CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 83-43
NPDES NO. CA0005649

WASTE DISCHARGE REQUIREMENTS FOR:

PACIFIC GAS AND ELECTRIC COMPANY
HUNTERS POINT POWER PLANT
SAN FRANCISCO, SAN FRANCISCO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter Board) finds that:

General Findings

1. Pacific Gas and Electric Company, Hunters Point Power Plant (hereinafter discharger) was issued Regional Board Order No. 76-60, an NPDES Permit prescribing waste discharge requirements for the discharge for the Hunters Point steam generating electric power plant. This permit expired on May 1, 1981, but has remained in effect pursuant to Federal regulations pending the promulgation by the Federal Environmental Protection Agency of effluent limitation guidelines for steam electric power plants. These guidelines were published on November 19, 1982 in the Federal Register. The Discharger filed an Application received February 20, 1981 for re-issuance of the NPDES Permit, and has subsequently amended the Application.

2. The report of waste discharge describes the three existing discharges as follows (see flow schematic in Attachment A):

Discharge Outfall	Contributary Waste Stream	Annual Flow Average mgd
001	A. Cooling Water Discharge Canal Units 2 and 3	151
	Sources:	
	Once-through Cooling Unit 2	74.7
	Once-through Cooling Unit 3	74.7
	Auxilary Salt Water Cooling	1.06
	B. Low Volume Waste Intake Screen Wash - Units 2, 3 and 4	.232
	Lubricating Water	.063
002	A. Once-through Cooling Unit 4	147

Discharge Outfall	Contributary Waste Stream	Annual Flow Average mgd
	B. Low Volume Waste Boiler Blowdown	.00012
	Lubricating Water	.026
003	Low Volume Waste Storm Drains	.0392

The three discharge structures are located on the San Francisco Bay shore, south of Islais Creek Channel.

3. The Discharger withdraws water from the San Francisco Bay from two shoreline surface water intake structures located along the shore of India Basin. Units 2 and 3 share a common intake, while Unit 4 has a separate structure. Circulating cooling water for the three steam electric generating units (Units 2, 3 and 4) drawn from both intakes passes through bar racks and screens. The design approach and through-screen velocities are as follows:

		Intake Serving Units	
Velocities		2 & 3	4
Approach Screen	ft/sec	0.7	0.8
	cm/sec	21	24
Through Screen	ft/sec	1.7	1.6
	cm/sec	52	49

4. The Discharger cools the condensers by pumping water from the intake through the condenser to the point of discharge. The design capacities of the condensers and single speed pumps are as follows:

Units	Design Condenser Temperature Rise	Unit Pump Design Capacity (gpm each pump)
2	21°F	89,000*
3	19°F	89,000*
4	15°F	101,600(2 pumps)

*two 40,000 gpm main unit and one 9,000 gpm house unit pump

5. EPA and the Board have classified this discharge as a major discharge.

6. Boiler chemical cleaning waste, oil sludge, fireside and waterside washes and evaporator cracking waste are discharged to holding tank or an industrial sump. These wastes will be regulated under a separate Board order.

7. The Board adopted a revised Water Quality Control Plan, San Francisco Bay Basin (Basin Plan) on July 21, 1982, and the State Water Resources Control Board approved it on October 16, 1982. The provisions of this permit are consistent with the objectives of the Basin Plan.

8. The beneficial uses of San Francisco Bay and contiguous waters are:

a. Recreation
b. Fish migration, spawning and habitat
c. Habitat and resting for waterfowl and migratory birds
d. Industrial water supply
e. Esthetic enjoyment
f. Navigation
g. Shellfish habitat
h. Estuarine uses

9. Effluent limitation, and toxic and effluent standards established pursuant to Sections 301, 302, 303(d), 304, 307 and 316 of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

10. The Board finds that the Best Practicable Control Technology Currently Available (BPT) effluent limitations which the U.S. Environmental Protection Agency has promulgated to regulate conventional pollutants for the steam-electric power generating point source category are equivalent to Best Conventional Pollutant Control Technology (BCT) for the Hunters Point Power Plant of Pacific Gas and Electric Company.

11. The action to adopt an NPDES permit is 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.

12. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

13. The Board, in a public hearing, heard and considered all comments pertaining to the discharge permit.

Findings Related to Thermal Effluent Limitations

14. The CWA requires compliance with State water quality standards for the discharge of thermal effluent. The State Water Resources Control Board (State Board), on 18 September 1975, amended the Water Quality Control Plan for Control of Temperature in the Coastal Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan). The Thermal Plan requires that for existing thermal waste, discharges shall comply with limitations necessary to assure protection of beneficial uses.

15. The Discharger conducted thermal effects studies (pumped entrainment mortality) as part of their cooling water intake system studies described in Finding 17. No receiving water studies were required of the discharger since discharge temperatures are considered to be relatively low and the potential impacts on aquatic resources to be minimal. Such receiving water studies conducted at the Pittsburg

Power Plant in the Bay-Delta estuary, which discharges much higher temperatures into a more highly sensitive area, failed to demonstrate any significant adverse impacts on the local or regional aquatic organisms or habitat. Therefore, the Board finds that existing thermal discharge temperatures at the Hunters Point Power Plant do not threaten beneficial uses in the receiving water.

16. The average temperature of the discharges are as follows:

Discharge	Winter	Summer
001	73°F	79°F
002	73°F	81°F
003	N/A	N/A

Findings Related to Best Technology Available (BTA) for Intake Systems

17. Section 316(b) of the CWA requires that the location, design, construction, and capacity of cooling water intake structures reflect the BTA for minimizing adverse environmental impact. In compliance with Order No. 76-60, the Discharger submitted a final study report in December 1982 intended to comply with Section 316(b).

18. The cooling water intakes are located in a portion of San Francisco Bay that is characteristic of a sheltered marine inshore environment, with intertidal, subtidal, and open-water habitat. Cooling water comes from San Francisco Bay through a pair of conduits at the end of a long, shallow embayment which is part of a loading and holding area for the adjacent Port of San Francisco shipping terminal. Cooling water flows through the conduits into a large basin which contains the intake structures. Prior to extensive landfilling by the Port of San Francisco, the structures were located on the San Francisco Bay shoreline.

19. The current gross output capacity of the Hunters Point Power Plant is as follows:

Unit	Gross Capacity (MWE)
2	113*
3	113*
4	170

* includes 3 MW house units

20. The impact of the Hunters Point Power Plant's cooling water system is a function of the number of organisms entrained (drawn into cooling water system) and impinged (drawn into the intake screens). The 316(b) study showed that impingment losses of fish were relatively low, primarily northern anchovy and Pacific herring; both exhibiting large and highly productive populations in the Bay system. Entrainment losses were primarily larvae and juveniles of gobi and Pacific herring. Entrainment survival is influenced by physical, thermal, and chemical stresses. Over 98 percent of the discharge temperatures recorded during the study period were lower than the lethal thermal of 30°C. Chlorination did not appear to contribute

substantially to entrainment mortality, because of low chlorine residuals, short exposure times, and the infrequency of chlorination (2 percent of the operating time). The discharger's study indicated that much of the losses within the cooling system were attributed to predation by biofouling organisms lining the cooling system conduits.

21. The Board finds that the best intake technology available for Units 2, 3, and 4 is continued use of the existing system with the use of thermal shock treatment to control biofouling organisms. Construction for thermal shock treatment has already begun.

IT IS HEREBY ORDERED, that Pacific Gas and Electric Company, Hunters Point Power Plant, in order to meet the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to meet the provision of the Federal Water Pollution Control Act as amended, and regulations and guidelines adopted thereunder, that the discharger shall comply with the following:

A. Prohibitions

1. The discharge of polychlorinated biphenyl compounds is prohibited.

B. Effluent Limitations

1. Discharge 001 and 002 shall not contain constituents in excess of the following limits:

a.	Chlorine residual	0.0 mg/l, instantaneous maximum
b.	pH	6.5 - 8.5

c. In any representative set of samples the waste as discharged shall meet the following limit of quality:

TOXICITY: The survival of test organisms acceptable to the Board shall achieve a median of 90% survival for three consecutive samples and a 90 percentile value of not less than 70% survival for 10 consecutive samples.

d. Thermal discharge limitation; Elevated temperature waste discharges shall be within limits necessary to assure protection of beneficial uses, and shall not exceed 96°F except temperatures up to 110°F are allowed for short periods of time during thermal shock treatment.

2. Low volume wastes shall not exceed the following:

Constituents	Units	30-Day Average	Maximum Daily
a. Total Supended Solids	mg/l	30	100
b. Oil and Grease	mg/l	10	20

3. The quantity of pollutants discharged from low volume wastes shall not exceed the quantity calculated from the flow of the waste sources times the concentration in mg/l in B.2. above.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   a. Floating, suspended or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alteration of turbidity or apparent color beyond present natural background levels;

   d. Visible, floating, suspended or deposited oil or other products of petroleum origin, and

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl or render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in water of the State at any place within one foot of the water surface:

a.	Dissolved oxygen	7.0 mg/l minimum
b.	pH	Variation from natural ambient pH by more than 0.5 pH units

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such standards.

D. Provisions

1. Neither the discharge nor its treatment shall create a nuisance or pollution as defined in Section 13050 of the California Water Code.

2. The Discharger shall comply with a Self-Monitoring Program as adopted by the Regional Board, and as may be amended by the Executive Officer.

3. Completion of the thermal shock treatment construction for the best intake technology available for Units 2, 3, and 4 shall be February 1, 1984.

4. The requirements prescribed herein do not authorize the commission of any act causing injury to property of another, nor protect the Discharger from his liabilities under federal, state or local laws, nor guarantee the discharger a capacity right in the receiving waters.

5. In the event of any change in control or ownership of land or waste, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to this office.

6. The Discharger shall permit the Regional Board:

   (a) Entry upon premises where an effluent source is located or in which any required records are kept;

   (b) Access at reasonable times to copy any records required to be kept under terms and conditions of this Order:

   (c) Inspection at reasonable times of monitoring equipment or records; and,

   (d) Sampling at reasonable times of any discharge.

7. The Discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed by the Discharger to achieve compliance with the waste discharge requirements.

8. After notice and opportunity for a hearing, this Order may be modified, suspended, or revoked, in whole or in part, during its term for cause including, but not limited to, the following:

   (a) Violation of any terms or conditions of this Order;

   (b) Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts;

(c) A temporary or permanent reduction or elimination of the authorized discharge; or,

(d) A change in character, location or volume of discharge.

9. This permit shall be modified or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(c), and (D), 303, 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

(a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or,

(b) Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

10. All applications, reports, or information submitted to the Regional Board shall be signed and certified pursuant to Environmental Protection Agency regulations (40 CFR 122.41K).

11. Pursuant to Environmental Protection Agency regulations [40 CFR 122.42(a)] the Discharger must notify the Regional Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture of a pollutant not reported in the permit application, or (2) a discharge of a toxic pollutants not limited by this permit has occurred, or will occur, in concentrations that exceed the specified limits.

12. Order No. 76-60 is hereby rescinded.

13. This Order expires on October 19, 1988 and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as appliation for issuance of new waste discharge requirements.

14. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act or amendments thereto, and shall take effect at the end of 10 days from date of adoption provided the Regional Administrator, Environmental Protection Agency, has no objections.

I, Fred H. Dierker, 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, San Francisco Bay Region, on October 19, 1983.

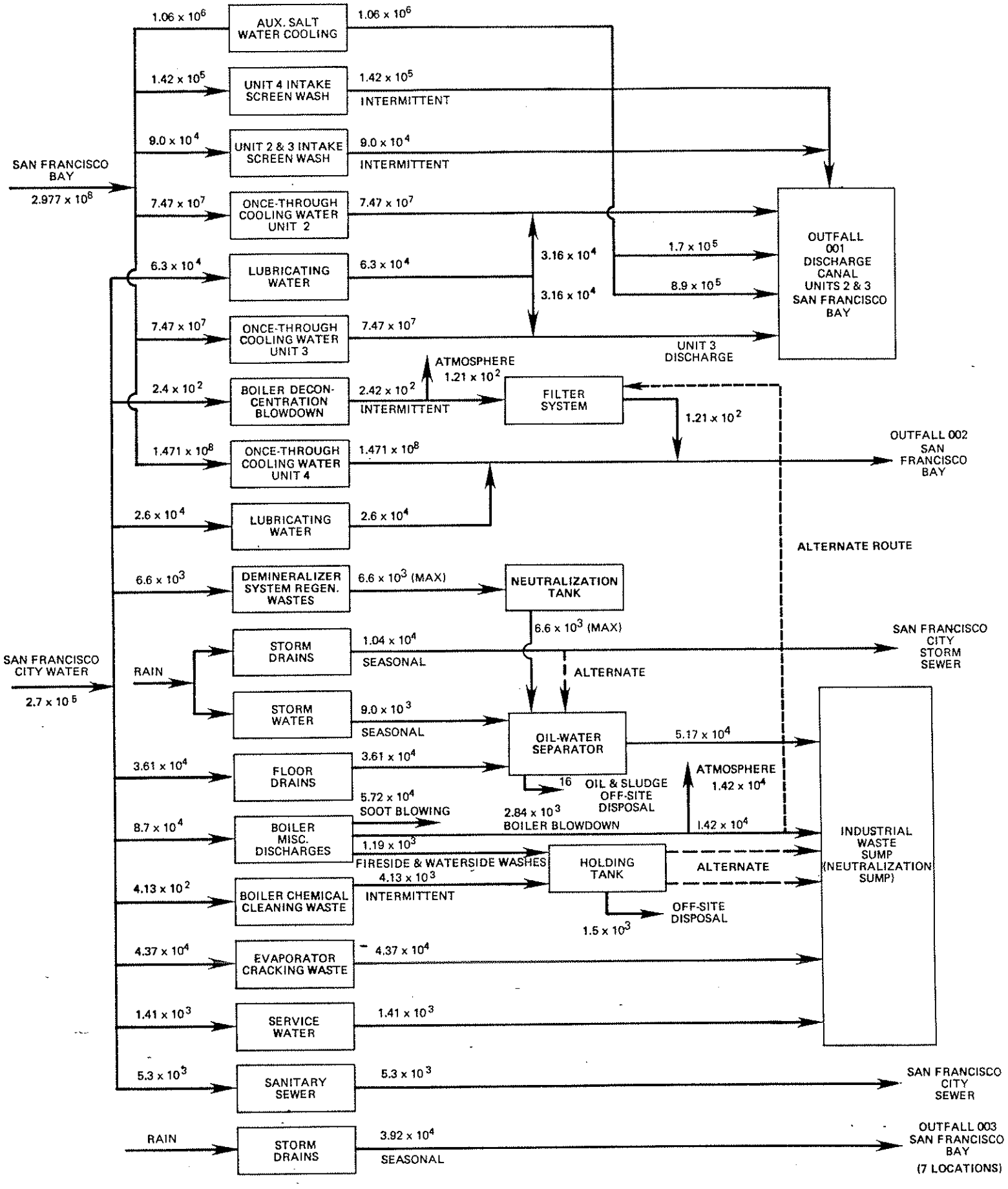
FRED H. DIERKER
Executive Officer

Attachments:
A - Flow Schematic
SMP

ATTACHMENT A

HUNTERS POINT POWER PLANT
WATER FLOW SCHEMATIC

ALL FLOWS ARE LISTED IN GALLONS PER DAY



AMENDED OCTOBER 1983

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

TENTATIVE SELF-MONITORING PROGRAM

FOR

PACIFIC GAS AND ELECTRIC COMPANY
HUNTERS POINT POWER PLANT
SAN FRANCISCO, SAN FRANCISCO COUNTY

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger, also referred to as self-monitoring program, are: (1) to document compliance with waste discharge requirements and prohibitions established by this Regional Board, and (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the latest edition of Standard Methods for the Examination of Water and Wastewater prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, or other methods approved and specified by the Executive Officer of this Regional Board including the methods specified in attached Appendix A.

Commercial Laboratory Analyses

Water and waste analyses shall be performed by a laboratory previously approved for these analyses by the State Department of Health. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his laboratory and shall sign all reports of such work submitted to the Regional Board.

In-house Laboratory Analyses

The Board will accept analytical data from an in-house laboratory which is not currently certified if the discharger agrees in writing to: (1) perform all analyses in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants promulgated by the U.S. Environmental Protection Agency; (2) implement and maintain a satisfactory quality assurance program, (comparable to State Department of Health Services Standards); (3) demonstrate a good agreement in analytical results with those of a previously certified

laboratory in split sampling; and (4) become certified within a reasonable time if the State certification program is reinstated.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accurancy of measurements.

C. DEFINITIONS OF TERMS

1. A grab sample is defined as an individual sample collected in fewer than 15 minutes.

2. A composite sample is a combination of individual samples obtained at equal time intervals over the specified sampling period. The volume of each individual sample is proptional to the discharge flow rate at the time of sampling.

D. SCHEDULE OF SAMPLING, ANALYSES, AND OBSERVATIONS

The discharger is required to perform observations, sampling, and analyses according to the schedule in Part B.

E. RECORDS TO MAINTAINED

1. Written reports shall be retained by the discharger(s) for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample:

   a. Identity of sampling and observations stations by number.

   b. Date and time of sampling and/or observations.

   c. Date that analyses are started and completed, and name of personnel performing the analyses.

   d. Complete procedure used, including method of preserving sample and identity and volumes of reagents used. A reference to a specific section of Standard Methods, and EPA method, or approved alternate method from (B) above is satisfactory.

   e. Results of analysis and/or observations.

F. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Written self-monitoring reports shall be filed monthly (unless specified otherwise in Part B). In addition, an annual report shall be filed as indicated in F-1-f. The reports shall be comprised of the following.

a. Letter of Transmittal:

A letter transmitting self-monitoring reports should accompany each report. Such a letter shall include a discussion of requirement violations found during the past month and actions taken or planned for correcting violations, such as plant operation modifications and/or plant facilities expansion. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. Monitoring reports and the letter transmitting reports shall be signed by a principal executive officer at the level of vice-president or his duly authorized representative if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

b. Compliance Evaluation Summary

Each report shall be accompanied by a compliance evaluation summary sheet prepared by the discharger. The report format shall be approved by the Executive Officer.

c. Map or Aerial Photograph

A map or aerial photograph shall accompany the report showing sampling and observation station locations.

d. Results of Analyses and Observations

Tabulations of the results from each required analysis or observations specified in Part B by date, time, type of sample, and station, signed by the laboratory director. The report format shall be approved by the Executive Officer.

e. List of Approved Analyses

List of analyses performed for the discharger by another approved laboratory currently or previoulsy approved by the State Department of Health Service (and copies of reports signed by the laboratory director of that laboratory shall also be submitted as part of the report).

f. Annual Reporting

By January 31 of each year, the discharger shall submit an annual report to the Regional Board covering the previous calender year. The report shall contain both tabular and graphic summaries of the monitoring data obtained during the previous year. In addition, the report shall contain a comprehensive discusssion of the compliance record and the

corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements. The report format shall be approved by the Executive Officer and should be maintained and submitted with each regular self-monitoring report.

PART B

DESCRIPTION OF SAMPLING STATIONS AND SCHEDULE OF SAMPLING ANALYSIS AND OBSERVATIONS

I. Sampling Station Location/Description

A. Influent

Station	Description
I-001	At any point in the influent stream and upstream of any treatment where representative samples of the influent can be obtained.

B. Effluent

Station	Description
E-001-A	At any point in the outfall for Units 2 and 3 from which once through cooling water is discharged, between the point of discharge to San Francisco Bay and the point at which all pollutants tributary to that outfall are present.
E-002-A	At a point in the outfall from Unit 4 from which through cooling water is discharged to San Francisco Bay and the point at which all pollutants tributary to that outfall be present.
E-002-B	At a point in the low volume waste stream prior to mixing with once through cooling water for Unit 4.

II. SCHEDULE OF SAMPLING AND ANALYSIS

INFLUENT MONITORING

The following shall constitute the influent monitoring program:

Station	Constituent	Units	Type of Sample	Minimum Frequency of Analysis
I-001	temperature	F	-	continuous
	Tot. Sus. solids	mg/l Lbs/day	Grab	monthly
	pH	-	Grab	monthly

EFFLUENT MONITORING

The following shall constitute the effluent monitoring program:

Station	Constituent	Units	Type of Sample	Minimum Frequency of Analysis
E-001-A and E-002-A	temperature	F	-	continuous
	flow	MGD	from pump operating data	daily
	pH	pH units	Grab	monthly
	chlorine	mg/l	Grab	daily, when treating
	96-hour fish bioassay	% survivial	24-hour composite	monthly
	Tot. Sus solids	mg/l	grab	monthly
E-002-B	Oil & Grease	mg/l	grab	monthly
	Flow	mgd	-	monthly

I, Fred H. Dierker, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

FRED H. DIERKER
Executive Officer

October 19, 1983
Effective Date

Sample collection, storage, and analyses shall be performed according to the latest edition of Standard Methods for the Examination of Water and Wastewater prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, or other methods approved and specified by the Executive Officer of this Regional Board.

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health or a laboratory approved by the Executive Officer. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his laboratory and shall sign all reports of such work submitted to the Regional Board.

Federal regulations were published (Table I, 40 CFR 136, Federal Register 12/176) governing the methods that are to be used in analyzing wastes for pollutants. Dischargers are required to use Standard Methods for all parameters for which EPA and State Department of Health approves Standard Methods was not deemed acceptable and lists the method and reference that is considered acceptable.

If a discharger wishes to use an alternate method to Standard Methods which is approved by EPA, this request may be approved by the Executive Officer,

Under certain circumstances other methods will be approved by EPA on a case-by-case basis and upon request by the discharger.

Such a request may be made by letter until printed application forms are made available. The letter of application should contain the following information:

1. The name and address of the responsible person or firm making the discharger (if not the applicant), the permit number, the issuing agency , and the discharger serial number.

2. Identify the pollutant or parameter for which approval of an alternate testing procedure is being requested.

3. Justification for using testing procedures other than those specified;

4. A detailed description of the proposed alternate test procedure, together with references to published studies of the applicability of the test procedure to the effluents in question.

The regional board executive officer should foward the application letter to the State Board. The application will then be transmitted to the Department of Health with a request for comments and recommendations.

The State Board will consider the comments and recommendations received from the regional board, the Department of Health, and other agencies if appropriate, to formulate its recommendations to the Regional Adminstrator.

Within 30 days of receipt of an application, the State Board will forward such application, together with its recommendations, to the Regional Adminstrator, EPA. Within 90 days of receipt by the Regional Adminstrator of an application for an alternate test procedure, the Regional Adminstrator shall notify the applicant and regional board of approval or rejection, or shall specify the additional information which would be required to determine whether to approve the proposed test procedure.