

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

ORDER NO. 95-028

NPDES NO. CA0000353

WASTE DISCHARGE REQUIREMENTS
for
CITY OF LOS ANGELES, DEPARTMENT OF WATER AND POWER
(Haynes Generating Station)

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

1. City of Los Angeles, Department of Water and Power (LA,DWP), discharges wastes under waste discharge requirements contained in Order No. 90-027 (NPDES Permit No. CA0000353), adopted by this Board on February 26, 1990.
2. LA,DWP, has filed a Report of Waste Discharge and has applied for renewal of its waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit.
3. LA,DWP, operates the Haynes Generating Station, a 1,580 megawatts plant, at 6801 Westminster Avenue, Long Beach, California (Latitude: 31°45'47"; Longitude: 118°05'44") and discharges once-through cooling water from six steam generating units, reverse osmosis membrane reject of the desalination system, metal cleaning wastes, and low volume wastes into the San Gabriel River, a water of the United States, at three discharge points (at the west property edge of the power plant) along the east bank of the river, about 984 feet north of Westminster Avenue. Low volume wastes from the facility flow into the settling basins and are then discharged to the river through the same three discharge points. Residues in the basins are periodically hauled away to a legal disposal site.
Figures 1 and 2 show the location map and the Schematic of the Wastewater Flow, respectively.
4. The cooling water intake structure (Latitude: 33°45'05"; Longitude: 118°06'15") is located at the east corner of the Long Beach Marina and draws ocean water at a depth of 2 to 9.5 feet MLLW from the Marina through seven closed conduits under the San Gabriel River to an open earth intake channel.
5. LA,DWP, controls marine fouling of the cooling water conduits by temporarily recirculating the flow through the once-through

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cooling water intake system and by increasing temperature of the circulating water. This procedure occurs infrequently but could be required every 5 weeks. This procedure lasting approximately 2 hours for the intake conduits, is referred to as "heat treatment". During heat treatment the once-through cooling water intake points alternately become discharge points.

Intermittently, each of the condenser halves is treated for control of biological growths by injection of chlorine into the cooling water stream.

6. Calcareous shell debris accumulate in the intake structure as a result of heat treatments. Approximately once a year, these shell debris may be physically removed from the intake structure and disposed of into the Ocean.
7. The Report of Waste Discharge describes the three existing discharges as follows:
 - A. All three waste streams (designated as Discharge Serial Nos. 001, 002, and 003) consist of: once through cooling water (steam condensers), chemical metal cleaning wastes, and low volume wastes (non-chemical metal cleaning wastes, water softener regeneration wastes, demineralizer regeneration wastes, boiler and evaporator blowdowns, condensate polisher regeneration wastes, secondary treated sanitary wastes, laboratory drains and floor drainage including storm runoff).
 - B. Wastewater characteristics of Discharge Serial Nos. 001, 002, and 003 (as listed in the 1993 Monitoring Report and Report of Waste Discharge):

<u>Constituents</u>	Maximum value observed, $\mu\text{g}/\text{l}$		
	<u>001</u>	<u>002</u>	<u>003</u>
Arsenic	<2	<2	<2
Cadmium	<1	<1	<1
Copper	<4	<4	<4
Chromium	<5	<5	<5
Zinc	38	32	30
Mercury	<0.2	<0.2	<0.2
Nickel	<40	<40	<40
Phenols	<20	<20	<20

<u>Constituents</u>	Maximum value observed, $\mu\text{g}/\text{l}$		
	<u>001</u>	<u>002</u>	<u>003</u>
Residual chlorine	300	280	290
pH	7.8-8.3	7.8-8.3	7.7-8.3
Maximum temperature, $^{\circ}\text{C}$ ($^{\circ}\text{F}$)			
winter (October to April)	33.3 (92.0)	32.2 (90.0)	35.6 (96.0)
summer (May to October)	35.0 (95.0)	34.4 (94.0)	33.3 (92.0)
Maximum flow, mgd	276	276	459
Discharge location,			
latitude	33 $^{\circ}$ 45'42"	33 $^{\circ}$ 45'47"	33 $^{\circ}$ 45'52"
longitude	118 $^{\circ}$ 05'47"	118 $^{\circ}$ 05'47"	118 $^{\circ}$ 05'47"

<u>Miscellaneous wastewaters*</u>	<u>Maximum Daily Flow</u>	
Boiler blowdown	87,000	gpd
Storm water runoff	75,000	gpd
Demineralizer Regeneration	39,000	gpd
Floor drains	36,000	gpd
Filter polish regeneration	21,000	gpd
Laboratory drains	15,000	gpd
Boiler washwater	15,000	gpd
Boiler acid cleaning rinses	189,000	gpd
Domestic and sanitary wastes	21,000	gpd
Reverse osmosis membrane reject	67,000	gpd
Total	565,000	gpd

mgd = million gallons per day, gpd = gallons per day.
 *Most of these wastewater discharges are on intermittent basis.

8. 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.
9. 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 no modification to the intake structure was 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.

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 March 22, 1990, the State Water Resources Control Board (State Board) adopted a revised Water Quality Control Plan for Ocean Waters of California (Ocean Plan). The revised 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.
12. 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 Waters and Enclosed Bays and Estuaries of California (Thermal Plan). The Thermal Plan contains temperature objectives for the Pacific Ocean.
13. On June 13, 1994, the Regional Board adopted an updated Water Quality Control Plan for the Los Angeles Region (Basin Plan). The Water Quality Control Plan incorporates by reference State Board's water quality control plans for ocean waters, control of temperature, significant State Board policies that are applicable to the Los Angeles Region, and the antidegradation policy.
14. The beneficial uses of the receiving water (San Gabriel River Tidal Prism) are: industrial service supply, water-contact and non-water-contact recreation, ocean commercial and sport fishing, preservation of rare and endangered species, navigation, marine habitat, and saline water habitat.
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

22. Effluent limitations based on Ocean Plan objectives were calculated using a minimum dilution ratio of 4.5 to 1 for Discharge Serial No. 001, Serial No. 002, and Serial No. 003 except for residual chlorine which is 7.8 to 1, i.e., parts sea water to one part effluent. These ratios were 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 produced in the treatment process and/or waste streams, no numerical limits are prescribed. No narrative limits are also prescribed for toxic constituents which are added but usage has been determined that there is very low probability of causing of contributing to excursions in the water quality standards. However, a narrative limit to comply with all ocean Plan objectives is provided.
24. 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.
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 City of Los Angeles, Department of Water and Power, 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 discharge shall be limited to those described above only, as proposed.
2. The temperature of waste discharged shall not exceed 100°F during normal operation of the facility. During heat treatment, the temperature of waste discharged shall not exceed 115°F except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed 120°F. Temperature fluctuations during gate adjustment above 115°F shall not last more than 30 minutes.
3. The discharge of an effluent from Discharge Serial No. 001, 002, and 003 with constituents in excess of the following limits is prohibited:

<u>Constituents</u>	<u>Units</u>	<u>Discharge Limitations^[1]</u>	
		<u>30-Day Average</u>	<u>Daily Maximum</u>
Arsenic	ug/l	30.5	122
	lbs/day	70.2 (116.7)	280.2 (466.8)
Cadmium	ug/l	5.5	22
	lbs/day	12.6 (21.0)	50.4 (84.0)
Chromium ^[2]	ug/l	11	44
	lbs/day	25.3 (42.1)	101.2 (168.4)
Copper	ug/l	7.5	30
	lbs/day	17.3 (28.7)	69.2 (114.8)
Lead	ug/l	11	44
	lbs/day	25.3 (42.1)	101.2 (168.4)
Mercury	ug/l	0.218	0.872
	lbs/day	0.50 (0.83)	2.00 (3.32)
Nickel	ug/l	27.5	110
	lbs/day	63.3 (105.2)	253.2 (420.8)
Silver	ug/l	3.13	12.52
	lbs/day	7.2 (12.0)	28.8 (48.0)

<u>Constituents</u>	<u>Units</u>	<u>Discharge Limitations^[1]</u>	
		<u>30-Day Average</u>	<u>Daily Maximum</u>
Zinc	ug/l	74	296
	lbs/day	170.3 (283.1)	681.2 (1,132.4)
Chronic toxicity ^[3]	Tu _c	---	5.5
Radioactivity	Not to exceed limits specified in Title 17, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269 of the California Code of Regulations.		

[1] Based on California Ocean Plan Criteria using a minimum initial dilution of 4.5 to 1 (Receiving Water : Effluent). The discharge rate limitations (in lbs/day) for each discharge point (Discharge Serial No. 001, 002, and 003) shall be determined using the tabulated concentration limits and actual flow rate of each discharge point. The maximum discharge rate in lbs/day for 001 or 002 Outfall based on 276 MGD is given first and followed by that of 003 Outfall based on 459 MGD in brackets.

[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 made for hexavalent chromium in a replicate sample and the result show 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 IN APPENDIX II OF THE CALIFORNIA OCEAN PLAN ADOPTED AND EFFECTIVE ON MARCH 22, 1990, PAGES 22-23.

NOEC SHALL BE DETERMINED BASED ON TOXICITY TESTS HAVING CHRONIC ENDPOINTS.

4. The discharge of an effluent from Discharge Serial Nos. 001, 002, and 003, in excess of the following limits is prohibited:

<u>Constituents</u>	<u>Units</u>	<u>Discharge Limitation^[4]</u>	
		<u>Daily Average</u>	<u>Instantaneous Maximum</u>
Total residual chlorine ^{[5], [5a]}	mg/l	---	0.413
	lbs/day		0.951 (1.580)
Free available chlorine ^[6]	mg/l	0.2	0.413
	lbs/day	0.460 (0.765)	0.951 (1.580)

5. If the Administrator of the EPA does not concur with the 301(g) variance as discussed in Finding No.19, the effluent limitations in No. A.4 are not applicable and the following effluent limitation is applicable for all three discharge points:

<u>Constituent</u>	<u>Unit</u>	<u>Discharge Limitation^[4]</u> <u>Instantaneous Maximum</u>
Total residual chlorine ^{[5a], [6]}	mg/l	0.2
	lbs/day	0.460 (0.765)

[4] The discharge rate limitations (in lbs/day) shall be determined using the tabulated concentration limits and flow rate of once through cooling water. The maximum discharge rate in lbs/day for 001 or 002 Outfall based on 276 MGD is given first and followed by that of 003 Outfall based on 459 MGD in brackets.

[5] Based on the approved Ocean Plan Exception (using a minimum initial dilution of 7.8). Total residual chlorine may not be discharged from any single generating unit for more than 20 minutes per condenser half per shift. For chlorine discharges of up to 20 minutes, the instantaneous maximum limit is 0.413 mg/l. For chlorine discharges exceeding 20 minutes, the applicable total residual chlorine limitations shall be that calculated using procedures outlined in Table B "Toxic Material Limitations" of the Ocean Plan.

[5a] IF OTHER OXIDANTS ARE USED, THIS SHALL BE THE TOTAL OF ALL OXIDANTS REPORTED AS RESIDUAL CHLORINE.

[6] Chlorine may not be discharged from any single generating unit for more than two hours per day at any one time.

6. Effluent limitations for Inplant Waste Streams:

a. The discharge of metal cleaning wastes^[8] with constituents in excess of the following limits is prohibited:

<u>Constituents</u>	<u>Units</u>	<u>Discharge Limitation^[7]</u>	
		<u>30-day Average</u>	<u>Daily Maximum</u>
Suspended solids	mg/l	30	100
Oil and grease	mg/l	15	20
Copper, total ^[9]	mg/l	1.0	1.0
Iron, total ^[9]	mg/l	1.0	1.0

b. The discharge of an effluent from low volume wastes in excess of the following limits is prohibited:

<u>Constituents</u>	<u>Units</u>	<u>Discharge Limitation^[7]</u>	
		<u>30-day Average</u>	<u>Daily Maximum</u>
Suspended solids	mg/l	30	100
Oil and grease	mg/l	15	20

c. The discharge of an effluent from sanitary wastes in excess of the following limits is prohibited:

<u>Constituents</u>	<u>Units</u>	<u>Discharge Limitation^[7]</u>	
		<u>30-day 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

- [7] The discharge rate limitation (in lbs/day) shall be determined using the tabulated concentration limits and flowrate of the specified wastes. In the event that waste streams from various sources (6.a, 6.b, and 6.c above) are combined for treatment or discharge, the quantity of each pollutant or pollutant property controlled attributable to each controlled waste source shall not exceed the specified limitation for that waste source.
- [8] Chemical metal cleaning wastes shall mean pretreated cleaning compounds, rinse waters, or any other airborne residues derived from cleaning any metal process equipment (with or without chemical cleaning compounds) including, but not limited to, boiler tube, boiler fireside, and air preheaters.
- [9] For non-chemical cleaning wastes, these are applicable to dissolved metal fractions only.

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 aesthetically undesirable discoloration of the ocean surface.
3. The transmittance of natural light shall not be significantly reduced at any point outside the initial dilution zone.
4. The rate of deposition and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.
5. Dissolved oxygen concentrations outside the zone of initial dilution shall not at any time be depressed more than 10 percent from which occurs naturally as a result of wastes discharged, 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 concentration in marine sediments of substances listed in item A.3 above shall not be increased to levels which would degrade indigenous biota as a result of wastes discharged.
9. The concentration of organic materials in marine sediments shall not be increased above that which would degrade marine life as a result of wastes discharged.
10. 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. 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 waste discharge 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 discharge 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 in accordance with Attachment A (Storm Water Pollution Prevention Plan) within 120 days of the effective date of this Order.
- 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 general permits issued by the Regional Water 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 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 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 this discharge; written confirmation shall follow as soon as possible but not later than five working days.
- 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.

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 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.
- L. 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

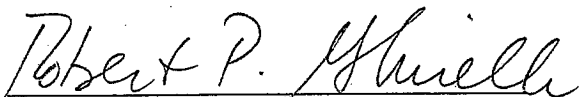
This Order expires on January 10, 2000.

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.

IV. RESCISSION

Order No. 90-027, 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 February 27, 1995.



ROBERT P. GHIRELLI, D.Env.
Executive Officer

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