

State of California  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION

ORDER NO. 94-130

NPDES NO. CA0001171

WASTE DISCHARGE REQUIREMENTS  
for  
SOUTHERN CALIFORNIA EDISON COMPANY  
(Long Beach Generating Station)

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

1. Southern California Edison Company (Discharger) discharges wastes from the Long Beach Generating Station under waste discharge requirements contained in Order No. 90-030, adopted by this Board on February 26, 1990. This Order serves as the National Pollutant Discharge Elimination System (NPDES) permit (CA0001171).
2. The Discharger has filed a Report of Waste Discharge and has applied for renewal of its waste discharge requirements and NPDES permit.
3. The Discharger operates the Long Beach Generating Station, a 560 megawatt plant, at 2665 West Seaside Boulevard, Long Beach, California, and discharges up to 265 million gallons per day (mgd) of once-through cooling water from two steam generating units and low volume wastes into Back Channel, Long Beach Harbor, a water of the United States, through a channel bank outfall structure at Berth 114 (Discharge Serial No. 001) (Latitude 33°45'53", Longitude: 118°13'17").

The cooling water intake structure is located northeast of the plant at the west bank of Back Channel and draws water from an opening which is between 12 and 42 feet below the surface of the water.

Figure 1 shows the location map of the facility.

4. The Discharger controls marine fouling of the cooling water conduits (intake and discharge) by temporarily recirculating and reversing the flow of the once-through cooling water and by increasing temperature of the circulating water (i.e., the discharge point becomes the intake point, and the intake point becomes the discharge point). This procedure (referred to as "heat treatment") is typically conducted every five (5) weeks and lasts for about two (2) hours per conduit.

Revised December 5, 1994

5. Calcareous shell debris accumulate in the intake structure as the result of heat treatments. Approximately once a year, these shell debris may be physically removed and disposed of into the Back Channel, adjacent to and below the intake structure.
6. To control biological growths (defouling), the condenser tubes are 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 stream.
7. Metal cleaning, if needed, will be performed by a commercial contractor and the metal cleaning wastes shall be disposed of at a legal disposal site.
8. The wastes characteristics are as follows:

<u>Temperature (°F)</u>	<u>Winter</u> (Oct. to Apr.)	<u>Summer</u> (May to Sept.)	<u>Heat treatment</u>
Average	65	71	
Maximum	83	101	112
Maximum difference between discharge and receiving waters			43

<u>Nature of wastes<sup>1/</sup></u>	<u>Maximum Flow, mgd</u>
Once-through cooling water	261
Low volume wastes <sup>2/</sup>	<u>4</u>
Total maximum flow:	265

Low volume wastes flow into a settling basin and are then discharged to the Long Beach Harbor. Residues in the basin are periodically hauled away to a legal disposal site. Ground water, miscellaneous plant drains, oil recovery system wastes, and tank farm drains are routed through a floatation type oil/water separator before being discharged into the settling basin.

Figure 2 shows the schematic diagram of the wastewater flow.

<sup>1/</sup> Some flows are intermittent.

<sup>2/</sup> Consisting of boiler blowdown (0.3 mgd), softener regeneration wastes (0.05 mgd), groundwater well point system (1.44 mgd), yard drains (1.2 mgd), tank farm drains (0.504 mgd), miscellaneous inplant drains (0.07 mgd), and oil recovery system wastes (0.156 mgd). The oil recovery system processes oily wastes skimmed from the retention basins at the station and other SCE's generation stations. SCE also utilized this oil recovery system to process oily wastes hauled in from clarifiers at the SCE's various (about 45) garage vehicle washracks.

9. Section 316(b) of the Federal Clean Water Act (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 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 May 16, 1974, the State Water Resources Control Board (State Board) adopted a Water Quality Control Policy for the Enclosed Bays and Estuaries of California. Long Beach Inner Harbor is defined as an enclosed bay in that policy. The policy requires that the discharge of industrial process wastes to enclosed bays be phased out at the earliest practicable date.

The discharge of wastewaters from the Long Beach Generating Station does not constitute an industrial process waste discharge for the purposes of that policy.

12. On March 22, 1990, the State Board adopted a revised Water Quality Control Plan for Ocean Waters of California (Ocean Plan) on March 22, 1990. The Plan contains water quality objectives for the coastal waters of California. This Order includes effluent and receiving water limitations, prohibitions, and provisions which implement the objectives of the Plan. For the purposes of compliance with ocean discharge standards, the discharges from Long Beach Generating Station have been classified as ocean discharges in operation prior to 1970.
13. On May 18, 1972, (amended on September 18, 1975), the State Board adopted a Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California (Thermal Plan). This Plan contains temperature objectives for the Long Beach Harbor.

14. On June 3, 1991, the Regional Board adopted a revised Water Quality Control Plan for the Los Angeles River Basin (Basin Plan). The Water Quality Control Plan incorporates the Ocean Plan, the Thermal Plan, antidegradation policy, and significant State Board policies that are applicable to the Los Angeles River Basin. The Plan contains water quality objectives for the Long Beach Harbor.
15. The beneficial uses of the receiving water (Long Beach Harbor) are: industrial service supply, non-water-contact recreation, ocean commercial and sport fishing, preservation of rare and endangered species, navigation, marine habitat, and saline water habitat.
16. 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.
17. 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.
18. In compliance with the Thermal Plan and in accordance with Regional Board specifications, the Discharger conducted a thermal effects study. The study, completed in 1984, demonstrated that wastes discharges from the power plant are in compliance with the Thermal Plan and beneficial uses of the receiving waters are not degraded, as required by Section 316(a) of the Clean Water Act.
19. 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 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 to the intake structure is required. The design, construction, and operation of the intake structure represents Best Available Technology as required by Section 316(b) of the Clean Water Act.

20. At times of peak demand during defouling treatment, residual chlorine levels in the once-through cooling water have exceeded effluent limitations based on 40 CFR Part 423 guidelines (0.20 mg/l) and the Ocean Plan objectives (0.068 mg/l). However, chlorination bioassay studies performed by the Discharger showed no significant adverse impact on the receiving waters as a result of the chlorine levels in the discharge.

In September 1984, the Discharger submitted a request for variance from the effluent residual chlorine limitation based on the Ocean Plan objectives in accordance with Chapter VI, Provision F, of the Plan. 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. To date, the USEPA has not yet rendered its decision on the request.

21. Effluent limitations for Discharge Serial No. 001 based on the Ocean Plan numerical objectives were calculated using a minimum dilution ratio of 3.2 to 1 (receiving water/effluent). This ratio was based on calculations made by the Discharger and approved by the State Board (transmitted to the Regional Board in a State Board memorandum dated February 4, 1985).
22. For toxic constituents regulated in the Ocean Plan (Table B) which the Discharger does not add into or produced in the treatment process and/or waste streams, no numerical limits are prescribed. However, a narrative limit to comply with all ocean Plan objectives is provided.
23. Acute toxicity monitoring conducted over the past five years demonstrated consistent compliance with the Ocean Plan objectives. However, since the Ocean Plan objectives are not applicable to steam electric generating plants, no numerical limits are prescribed for acute toxicity.
24. The requirements contained in this Order, as they are met, will be in conformance or in compliance with the goals of the aforementioned water quality control plans and statutes.
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.

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

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

This Order shall serve as a National Pollutant Discharge Elimination System 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 the Environmental Protection Agency, EPA, has no objections.

**IT IS HEREBY ORDERED** that Southern California Edison Company, 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 herein above 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 waste discharged shall not exceed 110°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 110°F shall not last more than 30 minutes.
3. The pH of wastes discharged shall at all times be within the range of 6.0 to 9.0 pH units.
4. The wastes discharged from Discharge Serial No. 001 with constituents in excess of the following concentration limits are prohibited:

<u>Constituent</u>	<u>Units</u>	<u>Discharge Limitations<sup>1/,2/</sup></u>	
		<u>30-day Average</u>	<u>Daily Maximum</u>
Arsenic	µg/l	24	125
Cadmium	µg/l	4.2	17
Chromium(VI) <sup>3/</sup>	µg/l	8.4	34
Copper	µg/l	6.2	44
Lead	µg/l	8.4	34
Mercury	µg/l	0.17	0.67
Nickel	µg/l	21	84
Selenium	µg/l	63	252
Silver	µg/l	2.4	11
Zinc	µg/l	58	310
Chronic toxicity <sup>4/</sup>	TUc	---	4.2
Radioactivity	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.		

1/ Based on the Ocean Plan Criteria using a minimum initial dilution of 3.2 to 1 (Receiving Water : Effluent).

2/ The discharge rate limitations (in lbs/day) shall be determined using the tabulated concentration limits and actual flowrate.

3/ The Discharger may, at his option, meet this limitation as a total chromium limitation.

4/ Expressed as Toxic Units Chronic (TUc): TUc = 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 in Appendix II of the Ocean Plan (p. 22-23).

5. Chlorine limitations

- a. The discharge of an effluent from Discharge Serial No. 001 with constituents in excess of the following limits is prohibited:

<u>Constituent</u>	<u>Unit</u>	<u>Discharge Limitations</u> <sup>5/</sup>	
		<u>Daily Average</u>	<u>Daily Maximum</u>
Total residual chlorine <sup>6/,7/</sup>	mg/l	-----	0.355
Free available chlorine <sup>7/</sup>	mg/l	0.2	0.355

- b. If the Administrator of the EPA does not concur with the 301(g) variance as discussed in Finding No. 20, the effluent limitations in A-4(a) are not applicable and the following effluent limitation is applicable:

<u>Constituent</u>	<u>Unit</u>	<u>Discharge Limitation</u> <sup>5/</sup>
		<u>Daily Maximum</u>
Total residual chlorine <sup>7/</sup>	mg/l	0.2

<sup>5/</sup> The mass discharge rate limitations (in lbs/day) shall be determined using the tabulated concentration limits and flow rate of once through cooling water.

<sup>6/</sup> Based on the approved Ocean Plan Exception (using a minimum initial dilution ratio of 3.2/1). Total residual chlorine may not be discharged from any single generating unit for more than 15 minutes per condenser half per shift. For chlorine discharges of up to 15 minutes, the daily maximum limit is 0.355 mg/l. For chlorine discharges exceeding 15 minutes, the applicable total residual chlorine limitations shall be that calculated using procedures outlined in Table B "Toxic Material Limitations" of the Ocean Plan.

<sup>7/</sup> Chlorine may not be discharged from any single generating unit for more than two hours per day at any one time. If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.



6. Effluent limitations for Inplant Waste Streams:

- a. The discharge of an effluent from low volume waste retention basin with constituents in excess of the following limits is prohibited:

<u>Constituent</u>	<u>Units</u>	<u>Discharge Limitations<sup>8/</sup></u>	
		<u>30-day Average</u>	<u>Daily Maximum</u>
Suspended solids	mg/l	30	100
Oil and grease	mg/l	15	20

- b. The discharge of an effluent from the oil recovery system with constituents in excess of the following limits is prohibited:

<u>Constituent</u>	<u>Units</u>	<u>Discharge Limitations<sup>8/</sup></u>	
		<u>30-day Average</u>	<u>Daily Maximum</u>
Settleable solids	ml/l	0.1	0.3
Suspended solids	mg/l	20	60
BOD <sub>5</sub> 20°C	mg/l	20	60
Oil and grease	mg/l	10	15
Surfactants (as MBAS)	mg/l	---	0.5
Phenols	mg/l	---	0.5
Arsenic	µg/l	---	125
Cadmium	µg/l	---	17
Chromium (+6)	µg/l	---	34
Lead	µg/l	---	34

<sup>8/</sup> The mass discharge rate limitation (in lbs/day) shall be determined using the tabulated concentration limits and flowrate of the specified waste stream.

B. RECEIVING WATER LIMITATIONS:

1. Floating particulates and oil and grease shall not be visible as a result of the wastes discharged.
2. The wastes discharged shall not alter the color of the receiving waters; create a visual contrast with the natural appearance of the water; nor cause aesthetically undesirable discoloration of the receiving waters.
3. The wastes discharged shall not significantly reduce the transmittance of natural light at any point outside the initial dilution zone.
4. The wastes discharged shall not change the rate of deposition and the characteristics of inert solids in ocean sediments such that benthic communities are degraded.
5. The wastes discharged shall not depress the dissolved oxygen concentration outside the zone of initial dilution at any time 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 wastes discharged shall not significantly increase the dissolved sulfide concentration of waters in and near sediments above that present under natural conditions.
8. The wastes discharged shall not increase the concentration in marine sediments of substances listed in items A(3-5) above to levels which would degrade indigenous biota.
9. The wastes discharged shall not increase the concentration of organic materials in marine sediments above that which would degrade marine life.
10. The wastes discharged shall not cause objectionable aquatic growths or degrade indigenous biota.
11. The wastes discharged shall not degrade marine communities, including vertebrate, invertebrate, and

plant species.

12. The wastes discharged shall not alter the natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption.
13. The wastes discharged shall not cause the concentration of organic materials in fish, shellfish, or other marine resources used for human consumption to bioaccumulate to levels that are harmful to human health.
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 the wastes discharged shall be visible at any time in the water or on beaches, shores, rocks, or structures.
17. The wastes discharged shall not change the salinity of the receiving waters 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 the 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. There shall be no discharge of metal cleaning wastes.
- I. 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 the Executive Officer's approval.

- J. The Regional Board and the 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 this discharge; written confirmation shall follow as soon as possible but not later than five working days.
- K. This order and permit 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.

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.

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

### III. EXPIRATION DATE

This Order expires on November 10, 1999.

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 such date as application for issuance of new waste discharge requirements.

SCE, Long Beach Generating Station  
Order No. 94-130

CA0001171

IV. RESCISSION

Order No. 90-030 adopted by this Board on February 26, 1990,  
is hereby rescinded.

I, Robert P. Ghirelli, 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 December 5, 1994.

  
ROBERT P. GHIRELLI, D.Env.  
Executive Officer

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