portion of a treatment facility.
2. A "composite sample" is a combination of no fewer than eight (8) individual samples obtained at equal time intervals (usually hourly) over the specified sampling (composite) period. The volume of each individual sample is proportional to the flow rate at the time of sampling. The period shall be specified in the "Monitoring and Reporting Program" ordered by the Executive Officer.

- e. Heat in amounts that inhibit or disrupt biological activity in the treatment works or that raise influent temperatures above 40°C (104°F) unless the treatment works is designed to accommodate such heat.
9. "Indirect Discharger" means a nondomestic discharger introducing pollutants into a publicly owned treatment and disposal system.
10. "Log Mean" is the geometric mean. Used for determining compliance of fecal or total coliform populations, it is calculated with the following equation:

$$\text{Log Mean} = (C_1 \times C_2 \times \dots \times C_n)^{1/n},$$
 in which "n" is the number of days samples were analyzed during the period and any "C" is the concentration of bacteria (MPN/100 ml) found on each day of sampling. To be valid, "n" must be five or more.
11. "Mass emission rate" is a daily rate defined by the following equations:

$$\text{mass emission rate (lbs/day)} = 8.34 \times Q \times C; \text{ and,}$$

$$\text{mass emission rate (kg/day)} = 3.78 \times Q \times C,$$
 where "C" (in mg/l) is the measured daily constituent concentration or the average of measured daily constituent concentrations and "Q" (in mgd) is the measured daily flow rate or the average of measured daily flow rates over the period of interest.
12. The "Maximum Allowable Mass Emission Rate," whether for a month, week, day, or six-month period, is a daily rate determined with the formulas in paragraph G.11, above, using the effluent concentration limit specified in the permit for the period and the average of measured daily flows (up to the allowable flow) over the period.
13. "Maximum Allowable Six-Month Median Mass Emission Rate" is a daily rate determined with the formulas in paragraph G.11, above, using the "Six-Month Median" effluent limit specified in the permit, and the average of measured daily flows (up to the allowable flow) over a 180-day period.
14. "Median" is the value below which half the samples (ranked progressively by increasing value) fall. It may be considered the middle value, or the average of two middle values. To be valid, three or more values are required.
15. "Monthly Average" (or "Weekly Average," as the case may be) is the arithmetic mean of daily concentrations or of daily mass emission rates over the specified 30-day (or 7-day) period:

$$\text{Average} = \frac{1}{n} (X_1 + X_2 + \dots + X_n),$$

- d. Discharge pollutants, either alone or in conjunction with pollutants from other sources, that increase the magnitude or duration of permit violations.
- 25. "Six-month median" means a "median" of results from samples taken over any period of 180 consecutive days.
- 26. "Toxic Pollutant" means any pollutant listed as toxic under Section 307(a) (1) of the Clean Water Act or under 40 CFR Part 122, Appendix D. Violation of maximum daily discharge limitations are subject to 24-hour reporting (Paragraph C.4.).
- 27. "Upset" means an exceptional incident causing noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. It does not include non-compliance caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- 28. "Zone of Initial Dilution" means the region surrounding or adjacent to the end of an outfall pipe or diffuser ports whose boundaries are defined through calculation of a plume model verified by the State Water Resources Control Board.