

**THE STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

**ORDER NO. 00-082
NPDES NO. CA0001139**

**WASTE DISCHARGE REQUIREMENTS
FOR
AES ALAMITOS, L.L.C.
(ALAMITOS GENERATING STATION)**

The California Regional Water Quality Control Board, Los Angeles Region, (hereinafter Regional Board), finds:

1. AES Alamos, L.L.C. (Discharger) discharges wastewater under waste discharge requirements (WDRs) contained in Order No. 94-128, adopted by this Regional Board on December 5, 1994. This Order also serves as the National Pollutant Discharge Elimination System (NPDES) permit (NPDES No. CA0001139).
2. AES Alamos, L.L.C. has filed a report of waste discharge and has applied for renewal of its waste discharge requirements and NPDES permit.
3. AES Alamos, L.L.C. operates the Alamos Generating Station with a design capacity of 2,093 megawatts, at 690 Studebaker Road, Long Beach, California. AES Alamos, L.L.C. discharges up to 1,282.8 million gallons per day (mgd) of wastes consisting of once-through cooling water from six steam electric power generating units, sanitary wastes, and wastes from three retention basins for other wastes (wash wastes, floor drain wastes, condensate demineralizer wastes, metal cleaning wastes, fuel pipeline hydrostatic test water, and desalination reverse osmosis membrane reject wastes). The wastes are discharged into San Gabriel River, a water of the United States, through three channel bank outfalls that lie approximately 2,000 feet north of Westminster Avenue, along the western bank of the river. (Discharge Serial No. 001 - Latitude: 33°46'07", Longitude: 118°05'50"; No. 002 - Latitude: 33°46'12", Longitude: 118°05'50"; No. 003 - Latitude: 33°45'53", Longitude: 118°05'50").

The cooling water intake system at the Alamos Generating Station comprises:

- a. Units 1 and 2: a canal extending from Los Cerritos Channel: The intake structure draws water from the surface to a depth of 9 feet Mean Lower Low Water (MLLW).
- b. Units 3 and 4: an extension of the canal serving units 1 and 2: The intake structure draws water from the surface to a depth of 14 feet MLLW.
- c. Units 5 and 6: a separate canal extending from Los Cerritos Channel and branching off to two separate intake structures. One serves unit 5 and one serves

unit 6. Both intake structures draw water from the surface to a depth of 20 feet MLLW.

Figure 1 shows the location of the facility.

4. The non-chemical metal cleaning (fireside and preheater wash wastes) and chemical metal cleaning wastes are separately collected and pretreated through a physical treatment system using a filter press. The pretreated metal cleaning wastes, together with other low volume wastes (wash wastes, floor drain wastes, condensate demineralizer wastes, fuel pipeline hydrostatic test water, and reverse osmosis membrane reject from the desalination system) are then stored in settling basins before discharge to San Gabriel River through Discharge Serial Nos. 1, 2 and 3. Residues in the basins are periodically hauled away to a legal disposal site.

Sanitary wastes are treated in a biological waste treatment facility prior to discharge to the San Gabriel River through Discharge Serial Nos. 001 and 002.

Figure 2 shows the schematic diagram of the wastewater flow.

5. The Discharger controls marine fouling of the cooling water conduits (intake and discharge) by recirculating and temporarily reversing the flow of the once-through cooling water system and raising the temperature of the circulating water in each offshore conduit. This procedure (referred to as "heat treatment") is typically conducted every five (5) weeks and lasts about two (2) hours per conduit. During heat treatment, a portion of the once-through cooling water is directed to the intake of one of the four cooling water pumps for about two hours. The process is repeated until all four pump flow paths have been treated.
6. Calcareous shell debris accumulates in the intake screen structure as a result of the heat treatment process. Approximately once a year, the shell debris is physically removed for disposal in the Ocean.
7. To control biological growths (defouling), each of the condenser tubes, called the condenser halves, is treated by intermittently injecting chlorine (in the form of sodium hypochlorite), for a maximum of two (2) hours per generating unit per day, into the cooling water system.

8. The three existing discharges are described as follows:

a. Discharge Serial No. 001 (Units 1 and 2):

a.1. Average and Maximum Discharge Temperature Table:

Discharge	Winter (°F) (October to April)	Summer (°F) (May to September)	Heat Treatment (°F)
Average	65	101.8	--
Maximum	89	106	130

a.2. Total Maximum Flow: 210.5 mgd

a.3. Nature of Wastes: (Note that some flows are intermittent)

Waste Source	Average Flow, mgd
Once-through cooling water ^[1]	208
Preheater washwater ^[1]	2.4
Metal cleaning wastes ^[1]	0.12
Treated sanitary wastes ^[1]	0.01
Low volume wastes ^[1,2]	

[1] Discharge Serial No. 001 is normally closed. The wastes are normally discharged to Serial No. 002.

[2] Consisting of boiler (Units No. 1, 2) blowdown (0.025 mgd), yard and floor drains (0.068 mgd), and a small volume of condensate overboard (Units No. 1, 2) waste.

b. Discharge Serial No. 002 (Units 3 and 4):

b.1. Average and Maximum Discharge Temperature Table:

Discharge	Winter (°F) (October to April)	Summer (°F) (May to September)	Heat Treatment (°F)
Average	86.1	97	--
Maximum	92	103	130

b.2. Total Maximum Flow: 389 mgd

b.3. Nature of Wastes: (Note that some flows are intermittent)

Waste Source	Average Flow, mgd
Once-through cooling water	389
Treated sanitary wastes ^[1]	0.01
Low volume wastes ^[2]	

[1] The wastes may be discharged to Serial No. 001.

[2] Consisting of boiler (Units No. 3, 4) blowdown (0.025 mgd), yard and a small volume of condensate overboard (Units No. 3, 4) waste.

c. Discharge Serial No. 003 (Units 5 and 6):

c.1. Average and Maximum Discharge Temperature Table:

Discharge	Winter (°F) (October to April)	Summer (°F) (May to September)	Heat Treatment (°F)
Average	86.1	97	--
Maximum	92	103	130

c.2. Total Maximum Flow: 683.1 mgd

c.3. Nature of Wastes: (Note that some flows are intermittent)

Waste Source	Average Flow, mgd
Once-through cooling water	674
Reverse Osmosis membrane reject	7.5
Metal cleaning wastes	1.6
Low volume wastes ^[1]	

[1] Consisting of floor drains (0.053 mgd), condensate demineralizer regeneration wastes (0.025 mgd), and a small volume of calcite filter backwash water, tank farm rainfall runoff, yard drains, and a small volume of condensate overboard (Units No. 5, 6) waste.

9. Section 316(b) of the Federal Clean Water Act (Clean Water Act) requires that location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impacts.

10. On November 19, 1982, the U.S. Environmental Protection Agency (USEPA) promulgated Effluent Guidelines and Standards for the "Steam Electric Power Generating Point Source Category" (40 CFR Part 423). These regulations prescribe effluent limitation guidelines for once-through cooling water and various inplant waste streams.

40 CFR 423.12 (a) provides that effluent limitations either more or less stringent than the USEPA standards may be prescribed if factors relating to the equipment or facilities involved, the process applied, or other such factors are found to be fundamentally different from the factors considered in the establishment of the standards.

11. On July 23, 1997, the State Water Resources Control Board (State Board) adopted the revised *Water Quality Control Plan for Ocean Waters of California (Ocean Plan)*. The Ocean Plan contains water quality objectives for coastal waters of California. This Order includes effluent and receiving water limitations, prohibitions, and provisions which implement the objectives of the Ocean Plan.

12. On May 18, 1972, (amended on September 18, 1975), the State Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan)*. The Thermal Plan contains temperature objectives for the San Gabriel River estuary and the Pacific Ocean.
13. On June 13, 1994, this Regional Board adopted the *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan)*. The Basin Plan contains beneficial uses and water quality objectives for the San Gabriel River.
14. The beneficial uses of the receiving water are:

San Gabriel River Estuary - Hydrologic Unit 405.15

Existing: industrial service supply; navigation; contact and non-contact water recreation; commercial and sport fishing; estuarine habitat; marine habitat; wildlife habitat; rare, threatened, or endangered species; migration of aquatic organism; and spawning, reproduction, and/or early development.

Potential: shellfish harvesting.

The requirements in this Order are intended to protect designated beneficial uses and enhance the water quality of the watershed.

15. Pursuant to Section 402 (p) of the Clean Water Act and 40 CFR Parts 122, 123 and 124, the State Board adopted a general NPDES permit to regulate stormwater discharges associated with industrial activity (State Board Order No. 91-13-DWQ adopted in November 1991, amended by Order No. 92-12-DWQ adopted in September 1992). Stormwater discharges from power plants are subject to requirements under this general permit.
16. Effluent limitations and guidelines, national standards of performance, and toxic effluent standards established pursuant to Sections 208, 301, 302, 303, 304, 306, 307, and 316 of the Federal Clean Water Act, and amendments thereto, are applicable to the discharge.
17. In accordance with Federal and State Guidelines for Section 316 (b) of the Clean Water Act, the Discharger conducted a study to determine whether the cooling water intake structures are in compliance with regulations established pursuant to Section 316 (b) of the Clean Water Act. The study adequately addressed the important ecological and engineering factors specified in the guidelines, demonstrated that the ecological impacts of the intake system were environmentally acceptable, and determined that no modification of the intake structure was required. The design, construction, and operation of the intake structure represents Best Available Technology (BAT) as required by Section 316 (b) of the Clean Water Act.
18. In September 1984, the Discharger submitted a request for variance from the effluent residual chlorine limitation based on Ocean Plan objectives. The Regional Board and

the State Board approved the variance request and forwarded it to the USEPA in August 1988 for concurrence, pursuant to Section 301 (g) of the Clean Water Act.

On May 4, 1989, USEPA granted a Section 301 (g) variance from BAT for chlorine with the following conditions:

- (1) The effluent from Discharge Serial Nos. (Outfalls) 001, 002, and 003 must meet a limitation of 0.45 mg/L total residual chlorine (instantaneous maximum) based on daily sampling at Outfalls 001, 002, and 003 during periods of chlorination.
- (2) The effluent from Outfalls 001, 002, and 003 must meet a limitation of 0.50 mg/L free available chlorine (instantaneous maximum) based on daily sampling at Outfalls 001, 002, and 003 during periods of chlorination.
- (3) The effluent from Outfalls 001, 002, and 003 must meet chronic toxicity limits of 7.80 Tu_c (daily maximum) using the purple sea urchin (*Stronglyocentrotus purpuratus*). The test shall be conducted monthly using unchlorinated intake water which is chlorinated in the laboratory to the maximum concentration measured in the effluent during periods of effluent chlorination over the previous month. If the fertilization rate in the control organisms falls below 60 percent in any test, the test shall be repeated.

19. On July 10, 1989, the Discharger requested USEPA to allow use of the giant kelp spore testing protocol, rather than the purple sea urchin sperm protocol, to monitor chronic toxicity of the station effluent. Further, the Discharger requested that toxicity testing be required only during those months when total chlorine residual in the effluent exceeds 0.2 mg/L (BAT limit). EPA denied this request.

On July 17, 1989, the Discharger filed with USEPA a request for an Evidentiary Hearing on the Final Decision, 301 (g) Variance for Alamitos Generating Station. On May 23, 1996, USEPA revised the 301 (g) variance approval document to be consistent with the California Ocean Plan, which allowed the use of the giant kelp protocol for monitoring whole effluent toxicity. The following are the revisions:

- (1) The effluent from Outfalls 001, 002, and 003 must meet chronic toxicity limits of 5.5 Tu_c (daily maximum). The chronic toxicity tests must be representative of actual discharge conditions (at a minimum), or of the Proposed Modified Effluent Limitations (PMEL) conditions. This means that, at a minimum, the effluent samples must be chlorinated in the laboratory to levels consistent with the maximum total residual chlorine (TRC) effluent concentration measured during periods of chlorination during the previous three months. The requirement to chlorinate in the laboratory applies only if the recorded TRC concentrations exceeded the BAT limit of 0.2 mg/L during the previous 3 months.
- (2) In the event that the effluent chronic toxicity limitation is exceeded at any of the three outfalls, the Discharger shall increase the monitoring frequency to monthly at the subject outfall in accordance with the NPDES permit. If the chronic limit is

- exceeded again during the accelerated monitoring period, the Discharger shall conduct a toxicity reduction evaluation (TRE) to determine the cause of toxicity. The TRE shall be conducted in accordance with EPA's most-current TRE/toxicity identification evaluation (TIE) manuals.
20. In conformance with Implementation Provision 3 of the Thermal Plan and in accordance with specifications prepared by the Regional Board, the Discharger conducted a thermal effects study. The Study demonstrated that wastes discharges from the power plant were in compliance with the Thermal Plan and beneficial uses of the receiving waters were being protected, as required by Section 316(a) of the Clean Water Act.
 21. The requirements contained in this Order, as they are met, will be in conformance or in compliance with the goals of the aforementioned water control plans and statutes.
 22. Effluent limitations based on the California Ocean Plan numerical objectives were calculated using a minimum dilution ratio (parts sea water to one part effluent) of 4.5:1, except for residual chlorine which is 7.8:1. This ratio was based on calculations made by the Discharger and approved by the State Board.
 23. For toxic constituents regulated in the Ocean Plan (Table B) which the Discharger does not add into or produce in the treatment process and/or waste streams, no numerical limits are prescribed. Also, no numerical limits are prescribed for toxic constituents which are added but usage has been determined that there is very low probability of causing or contributing to excursions in the water quality standards. However, a narrative limit to comply with all Ocean Plan objectives is provided.
 24. Since the Table A, "Effluent Limitations" of the Ocean Plan are not applicable to steam electric generating plants, no numerical limits are prescribed for the acute toxicity.
 25. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code in accordance with Water Code Section 13389.
 26. Pursuant to California Water Code Section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Board. A petition must be sent to the State Water Resources Control Board, P.O. Box 100, Sacramento, California, 95812, within 30 days of adoption of the Order.

This Regional Board has notified the Discharger and interested agencies and persons of its intent to renew waste discharge requirements for this discharge, and has provided them with an opportunity to submit their written views and recommendations.

This Regional Board, in a public hearing, heard and considered all comments pertaining to the discharge and to the tentative requirements.

This Order shall serve as an NPDES permit, pursuant to Section 402 of the Federal Clean Water Act or amendments thereto, and shall take effect at the end of ten days from the date of its adoption, provided the Regional Administrator of United States Environmental Protection Agency (U.S. EPA) has no objections.

IT IS HEREBY ORDERED that AES Alamitos, L.L.C., in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Federal Clean Water Act and regulations and guidelines adopted thereunder shall comply with the following:

I. DISCHARGE LIMITATIONS

A. EFFLUENT LIMITATIONS

1. Wastes discharged shall be limited to those described in the findings only, as proposed.
2. The temperature of wastes discharged shall not exceed 105°F during normal operation of the facility. During heat treatment, the temperature of wastes discharged shall not exceed 125°F except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed 135°F. Temperature fluctuations during gate adjustment above 125°F shall not last for more than thirty (30) minutes.
3. The effluent pH shall at all times be within the range of 6.0 to 9.0 pH units.
4. Wastes discharged from Discharge Serial Nos. 001, 002, and 003, with constituents in excess of the following limits, are prohibited:

<u>Constituent</u>	<u>Unit of Measurement</u>	<u>DISCHARGE LIMITATIONS^(1,4)</u>	
		<u>Monthly Average</u>	<u>Daily Maximum</u>
Arsenic	ug/L	31	162
Cadmium	ug/L	6	24
Chromium (VI) ⁽²⁾	ug/L	11	44
Copper	ug/L	8	57
Lead	ug/L	11	44
Mercury	ug/L	0.22	0.88
Nickel	ug/L	28	112
Selenium	ug/L	83	332
Silver	ug/L	3	14.5
Zinc	ug/L	74	404
Chronic Toxicity ⁽³⁾	TU _c	—	5.5 ⁽⁴⁾

<u>Constituent</u>	<u>Unit of Measurement</u>	<u>DISCHARGE LIMITATIONS^[1,4]</u>	
		<u>Monthly Average</u>	<u>Daily Maximum</u>
Radioactivity	^[5]	^[5]	^[5]
Fecal coliform	MPN/100 ml	log mean of 200 ^[6]	--

[1] Concentration limits are based on Ocean Plan objectives using a dilution ratio of 4.5 to 1 (Receiving Water : Effluent). The daily mass emission rates (in pounds per day) shall be determined using the tabulated concentration limits and actual flow rate of the wastes.

[2] The Discharger has the option to meet the hexavalent chromium limitations with a total chromium analysis. However, if the total chromium level exceeds the hexavalent chromium limitation, it will be considered a violation unless an analysis has been performed for hexavalent chromium in a replicate sample, and the result is within the hexavalent chromium limits.

[3] Expressed as Chronic Toxicity Units (TU_c)

$$TU_c = 100/NOEC$$

where: NOEC (No Observed Effect Concentration) is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism as determined by the result of a critical life stage toxicity test listed on page 24, Appendix II, of the California Ocean Plan, adopted and effective on March 20, 1997. NOEC shall be determined based on toxicity tests having chronic endpoints.

[4] Based on the USEPA's decision (dated May 23, 1996) on Modification of Chronic Toxicity Monitoring Requirements for Alamitos Generating Station.

[5] Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269 of the California Code of Regulations or subsequent revisions.

[6] The fecal coliform concentration shall not exceed a log mean of 200/100 ml (based on a minimum of not less than four samples for any 30-day period), nor shall more than 10 percent of the total samples during any 30-day period exceed 400/100 ml.

5. Wastes discharged from Discharge Serial Nos. 001, 002 and 003 with constituents in excess of the following concentration limits are prohibited:

<u>Constituent</u>	<u>Unit</u>	<u>Discharge Limitation^[1]</u>	
		<u>Daily Average</u>	<u>Instantaneous Maximum</u>
Total residual chlorine ^[2,3]	mg/L	--	0.45
Free available chlorine	mg/L	0.20	0.50

[1] The daily mass emission rates (in lbs per day) shall be determined using the tabulated concentration limits and actual flow rate of the waste.

[2] Chlorine shall not be discharged from any single generating unit for more than two hours per day.

[3] If other oxidants are used, this shall be the total oxidants, reported as residual chlorine.

6. Permitted Mass Emission Rate Limitations at Discharge Serial Nos. 001, 002 and 003:

Mass emission rate limitations for each pollutant shall be determined by multiplying the maximum flow rate discharged to the receiving water and the appropriate effluent concentration limits listed in the above tables. The permitted mass emission rate calculations for each pollutant discharged to San Gabriel River would be done as follows:

$$\text{Permitted Mass Emission Rate} = \text{Maximum Flow Rate (mgd)} \times \text{Effluent Limit (daily maximum or 30-day average)}$$

7. Effluent Limitations for Inplant Waste Streams:

a. The discharge of metal cleaning wastes^[1] with constituents in excess of the following limits is prohibited:

<u>Constituent</u>	<u>Units</u>	<u>Discharge Limitation^[2]</u>	
		<u>Monthly Average</u>	<u>Daily Maximum</u>
Suspended Solids	mg/L	30	100
Oil and grease	mg/L	15	20
Copper, total	mg/L	1.0	1.0
Iron, total	mg/L	1.0	1.0

[1] For the purpose of these limitations, metal cleaning wastes shall mean any wastewater resulting from chemical cleaning of any metal process equipment including, but not limited to, boiler tube, boiler fireside, and air preheaters.

[2] The daily mass emission rates (in lbs/day) shall be determined using the tabulated concentration limits and the actual volume of metal cleaning wastes.

b. The discharge of low volume wastes with constituents in excess of the following limits is prohibited:

<u>Constituent</u>	<u>Units</u>	<u>Discharge Limitation^[1]</u>	
		<u>Monthly Average</u>	<u>Daily Maximum</u>
Suspended Solids	mg/L	30	100
Oil and grease	mg/L	15	20

[1] The daily mass emission rates (in lbs/day) shall be determined using the tabulated concentration limits and actual flow of low volume wastes.

- c. The discharge of an effluent from the sanitary waste treatment facility in excess of the following limits is prohibited:

<u>Constituent</u>	<u>Units</u>	<u>Discharge Limitation^[1]</u>	
		<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD ₅ 20°C	mg/L	30	45
Suspended solids	mg/L	30	45
Settleable solids	ml/L	0.1	0.3
Oil and grease	mg/L	10	15

[1] The daily mass emission rates (in lbs/day) shall be determined using the tabulated concentration limits and actual flow of the sanitary wastes.

- d. In the event that waste streams from various sources (7-a, 7-b, and 7-c above) are combined for treatment or discharge, the concentration level of each pollutant shall not exceed the specified limitation for that waste source.

B. RECEIVING WATER LIMITATIONS

1. Floating particulates and oil and grease shall not be visible as a result of wastes discharged.
2. Wastes discharged shall not: alter the color of the receiving waters; create a visual contrast with the natural appearance of the water; nor cause esthetically undesirable discoloration of the ocean surface.
3. The transmittance of natural light shall not be significantly reduced at any point outside the zone of initial dilution as a result of wastes discharged.
4. The rate of deposition and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded as a result of wastes discharged.
5. The wastes discharged shall not depress the dissolved oxygen concentrations outside the zone of initial dilution at any time by more than 10 percent from that which occurs naturally, excluding effects of naturally-induced upwelling.
6. The wastes discharged shall not change the pH of the receiving waters at any time more than 0.2 pH units from that which occurs naturally outside the zone of initial dilution.

7. The dissolved sulfide concentration of waters in, and near, sediments shall not be significantly increased above that present under natural conditions as a result of wastes discharged.
8. The wastes discharged shall not increase the concentrations, in marine sediments, of toxic substances listed in Table B of the Ocean Plan, to levels which would degrade indigenous biota.
9. The concentration of organic materials in marine sediments shall not be increased above that which would degrade marine life as a result of waste discharged.
10. The wastes discharged shall not cause objectionable aquatic growths or degrade indigenous biota.
11. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded as a result of wastes discharged.
12. The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health as a result of wastes discharged.
13. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered as a result of wastes discharged.
14. The wastes discharged shall not cause objectionable odors to emanate from the receiving waters.
15. The wastes discharged shall not cause receiving waters to contain any substance in concentrations toxic to human, animal, plant, or fish life.
16. No physical evidence of wastes discharged shall be visible at any time in the water or on beaches, shores, rocks, or structures.
17. The salinity of the receiving waters shall not be changed by the wastes discharged to an extent such as to be harmful to marine biota.
18. The wastes discharged shall not contain individual pesticide, or combination of pesticides, in concentrations that adversely affect beneficial uses.

II. REQUIREMENTS AND PROVISIONS

- A. The Discharger must develop and implement a Storm Water Pollution Prevention Plan (SWPPP) in accordance with Attachment A (Storm Water Pollution Prevention Plan) within

120 days of the effective date of this Order. An existing SWPPP which complies with the requirements in Attachment A is acceptable.

- B. The Discharger must comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies regarding discharges of storm water to storm drain systems or other water courses under their jurisdiction; including applicable requirements in municipal storm water management programs developed to comply with NPDES permits issued by the Regional Board to local agencies.
- C. The wastes discharged shall comply with all Ocean Plan objectives.
- D. The Discharger shall comply with all applicable effluent limitations, national standards of performance, toxic effluent standards, and all federal regulations established pursuant to Sections 301, 302, 303(d), 304, 306, 307, 316, and 423 of the Federal Clean Water Act and amendments thereto.
- E. The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act to any waste stream, which may ultimately be released to waters of the United States, is prohibited unless specifically authorized elsewhere in this permit. This requirement is not applicable to products used for lawn and agricultural purposes. Discharge of chlorine for disinfection in plant potable and service water systems and in sewage treatment is authorized.
- F. The discharge of any waste resulting from the combustion of toxic or hazardous wastes to any waste stream which ultimately discharges to waters of the United States is prohibited, unless specifically authorized elsewhere in this permit.
- G. There shall be no discharge of polychlorinated biphenyl compounds, such as those once commonly used for transformer fluid.
- H. The Discharger shall notify the Executive Officer in writing no later than six months prior to planned discharge of any chemical, other than chlorine or other product previously reported to the Executive Officer, which may be toxic to aquatic life. Such notification shall include:
 - 1. Name and general composition of the chemical,
 - 2. Frequency of use,
 - 3. Quantities to be used,
 - 4. Proposed discharge concentrations, and
 - 5. USEPA registration number, if applicable.

No discharge of such chemical shall be made prior to receiving the Executive Officer's approval.

- I. The Regional Board and USEPA shall be notified immediately, by telephone, of the presence of adverse conditions in the receiving waters or on beaches and shores as a result of wastes discharge; written confirmation shall follow as soon as possible, but not later than five working days after occurrence.
- J. This Order may be modified, revoked and reissued, or terminated in accordance with the provisions of 40 CFR Parts 122.44, 122.62 to 122.64, 125.62, and 125.64. Causes for taking such actions include, but are not limited to: failure to comply with any condition of this Order and permit, endangerment to human health or the environment resulting from the permitted activity; or acquisition of newly obtained information which would have justified the application of different conditions if known at the time of Order adoption and issuance.

Following submission of the fish impingement, benthic and mussel studies, the Executive Officer shall either (1) propose to the Regional Board modifications to this permit, as appropriate, or (2) provide a report to the Regional Board summarizing the results of those studies and indicating why modifications to the permit are not proposed.

The filing of a request by the Discharger for an order and permit modification, revocation and issuance, or termination; or a notification of planned changes or anticipated noncompliances does not stay any condition of this Order and permit.

- K. This Order may also be modified, in accordance with the provisions set forth in 40 CFR, Parts 122 and 124, to include requirements for the implementation of the watershed protection management approach.
- L. This order and permit includes the attached "Standard Provisions and General Monitoring and Reporting Requirements (03/01/99)" (Standard Provisions, Attachment N). If there is any conflict between provisions stated hereinbefore and the attached "Standard Provisions", those provisions stated hereinbefore prevail.
- M. This Order and permit includes the attached Monitoring and Reporting Program (Attachment T). If there is any conflict between provisions stated in the Monitoring and Reporting Program and the Standard Provisions, those provisions stated in the former prevail.

III. EXPIRATION DATE

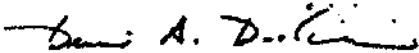
This Order expires on May 10, 2005.

The Discharger must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of the expiration date as application for issuance of new waste discharge requirements.

IV. Rescission

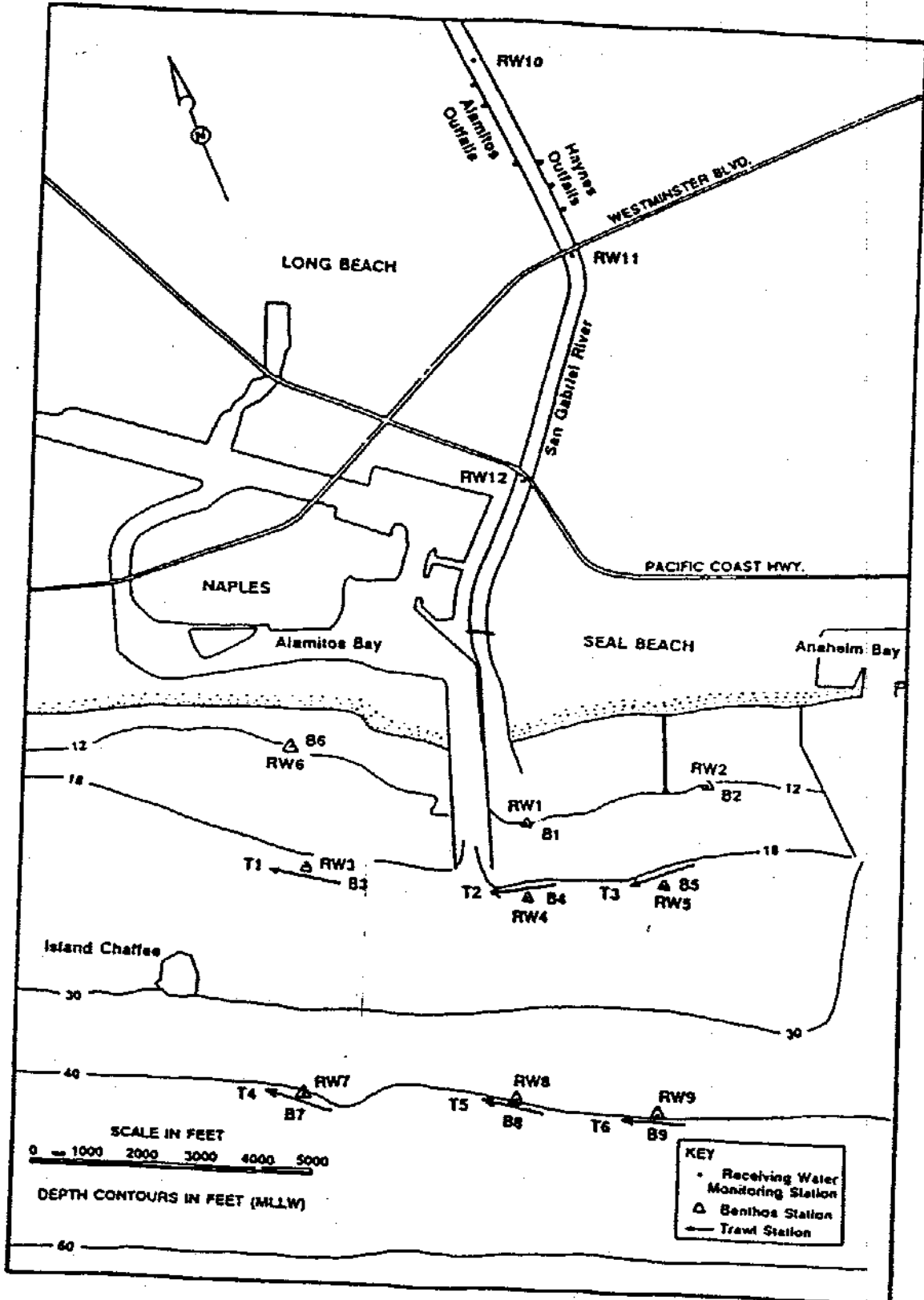
Order No. 94-128, adopted by this Board on December 5, 1994, is hereby rescinded.

I, Dennis A. Dickerson, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on June 29, 2000.



Dennis A. Dickerson
Executive Officer

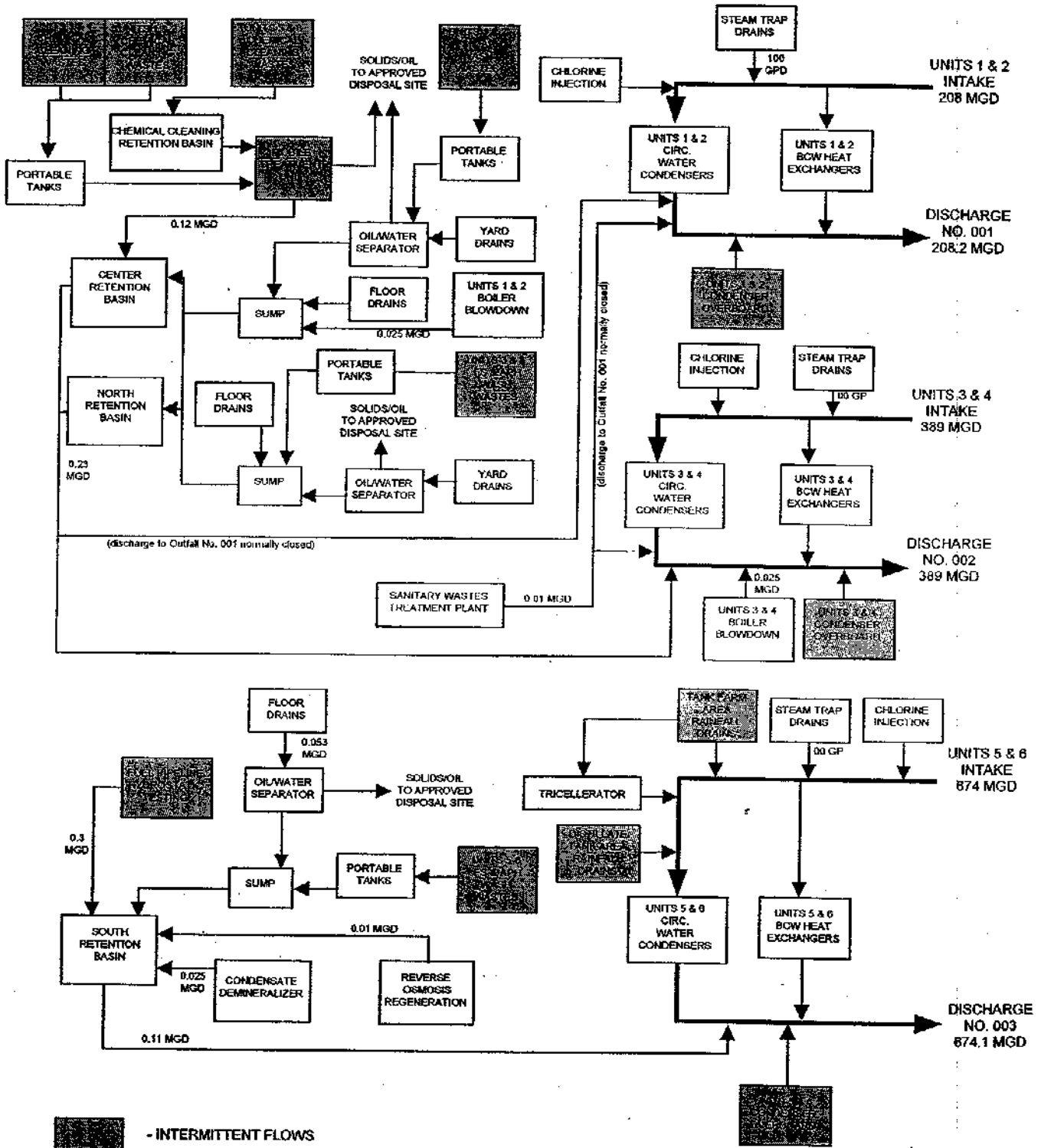
Southern California Edison
Alamitos Generating Station



Alamitos Receiving Water Monitoring Stations

SCHEMATIC OF WATER FLOW

AES ALAMITOS L.L.C.
LONG BEACH, CALIFORNIA
MARCH 1999



PRIORITY POLLUTANTS

Metals

Antimony
Arsenic
Beryllium
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Zinc

Miscellaneous

Cyanide
Asbestos (only if specifically required)

Pesticides & PCBs

Aldrin
Chlordane
Dieldrin
4,4'-DDT
4,4'-DDE
4,4'-DDD
Alpha-endosulfan
Beta-endosulfan
Endosulfan sulfate
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide
Alpha-BHC
Beta-BHC
Gamma-BHC
Delta-BHC
Toxaphene
PCB 1016
PCB 1221
PCB 1232
PCB 1242
PCB 1248
PCB 1254
PCB 1260

Base/Neutral Extractibles

Acenaphthene
Benzidine
1,2,4-trichlorobenzene
Hexachlorobenzene
Hexachloroethane
Bis(2-chloroethyl) ether
2-chloronaphthalene
1,2-dichlorobenzene
1,3-dichlorobenzene
1,4-dichlorobenzene
3,3'-dichlorobenzidine
2,4-dinitrotoluene
2,6-dinitrotoluene
1,2-diphenylhydrazine
Fluoranthene
4-chlorophenyl phenyl ether
4-bromophenyl phenyl ether
Bis(2-chloroisopropyl) ether
Bis(2-chloroethoxy) methane
Hexachlorobutadiene
Hexachlorocyclopentadiene
Isophorone
Naphthalene
Nitrobenzene
N-nitrosodimethylamine
N-nitrosodi-n-propylamine
N-nitrosodiphenylamine
Bis(2-ethylhexyl) phthalate
Butyl benzyl phthalate
Di-n-butyl phthalate
Di-n-octyl phthalate
Diethyl phthalate
Dimethyl phthalate
Benzo(a) anthracene
Benzo(a) pyrene
Benzo(b) fluoranthene
Benzo(k) fluoranthene
Chrysene
Acenaphthylene
Anthracene
1,12-benzoperylene
Fluorene
Phenanthrene
1,2,5,6-dibenzanthracene
Indeno (1,2,3-cd) pyrene
Pyrene
TCDD

Acid Extractibles

2,4,6-trichlorophenol
P-chloro-m-cresol
2-chlorophenol
2,4-dichlorophenol
2,4-dimethylphenol
2-nitrophenol
4-nitrophenol
2,4-dinitrophenol
4,6-dinitro-o-cresol
Pentachlorophenol
Phenol

Volatile Organics

Acrolein
Acrylonitrile
Benzene
Carbon tetrachloride
Chlorobenzene
1,2-dichloroethane
1,1,1-trichloroethane
1,1-dichloroethane
1,1,2-trichloroethane
1,1,2,2-tetrachloroethane
Chloroethane
Chloroform
1,1-dichloroethylene
1,2-trans-dichloroethylene
1,2-dichloropropane
1,3-dichloropropylene
Ethylbenzene
Methylene chloride
Methyl chloride
Methyl bromide
Bromoform
Dichlorobromomethane
Chlorodibromomethane
Tetrachloroethylene
Toluene
Trichloroethylene
Vinyl chloride
2-chloroethyl vinyl ether
Xylene

**STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

**MONITORING AND REPORTING PROGRAM NO. CJ-6113
FOR
AES ALAMITOS, L.L.C.
(NPDES NO. CA0001139)**

I. Monitoring and Reporting Requirements

- A. The Discharger shall implement this monitoring program on the effective date of this Order. Effluent monitoring reports shall be submitted monthly, by the first day of the second month following each monthly sampling period. The first monitoring report under this program is due by September 1, 2000, covering the monitoring period of June and July 2000. The annual summary report, which contains a discussion of the previous year's effluent monitoring data, as well as graphical and tabular summaries of the data, shall be received by March 15 of each year.
- B. All samples shall be representative of the waste discharge under the conditions of peak load. Semiannual effluent analyses shall be performed during the months of May and November. Annual effluent analyses shall be performed during the months of January or February. Results of quarterly, semiannual, and annual analyses shall be reported in the appropriate monthly monitoring report following analyses.
- C. Laboratory analyses - All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory approved by the Executive Officer or certified for such analyses by the State Department of Health Services Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be submitted with the Annual Report.
- D. Analytical data shall be reported on Regional Board Laboratory Report Forms. These forms contain the requirements for analytical test results and Quality Assurance/Quality Control (QA/QC) reports for all water/wastewater samples analyzed for volatile organic compounds, petroleum hydrocarbons, and metals. Analytical results for major wastewater constituents and other toxic materials for which the Regional Board has not yet developed laboratory forms shall be reported separately but with similar information as in the Regional Board's laboratory forms.
- E. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136.3. All QA/QC items must be run on the same dates that samples are actually analyzed, and the results shall be reported in the Regional Board format, and submitted with the laboratory reports. Proper chain-of-custody procedures must be followed, and a copy shall be submitted with the report.

The data shall be submitted to the Regional Board on hard copy and on 3 1/2" computer diskette. Submitted data must be IBM compatible, preferably using Excel[®] software.

- F. The detection limits employed for effluent analyses shall be lower than the permit limits established for a given parameter, unless the Discharger can demonstrate that a particular detection limit is not attainable and obtains approval for a higher detection limit from the Executive Officer. At least once each year, the Discharger shall submit a list of the analytical methods employed for each test and associated laboratory quality assurance/quality control procedures and ELAP certification.
- G. The monitoring report shall specify the USEPA analytical method used, the Method Detection Limit (MDL) and the Minimum Level (ML) for each pollutant. For the purpose of reporting compliance with numerical limitations, performance goals, and receiving water limitations, analytical data shall be reported with one of the following methods, as the case may be:
1. An actual numerical value for sample results greater than or equal to the ML; or
 2. "Detected, but Not Quantified (DNQ)" if results are greater than or equal to the laboratory's Matrix MDL but less than the ML.
 3. "Not-Detected (ND)" for sample results less than the laboratory's Matrix MDL with the MDL indicated for the analytical method used.

The MLs are those published by the State Water Resources Control Board in the *Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, March 2, 2000*.

- H. The ML employed for effluent analyses shall be lower than the permit limits established for a given parameter, unless the Discharger can demonstrate that a particular ML is not attainable and obtains approval for a higher ML from the Executive Officer. At least once a year, the Discharger shall submit a list of the analytical methods employed for each test and associated laboratory quality assurance/quality control procedures.

II. Effluent Monitoring

- A. Sampling stations shall be established at each point of discharge (before contact with San Gabriel River) and shall be located where representative samples of the effluent can be obtained. The following shall constitute the effluent monitoring program for Discharge Serial Nos. 001, 002 and 003:

1. Wastewater Constituents/Parameters

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
Total waste flow ^[1]	gal/day	—	daily
Temperature ^[1]	°F	continuous	—
pH	pH units	grab	weekly
Total residual chlorine ^[2]	mg/l	grab ^[3]	daily
Free available chlorine ^[2]	mg/l	grab ^[3]	daily
Ammonia nitrogen	µg/l	grab	annually
Nitrate nitrogen	mg/l	grab	annually
Radioactivity ^[4]	pci/l	grab	annually
Toxicity, chronic ^[5,6,7]	TU _c	grab	quarterly
Coliform group ^[8] (total and fecal)	MPN/100 mL	grab	monthly ^[9]
Priority pollutants (See Attachment)	ug/l	grab	annually

Footnotes:

- [1] Where continuous monitoring of temperature, and flow is required, the following shall be included in the report:
- Temperature: Only the maximum temperature for each calendar day shall be reported, except when temperatures exceed 105°F, the reason(s), time of day, and duration of such events shall be reported.
- Flow: Total daily flow.
- [2] Monitoring is only applicable during periods of chlorine addition. A statement certifying that chlorination did not occur during the day may be submitted in lieu of an analysis.
- [3] Multiple grab samples, with at least four equally-spaced samples during each hour of chlorine addition, the maximum and average concentrations for the duration of chlorine addition shall be reported. Alternatively, a single grab sample may be collected at the time of peak residual chlorine concentration. The Discharger shall conduct a study on the plant's chlorination cycle to determine the time of peak residual chlorine concentration. The study plan shall be subject to the Executive Officer's approval.
- [4] Radioactivity determinations of gross and net beta activity, in picocuries per liter, shall be made within 48 hours following preparation of samples. The overall efficiency of the counting system, size of sample and counting time shall be such that radioactivity can be determined to a sensitivity of ten picocuries per liter with a 95% confidence limit not to exceed 50 percent. A statement certifying that radioactive pollutants were not added to the discharge may be submitted in lieu of monitoring.
- [5] Initial screening shall be conducted using a minimum of three test species with approved test

protocols listed in the California Ocean Plan (State Water Resources Control Board, 1997) to determine the most sensitive test organism for chronic toxicity testing (other test species may be added to the Ocean Plan list when approved by the State Board). If possible, the test species used during the screening process should include a fish, an invertebrate and an aquatic plant.

After the initial screening period, chronic toxicity testing may be limited to the most sensitive test species. However, the initial screening process shall be repeated annually, with a minimum of three test species with approved test protocols to ensure use of the most sensitive species for chronic toxicity testing.

Dilution and control waters should be obtained from an unaffected area of the receiving waters. Standard dilution water may be used if the above source exhibits toxicity greater than 1.0 $t_{0.5}$. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each batch of bioassay tests and reported with the test results.

- [6] Chronic toxicity shall be expressed and reported as toxic units, where:

$$t_{0.5} = 100/\text{NOEC}$$

The No Observable Effect Concentration (NOEC) is expressed as the maximum percent effluent that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed on Page 24 of the Ocean Plan.

The effluent tests shall be conducted with concurrent reference toxicant tests. Both the reference toxicant and effluent test must meet all protocols. If the test acceptability criteria is not achieved, then the Discharger must re-sample and re-test within 14 days. The Discharger shall submit the data on hard copy and on electronic disk as specified in Suggested Standard Reporting Requirements for Monitoring Chronic Toxicity (SWRCB, August 1993).

- [7] In the event of an exceedance of the chronic toxicity effluent limitation, the sampling frequency shall increase to monthly until compliance has been demonstrated for three consecutive months. If the discharge consistently exceeds the chronic toxicity effluent limitation, a toxicity identification evaluation (TIE) is required. The TIE shall include all reasonable steps to identify the source(s) of toxicity. Once the source of toxicity is identified, the Discharger shall take all reasonable steps necessary to reduce toxicity to the required level.
- [8] Coliform samples shall be obtained at some point in the treatment process at a time when wastewater flow and characteristics are most demanding on the treatment facilities and disinfection procedures. The location(s) of the sampling point(s) and any proposed changes thereto must be approved by the Executive Officer, and the proposed changes shall not be made until such approval has been granted. For discharge serial nos. 001, 002 and 003, coliform sampling shall be required only for those discharge points receiving a sanitary waste discharge.
- [9] Weekly sampling shall be conducted during first year. If sample shows full compliance with the discharge limitation during first year, the frequency of analysis may be converted to monthly. If not, the sampling frequency shall be remained as weekly.

2. Metals:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
Antimony	µg/L	grab	semi-annually
Arsenic	µg/L	grab	semi-annually
Beryllium	µg/L	grab	semi-annually
Chromium (III)	µg/L	grab	semi-annually
Hexavalent chromium	µg/L	grab	semi-annually
Cadmium	µg/L	grab	semi-annually
Copper	µg/L	grab	semi-annually
Lead	µg/L	grab	semi-annually
Mercury	µg/L	grab	semi-annually
Nickel	µg/L	grab	semi-annually
Selenium	µg/L	grab	semi-annually
Silver	µg/L	grab	semi-annually
Thallium	µg/L	grab	semi-annually
Zinc	µg/L	grab	semi-annually

B. The effluent monitoring program for Inplant Waste Streams is as follows:

1. Chemical Metal Cleaning Wastes:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
Flow ⁽¹⁾	mgd	—	monthly
pH	pH units	grab	monthly
Suspended solids	mg/L	grab	monthly
Oil and grease	mg/L	grab	monthly
Copper, total	mg/L	grab	monthly
Iron, total	mg/L	grab	monthly

[1] If no discharge occurred during the month, the report shall so state.

2. Non-Chemical Metal Cleaning Wastes:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
Flow ⁽¹⁾	mgd	—	monthly
pH	pH units	grab	monthly
Suspended solids	mg/L	grab	monthly
Oil and grease	mg/L	grab	monthly

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
Copper ^[2]	mg/L	grab	monthly
Iron ^[2]	mg/L	grab	monthly

[1] If no discharge occurred during the month, the report shall so state.

[2] Dissolved metal fractions only.

3. Low Volume Wastes:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
Flow ^[1]	mgd	—	monthly
pH	pH units	grab	monthly
Suspended solids	mg/L	grab	monthly
Oil and grease	mg/L	grab	monthly
Priority Pollutants	µg/L	grab	annually ^[2]

[1] If no discharge occurred during the month, the report shall so state.

[2] Sampling and analyses shall be on a quarterly basis during the first two years after the adoption of this Order, and annually thereafter.

4. Sanitary Wastes:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
Flow ^[2]	mgd	—	monthly
BOD ₅ 20°C	mg/L	grab	monthly
Suspended solids	mg/L	grab	monthly
Settleable solids	ml/L	grab	monthly
Oil and grease	mg/L	grab	monthly
Coliform group ^[1] (total and fecal)	Number/ 100 ml	grab	monthly

[1] Coliform samples shall be obtained at some point in the treatment process at a time when wastewater flow and characteristics are most demanding on the treatment facilities and disinfection procedures. The location(s) of the sampling point(s) and any proposed changes thereto must be approved by the Executive Officer, and the proposed changes shall not be made until such approval has been granted.

[2] If no discharge occurred during the month, the report shall so state.

C. In the determination of compliance with the monthly average limitations, the following provisions shall apply to all constituents:

1. If the analytical result of a single sample, monitored monthly or at a lesser frequency, does not exceed the monthly average limit for that constituent, the Discharger will have demonstrated compliance with the monthly average limit for that month.
2. If the analytical result of a single sample, monitored monthly or at a lesser frequency, exceeds the monthly average limit for any constituent, the Discharger shall collect three additional samples at approximately equal intervals during the month. All four analytical results shall be reported in the monitoring report for that month, or 45 days after the sample was obtained, whichever is later.

If the numerical average of the analytical results of these four samples does not exceed the monthly average limit for that constituent, compliance with the monthly average limit has been demonstrated for that month. Otherwise, the monthly average limit has been violated.

3. If Item C.2 have not been implemented, and the result of one sample (Item C.1) exceeds the monthly average, and then the Discharger is in violation of the monthly average limit.
4. In the event of noncompliance with a monthly average effluent limitation, the sampling frequency for that constituent shall be increased weekly and shall continue at this level until compliance with the monthly average effluent limitation has been demonstrated.

III. Intake Monitoring

A. Intake cooling water monitoring program

The intake cooling water shall be analyzed for metals semi-annually as listed in II.A.2 for a period of two years following the date of this permit. The sampling and analyses for both effluent and intake cooling water shall be performed at the same time. The Executive Officer shall be empowered to require a continuation such monitoring at his reasonable discretion.

B. Fish impingement program

Impingement sampling for fish and commercially important macroinvertebrates shall be conducted semi-annually at Intake Units Nos. 1-2, 3-4 and 5-6. Impingement sampling shall coincide with heat treatments.

Fish and macroinvertebrates shall be identified to the lowest possible taxon. For each intake point, data reported shall include numerical abundance of each fish and macroinvertebrate species, wet weight of each species (when combined weight of individuals in each species exceeds 0.2 kg), number of individuals in each 1-centimeter size class (based on standard length) for each species and total number of species

collected. When large numbers of given species are collected, length/weight data need only be recorded for 50 individuals and total number and total weight may be estimated based on aliquot samples. Total fish impinged per heat treatment or sampling event shall be reported and data shall be expressed per unit volume water entrained.

IV. Receiving Water Monitoring

A. Regional Monitoring Program

1. Pursuant to the Code of Federal Regulation [40 CFR §122.41(j) and §122.48(b)], the monitoring program for a discharger receiving a National Pollutant Elimination System (NPDES) permit must determine compliance with NPDES permit terms and conditions, and demonstrate that State water quality standards are met. However, since compliance monitoring focuses on the effects of the point source discharge, this type of program is not designed to assess impacts from other sources of pollution (e.g., non-point source run-off, aerial fallout) nor to evaluate the current status of important ecological resources on a regional basis.
2. The U.S. Environmental Protection Agency and the Los Angeles Regional Water Quality Control Board are attempting to redesign discharger monitoring programs to combine the need for compliance monitoring with the benefits of a regional program to address public health concerns, monitor trends in natural resources, and near-shore habitats, and assess regional impacts from all contaminant sources.

A pilot regional monitoring program was conducted throughout the Southern California Bight during the summer of 1994 to test an alternative sampling design that combined elements of compliance monitoring with a broader regional assessment approach. This pilot program included participation by the four largest wastewater treatment agencies involved in ocean monitoring in southern California.

A second regional monitoring program was conducted in the Southern California Bight during the summer of 1998. This second regional monitoring effort built upon the successes and experience gained during the first pilot program. As a result, the 1998 regional sampling was much broader in scope and involved a much larger number of participants, including the agencies responsible for operating power generating stations (Edison and Los Angeles Department of Water and Power).

3. Given the apparent benefits realized by the first two regional monitoring programs, it is probable that similar comprehensive sampling efforts will be repeated for the Southern California Bight at periodic intervals (perhaps every four to five years). At the present time, it appears likely that the next regional monitoring program will be attempted during the summer of 2002.

The first two regional monitoring programs were funded in large part by negotiating resource exchanges with the participating discharger agencies. During the year

when regional monitoring was scheduled, USEPA and the Los Angeles Regional Board agreed to eliminate portions of the routine compliance monitoring programs for that one year, while retaining certain critical compliance monitoring elements, and allowed these exchanged resources to be redirected to complete sampling within the regional monitoring program design. During other years, the discharger conducted the usual routine compliance monitoring program.

4. We anticipate that future regional monitoring programs will be funded in a similar manner. Revisions to the routine compliance monitoring program will be made under the discretion of the USEPA and the Los Angeles Regional Board as necessary to accomplish this goal; and may include resource exchanges in the number of parameters to be monitored, the frequency of monitoring, or the number, type, and location of samples collected.

B. Receiving Water Monitoring

The receiving water monitoring program shall consist of periodic biological surveys of the area surrounding the discharge, and shall include studies of those physico-chemical characteristics of the receiving waters which may be impacted by the discharge.

This program may be performed as a joint effort with the City of Los Angeles, in connection with the Receiving Water Monitoring Program for the Haynes Generating Station.

Location of Sampling Stations (see attached figure):

1. Receiving water stations offshore of the San Gabriel River shall be located as follows:
 - a. Station RW1 - seaward of the southeast San Gabriel River Jetty, at a depth of 12 feet.
 - b. Station RW2 - 500 feet downcoast of the Seal Beach Pier, at a depth of 12 feet.
 - c. Station RW3 - directly offshore of Station RW6, at a depth of 20 feet.
 - d. Station RW4 - directly offshore of Station RW1, at a depth of 20 feet.
 - e. Station RW5 - directly offshore of Station RW2, at a depth of 20 feet.
 - f. Station RW6 - 2,600 feet upcoast of the northwest Alamitos Bay Jetty at a depth of 12 feet.
 - g. Station RW7 - directly offshore of Station RW3, at a depth of 40 feet.

- h. Station RW8 - directly offshore of Station RW4, at a depth of 40 feet.
- i. Station RW9 - directly offshore of Station RW5, at a depth of 40 feet.
- 2. Receiving water stations in the San Gabriel River shall be located as follows:
 - a. Station RW10 - at the 7th Street Bridge, at a point midway between the banks of the river.
 - b. Station RW11 - at the Westminster Avenue Bridge, at a point midway between the banks of the river.
 - c. Station RW12 - at the Pacific Coast Highway Bridge, at a point midway between the banks of the river.
- 3. Benthic stations shall be located as follows:
 - a. Stations B1 through B12 - directly beneath Stations RW1 through RW12, respectively.
- 4. Trawling stations shall be located as follows:
 - a. Station T1 - directly beneath Station RW3.
 - b. Station T2 - directly beneath Station RW4.
 - c. Station T3 - directly beneath Station RW5.
 - d. Station T4 - directly beneath Station RW7.
 - e. Station T5 - directly beneath Station RW8.
 - f. Station T6 - directly beneath Station RW9.

C. Type and Frequency of Sampling:

- 1. Temperature profiles shall be measured semi-annually (summer and winter) each year at Stations RW1 through RW12 from surface to bottom at a minimum of one-meter intervals. Dissolved oxygen levels and pH shall be measured semi-annually at the surface, mid-depth, and bottom at each station, at a minimum. All stations shall be sampled on both a flooding tide and an ebbing tide during each semi-annual survey.
- 2. Sampling by otter trawl shall be conducted semi-annually (summer and winter) each year along transects at Stations T1 through T6.

- a. Trawl net dimensions shall be as follows:
 - (1) At least a 25 foot throat width.
 - (2) 1.5" mesh size (body)
 - (3) 0.5" mesh size (liner in the cod end)
 - b. Two replicate trawls shall be conducted at each station for a duration of 10 minutes each at a uniform speed between 2.0 and 2.5 knots.
 - c. The identity, size (standard length), wet weight, and number of fish in each trawl shall be reported. The number of fish affected by abnormal growth or disease, such as fin erosion, lesions, and papillomas, shall be reported. Fish species shall be reported in rank order of abundance and frequency of occurrence for each trawl. The Shannon-Wiener diversity index shall also be computed for each trawl.
 - d. All commercially important macroinvertebrates shall be identified, enumerated, and reported in the same manner as fish species.
3. Benthic sampling shall be conducted annually during the summer at Stations B1 through B12.
- a. One liter sediment core samples shall be collected by divers at each of the benthic stations for biological examination and determination of biomass and diversity, and for sediment analyses. Four replicates shall be obtained at each station for benthic analyses, and each shall be analyzed separately. A fifth sample shall be taken at each station for sediment analyses and general description.
 - b. Each benthic replicate sample shall be sieved with a 0.5 mm standard mesh screen. All organisms recovered shall be enumerated and identified to the lowest taxon possible. Infaunal organisms shall be reported as concentrations per liter for each replicate and each station. Total abundance, number of species and Shannon-Weiner diversity indices shall be calculated (using natural logs) for each replicate and each station.

Biomass shall be determined as the wet weight in grams or milligrams retained on a 0.5 millimeter screen per unit volume (e.g., 1 liter) of sediment. Biomass shall be reported for each major taxonomic group (e.g., polychaetes, crustaceans, mollusks) for each replicate and each station.
 - c. Sediment grain size analyses shall be performed on each sediment sample (sufficiently detailed to calculate percent weight in relation to phi size). During the first year of the permit, sub-samples (upper two centimeters) shall be taken from each sediment sample and analyzed for copper, chromium, nickel and zinc.
4. The following general observations or measurements at receiving water and

- benthic stations shall be reported.
- a. Tidal stage and time of monitoring.
 - b. General water conditions.
 - c. Extent of visible turbidity or color patches.
 - d. Appearance of oil films or grease, or floatable material.
 - e. Depth at each station for each sampling period.
 - f. Presence or absence of red tide.
 - g. Presence of marine life.
 - h. Presence and activity of the California least tern and the California brown pelican.
5. During periodic maintenance of the intake structure and discharge of calcareous material to the receiving waters, the following observations or measurement shall be recorded and reported in the next monitoring report:
- a. Date and times of discharge(s).
 - b. Estimate of volume and weight of discharge(s).
 - c. Composition of discharge(s).
 - d. General water conditions and weather condition.
 - e. Appearance and extent of visible turbidity or color patches.
 - f. Appearance and extent of any oil films or grease, floatable material or odors.
 - g. Presence of marine life.
 - h. Presence and activity of the California least tern and the California brown pelican.
6. Native California mussels (Mytilus californianus) shall be collected during the summer from the discharge conduit, at Stations RW10 and RW12, for bioaccumulation monitoring. The mussels shall be collected and analyzed as described in Appendix A of the "California State Mussel Watch Marine Water Quality Monitoring Program 1985-86" (Water Quality Monitoring Report No. 87-2WQ). Mussel tissue shall be analyzed for copper, chromium, nickel, and zinc at a minimum.

Should native mussels not be available to collect, an alternative proposal to evaluate bioaccumulation effects from the discharge shall be proposed by the Discharger. Approval for this substitution and the workplan shall be made by the Executive Officer.

7. Summary of Receiving Water Monitoring

<u>Parameter</u>	<u>Units</u>	<u>Stations</u>	<u>Type of Sample</u>	<u>Minimum Frequency</u>
Temperature	°C	RW1-RW12	vertical profile	semi-annually (flood, ebb)
Dissolved oxygen	mg/L	RW1-RW12	vertical profile	semi-annually (flood, ebb)
pH	pH units	RW1-RW16	vertical profile	semi-annually (flood, ebb)
Fish and macro invertebrates	--	T1- T6	trawl	semi-annually
Benthic infauna	--	B1-B12	grab	annually
Sediments	--	B1-B12	grab	annually
Mussels	--	RW10 & RW12	grab	annually

V. Notification

The Discharger shall notify the Executive Officer in writing prior to discharge of any chemical, which may be toxic to aquatic life. Such notification shall include:

1. Name and general composition of the chemical,
2. Frequency of use,
3. Quantities to be used,
4. Proposed discharge concentrations and,
5. EPA registration number, if applicable.

No discharge of such chemical shall be made prior to receiving the Executive Officer's approval.

VI. Storm Water Monitoring and Reporting

The Discharger shall implement the attached Storm Water Monitoring and Reporting Program (Section B of the Attachment A) which shall be coordinated with the Monitoring and Reporting Program.

Ordered by: 
Dennis A. Dickerson
Executive Officer

Date: June 29, 2000
/KL