

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

ORDER NO. 01-057

NPDES NO. CA0001180

WASTE DISCHARGE REQUIREMENTS
FOR
RELIANT ENERGY INCORPORATED
(Mandalay Generating Station)

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

1. Reliant Energy, Inc (hereinafter Reliant or Discharger) discharges waste from the Mandalay Generating Station (hereinafter Mandalay) under waste discharge requirements contained in Order No. 94-131 (NPDES No. CA0001180) adopted by this Regional Board on December 5, 1994.
2. Reliant Energy has filed a Report of Waste Discharge (ROWD) and has applied for renewal of its waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit.
3. A permit for the operation of Mandalay (Order No. 94-131) was originally issued to Southern California Edison. On April 2, 1998, the Regional Board was notified that Mandalay had been sold to Ocean Vista Power Generation L.L.C., a subsidiary of Houston Industries Incorporated, changed its name to Reliant Energy Mandalay L.L.C., a subsidiary of Reliant Energy, Inc. and concurrently, the name of the power station became Mandalay.

Description of the Facility Operations

4. The Discharger operates Mandalay, a plant with a design capacity of 560 megawatts, at 393 North Harbor Boulevard, Oxnard, California. Mandalay discharges up to 255.3 million gallons per day (mgd) of wastes consisting of once-through cooling water from two steam electric generating units (four condenser halves), metal cleaning wastes, and low volume wastes (includes softener regeneration wastes, fireside and air preheater washes, floor drains, boiler blowdown and evaporator blowdown wastes) into the Pacific Ocean at Mandalay Beach in Oxnard, a water of the United States. The wastes are discharged through a concrete and rock-revetted structure (Discharge Serial No. 001) located at a point directly across the beach, west of the plant (Latitude: 34° 12' 23"; Longitude: 119° 15' 09").

The cooling water intake structure is located east of the plant at the shoreline (Discharge Serial No. 002 during heat treatment as described below) and draws water from the

March 8, 2001
Revised: March 23, 2001
Revised: April 26, 2001

surface to a depth of 18 feet via a canal originating in the Channel Islands Harbor. Figure 1 shows the location map of the facility.

5. The operations contributing to flow at the Mandalay facility includes:

<u>Operation</u>	<u>Flow (mgd)</u>	<u>Treatment Description</u>
Once-through cooling water	255	Ocean Discharge
Boiler Blowdown	0.012	Ocean Discharge
Evaporator Blowdown	0.04	Ocean Discharge
South Yard Drains	Negligible	Retention & Ocean Discharge
North Yard Drains	Negligible	Retention & Ocean Discharge
Softener Regeneration	0.013	Retention & Ocean Discharge
Fireside and Air Preheater Wash	0.035	Retention & Ocean Discharge
Floor Drains	0.072	Oil Removal, Retention, & Ocean Discharge
Condensate Overboard	Negligible	Oil Removal, Retention, & Ocean Discharge
Chemical Metal Cleaning	0.08	Lime Precipitation, Retention, Sludge Disposal, & Ocean Discharge
West Yard Drains	Negligible	Retention & Ocean Discharge

Figure 2 shows the schematic diagram of the wastewater flow.

6. The chemical metal cleaning wastes are placed in portable tanks, then processed through a contractor-owned mobile lime treatment unit that discharges to the retention basin. The treated chemical metal cleaning wastes, non-chemical metal cleaning wastes, and low volume wastes are then stored in two settling basins before discharge to the Pacific Ocean through the Discharge Serial No. 001. Sludge and residues in the basins and from treatment are periodically hauled away to legal disposal sites.
7. The Discharger sprays algicide to the banks of the Mandalay intake canal during the spring and summer months to control undesirable algal growth which clogs the intake screens and impedes the pumping of cooling water through the generating station. No adverse water quality impacts have been observed due to algicide applications.
8. The Discharger controls marine fouling of the cooling water conduit (intake and four waterboxes) by temporarily recirculating (thus increasing the temperature) and diverting the flow of the once-through cooling water through the recirculation tunnel. This procedure (referred to as "heat treatment") is typically conducted every five (5) weeks and lasts for about two (2) hours per conduit. During heat treatment, the temperature of waste discharged does not exceed 125°F except during adjustment of the recirculation gate at which time the temperature of the wastes discharged does not exceed 135°F. Temperature fluctuations during gate adjustment above 125°F will last no longer than 30 minutes.
9. Any debris that accumulates in the intake structure is collected in a container, removed

and disposed of by the City of Oxnard.

10. The condenser tubes are arranged in banks of two per generating station. Biological growth on the condenser tubes is controlled by intermittently injecting chlorine in the form of sodium hypochlorite into the cooling water system. There are two chlorination cycles per day during November through February, and three chlorination cycles per day during March through October. Each cycle consists of 10 minutes per condenser half, plus 10 minutes for each of three bearing cooling water heat exchangers. Condenser halves and heat exchangers are chlorinated sequentially during each cycle. The maximum total daily chlorination time is 210 minutes or 3.5 hours per day. During November through February, the total daily chlorination time is 140 minutes/day.

Storm Water Management

11. Mandalay currently does not separate process wastewater from storm water runoff. The stormwater is collected in a holding basin and discharged to the ocean via Discharge Serial No. 001. During major storm events the storm water runoff is discharged directly to the ocean.
12. 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, and renewed by Order No. 97-03-DWQ, NPDES Permit No. CAS000001 adopted on April 17, 1997). Storm water discharges from power plants are subject to requirements under this general permit.

Mandalay has implemented a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the general NPDES permit for stormwater discharges.

Discharge Quality

13. The effluent characteristics as reported in the permit application follows:

<u>Constituent</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Daily Maximum</u>
Flow	mgd	----	255.3
Temperature			
Winter (Oct. - April)	°F	102	123*
Summer (May - Sept.)	°F	110	129*
<u>Constituent</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Daily Maximum</u>
pH	pH units	----	8.8
BOD ₅ 20°C	mg/L	----	1.0
COD	mg/L	----	34

Total suspended solids	mg/L	----	13.5
Bromide	mg/L	----	48
Total residual chlorine	mg/L	----	0.23
Fecal coliform	MPN/100ml	----	>23
Fluoride	mg/L	----	0.4
Nitrate-Nitrite (as Nitrogen)	mg/L	----	0.9
Nitrogen (Total organic)	mg/L	----	1.5
Oil and grease	mg/L	----	9.1
Phosphorous	mg/L	----	0.3
Aluminum	mg/L	----	1.43
Barium	mg/L	----	0.021
Boron	mg/L	----	3.34
Iron	mg/L	----	1.34
Magnesium	mg/L	----	826
Molybdenum	mg/L	----	0.008
Manganese	mg/L	----	0.071
Titanium	mg/L	----	0.069
Copper	mg/L	----	0.010
Sulfite (as SO ₃)	mg/L	----	2.0
Sulfate (as SO ₄)	mg/L	----	2150
Radium, Total	pCi/L	----	1.32
Beta, Total	pCi/L	----	156.4
<u>Alpha, Total</u>	pCi/L	----	3.39

* During heat treatment.

All other targeted analytes were not detected.

14. Over the five-year period between December 1994 and December 2000, the Discharger had six exceedances of the 30-day average for copper. Exceedances were recorded in June and December of 1996, December of 1997, June and December of 1998 and December of 2000. There was also one exceedance of the 30-day average for lead reported in June 1998.

Noncompliance issues have been referred to the Enforcement Unit.

Applicable Plans, Policies, and Regulations

15. 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 available technology for minimizing adverse environmental impacts.

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. The study adequately addressed the important ecological and engineering factors specified in the guidelines, demonstrated that ecological impacts of the intake system are environmentally acceptable, and determined that no modification to the intake structure is required. The design, construction, and operation of the intake

structure represent Best Available Technology as is required by Section 316(b) of the Clean Water Act.

16. On November 19, 1982, the USEPA promulgated *Effluent Guidelines and Standards for the Steam Electric Power Generating Point Source Category* (40 CFR Part 423). This regulation prescribes effluent limitations for once-through cooling water and various in-plant waste streams.

40 CFR 423.12(a) includes provisions to adjust the limitations in 40 CFR Part 423 for in-plant waste streams for certain plants where the factors used in developing the limitations are significantly different from those associated with the equipment or facilities involved.

17. On July 23, 1997, the State Water Resource Control Board (State Board) adopted a 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 that implement the objectives of the Ocean Plan.
18. On September 18, 1975, the State Board adopted a revised version of 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 Pacific Ocean.

In compliance with the Thermal Plan and in accordance with Regional Board specification, the Discharger conducted a thermal effects study. The study demonstrated that waste discharges from the power plant are in compliance with the Thermal Plan and beneficial uses of the receiving waters are protected, as required by Section 316 (a) of the Clean Water Act.

19. On June 13, 1994, the Regional Board adopted a revised *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) as amended on January 27, 1997 by Regional Board Resolution No. 97-02. The Basin Plan (i) designates beneficial uses for surface and groundwaters, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state antidegradation policy (*Statement of Policy with Respect to Maintaining High Quality Waters in California*, State Water Resources Control Board (State Board) Resolution No. 68-16, October 28, 1968), and (iii) describes implementation programs to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. The 1994 update of the Basin Plan has been prepared to be consistent with all State and Regional Board plans and policies adopted to date. This Order implements the plans, policies and provisions of the Regional Board's Basin Plan.
20. **Beneficial Uses.** The Basin Plan contains water quality objectives and beneficial uses for the Pacific Ocean.

Nearshore Zone (Bounded by the shoreline and a line 1,000 feet from the shoreline or the 30-foot depth contour, whichever is farther from shore):

Existing: industrial service supply, navigation, water contact and non-water contact recreation, commercial and sport fishing, support of marine habitat, support of wildlife habitat, preservation of biological habitats, support of rare, threatened, or endangered species, migration of aquatic organisms, support of habitats suitable for spawning, reproduction, and/or early development, and support of habitats suitable for shellfish harvesting.

Offshore Zone:

Existing: navigation, contact and non-contact recreation, commercial and sport fishing, support of marine habitat, support of wildlife habitat, support of rare, threatened, or endangered species, migration of aquatic organisms, support of habitats suitable for spawning, and support of habitats suitable for shellfish harvesting.

21. **Watershed Approach.** The Regional Board has implemented a Watershed Management Approach, in accordance with *Watershed Protection: A Project Focus* (EPA841-R-95-003, August 1995), to address water quality protection in the Los Angeles Region. Programs covered under the Watershed Management Initiative include regulatory (e.g., NPDES), monitoring and assessment, basin planning and water quality standards, watershed management, wetlands, total maximum daily loads (TMDLs), 401 certifications, groundwater (as appropriate), and nonpoint source management activities. The Watershed Management Approach integrates the Regional Board's many diverse programs, particularly, permitting, planning, and other surface-water oriented programs. It emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with the resources available. This approach facilitates a more accurate assessment of cumulative impacts of pollutants from both point and nonpoint sources.

The Los Angeles Region encompasses ten Watershed Management Areas (WMA) which are the geographically defined watershed areas where the Regional Board implements the watershed approach. The Board has enumerated significant issues in each of the WMAs. Significant watershed issues in the Ventura Coastal Watershed Management Area for the wetlands and coastal waters are:

- Historic pesticide contamination;
- Loss of quality habitat;
- Impacts from oil spills and agriculture;
- Use by endangered species; and
- Impairments: from historic pesticides and from coliform.

Pursuant to this Regional Board's Watershed Initiative Chapter January 2000, the Ventura River Watershed and Ventura Coastal areas are targeted for the 2001-2002 fiscal year.

22. **Executive Order D-22-01.** On February 8, 2001, the State and Regional Boards received the Governor's Executive Order D-22-01 concerning the California electricity

supply shortage that requires that all existing power plants increase their generation output. The Governor's Executive Order provides, in part, that "power plants in the State of California are not precluded from operating as a result of thermal limits in waste discharge requirements."

This permit is consistent with the Governor's Executive Order D-22-01 to responsibly address the energy emergency and is consistent with the objectives of environmental protection.

Applicable Water Quality Objectives

23. 40 CFR Part 122.44(d)vi(A) requires the establishment of numeric effluent limitations to attain and maintain applicable narrative water quality criteria to protect the designated beneficial uses.
24. Effluent limitations established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality-Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 304 (Information and Guidelines), and 402 (NPDES) of the Federal Clean Water Act and amendments thereto, are applicable to the discharges herein.
25. Total residual chlorine (TRC) levels in the once-through cooling water have exceeded effluent limitations based on 40 CFR Part 423 guideline (0.20 mg/L) and the 1983 Ocean Plan objectives for Discharge Serial No. 001. The current Ocean Plan objectives for TRC are more stringent. 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 Ocean Plan objectives. The Regional Board and the State Board approved the variance request (Resolution 88-80) and forwarded it to the USEPA in August 1988 for concurrence, pursuant to Section 301(g) of the Clean Water Act.

In 1987, the Discharger and the City of Los Angeles Department of Water and Power conducted a chlorine toxicity screening study at three power plants which were determined to be representative of discharge conditions. The study was completed in response to State Board's concerns prior to the issuance of State Board's Resolution 88-80. It showed that chlorine was not detected outside the zone of initial dilution during a chlorination event.

26. On May 23, 1996, USEPA approved Mandalay's request for a variance from BAT (best available technology economically achievable) for TRC pursuant to Section 301(g) of the CWA with the following conditions:
 - a. The effluent from Outfall 001 must meet a limitation of 0.365 mg/L total residual chlorine (instantaneous maximum) based on daily sampling at Outfall 001 during periods of chlorination.

- b. The effluent from Outfall 001 must meet a chronic toxicity limit of 3.6 TU_c (daily maximum). The chronic toxicity tests must be representative of actual discharge conditions (at a minimum) or of the PMEL (Proposed Modified Effluent Limitation) conditions. This means that, at a minimum, the effluent samples must be chlorinated in the laboratory to levels consistent with the maximum TRC effluent concentration measured during periods of chlorination during the previous 3 months. Alternatively, the sample may be chlorinated to the PMEL concentration (unless the maximum TRC concentration from the previous 3 months exceeds the PMEL concentration). All other procedures shall be consistent with monitoring requirements in the Ocean Plan and NPDES permit. This requirement to chlorinate in the laboratory applies only if the recorded TRC concentrations exceed the BAT limit of 0.2 mg/L during the previous 3 months.
 - c. In the event the effluent chronic toxicity limitation is exceeded, the Discharger shall increase the monitoring frequency to monthly in accordance with the NPDES permit. If the 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 recent TRE/ toxicity investigation evaluation (TIE) manuals.
 - d. The Discharger shall conduct a residual chlorine receiving water study, as set forth in the NPDES permit, in order to assess the impact of chlorine and chlorine by-products within the receiving waters during period of maximum chlorination.
 - e. This 301(g) approval can be reviewed and revised by EPA at any time if subsequent information indicates that the PMEL will not result in compliance with all 301(g) criteria. This includes subsequent chronic toxicity results, TRE findings that indicate that the discharge of TRC at concentrations greater than the BAT limit results in toxicity, and receiving water data.
27. Per the December 5, 1994, NPDES permit (Footnote No. 3, Item II.A.1., Monitoring and Reporting Program CI-2093), the Discharger conducted a "Chlorine Sampling Optimization Study" for Mandalay. The study determined the time during the chlorination cycle of peak residual chlorine concentration in the ocean discharge of the generating station. The purpose of this determination was to ensure that compliance monitoring samples for TRC were collected at the time of highest chlorine level in the stations' combined effluent.

Chlorination at Mandalay depends on the time of year. Between March and October, each condenser half is chlorinated for ten minutes each time and three times per day. The halves are chlorinated one at a time, and an interval of several minutes occurs between the end of chlorine injection to one half and the start to the next half. Once the condensers have been chlorinated, Units 1 & 2, and 3 bearing cooling water heat exchangers are chlorinated for ten minutes each. Between November and February, the condenser halves and bearing cooling water heat exchangers are chlorinated for ten minutes twice a day.

The test was performed on February 17, 1995. The results showed four distinct peaks that corresponded to the chlorination of each condenser half. The highest chlorine level

was noted at forty-four (44) minutes after the start of the chlorination cycle. The Discharger used the result of this study to modify their sampling procedures to ensure that the samples are collected at or near the time of peak chlorine levels in the effluent.

In the spring of 2000, Mandalay Generating Station started repairs to the chlorinating system. After completion of the repairs, a profile test was performed on September 14, 2000. The results showed six distinct plateaus that correspond to the chlorinating of each condenser half and the two bearing cooling systems. The highest chlorine level is noted six minutes after the start of each respective chlorination cycle. The plateau lasts for about seven minutes. The Discharger has modified the sampling procedures to ensure that samples are collected during peak chlorine levels.

28. Prior to exercising the 301(g) variance the Discharger conducted a *Special Chlorine Study for 301(g) Variances*. The study was completed instead of a study required in Monitoring and Reporting Program No. 2093 Section III. F., which required that the Discharger conduct a study to demonstrate that there is no significant impact on the receiving water as a result of the discharge of higher levels of chlorine granted by the variance.

In a letter dated October 10, 1997, to the Regional Board, the Discharger discussed the results of a chronic toxicity test. Effluent samples were spiked with the BAT level (0.2 mg/L) and the maximum chlorine levels allowed by the 301(g) variance (0.365 mg/L) in the laboratory. The results indicated that discharge of chlorine at the maximum allowed 301(g) variance level would not cause chronic toxicity of the effluent to exceed permitted effluent limits. The Discharger indicated that the results of this investigation suggested that an additional receiving water study on the effects of chlorine discharges at the variance level was not necessary.

Between October 1996 and September 1997, Mandalay exceeded the BAT level for chlorine and exercised the variance on 2 days. It was not possible to complete a receiving water chlorine study at the variance levels since the chlorine level only exceeded the BAT

level infrequently. The chlorine studies completed by Southern California Edison were reviewed and verbally accepted by Regional Board staff.

29. The Discharger also completed a study of the concentrations of chlorine measured in the receiving waters during chlorination. The investigation was completed for Southern California Edison Company and Los Angeles Department of Water and Power. Nine generating stations were grouped according to discharge characteristics and one candidate from each group was chosen for the study. Scattergood Generating Station was chosen as the station representative of the open coastal discharge. Hence, the results from the study at Scattergood were used as a model to characterize chlorine concentrations in the receiving waters at Mandalay; also considered an open coastal discharge.

Total chlorine, when detected, was always within the zone of initial dilution during a chlorination event.

30. Effluent limitations based on Ocean Plan objectives were calculated using a minimum dilution ration (i.e., parts sea water to one part effluent) of 2.6 to 1 for Discharge Serial No.

001. This ratio is based on calculations made by the State Water Resources Control Board (State Board) using standard dilution models and transmitted to the Regional Board in the State Board memorandum dated February 4, 1985.
31. For toxic constituents regulated in the Ocean Plan (Table B) that 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 excursion in the water quality standards. However, a narrative limit to comply with all Ocean Plan objectives is provided. The Discharger is also required to monitor for all priority pollutants once during the term of the permit.
 32. Acute toxicity monitoring conducted from February 1990 to November 1994 demonstrated consistent compliance with the Ocean Plan objectives. Hence, no numerical limits are prescribed for acute toxicity; the constituent is covered with a narrative limit to comply with all Ocean Plan objectives provided.
 33. The requirements contained in this Order are based on the Basin Plan, the Ocean Plan, USEPA National Recommended Water Quality Criteria, other applicable Federal and State plans, policies, guidelines, and best professional judgement, and, as they are met, will be in conformance with the goals of the aforementioned water quality control plans and will protect and maintain existing beneficial uses of the receiving water.
 34. Pursuant to California Water Code Section 13320, any aggrieved party may seek review of this Order by filing a petition to the State Board. A petition must be sent to the State Water Resources Control Board, P.O. Box 100, 901 P. Street, Sacramento, CA 95812, within 30 days of adoption of this Order.
 35. 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 (California Environmental Quality Act) in accordance with Water Code Section 13389.

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

The 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 a 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, USEPA, has no objections.

IT IS HEREBY ORDERED Reliant Energy, Inc. (Mandalay), 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. Waste discharged shall be limited to those described in the findings only, as proposed.
2. The pH of wastes discharged shall at all times be within the range 6.0 to 9.0.
3. The temperature of the wastes discharged shall not exceed 106°F during normal operation of the facility. During heat treatment, the temperature of waste 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 30 minutes.
4. The discharge of an effluent from Discharge Serial No. 001 with constituents in excess of the following limits is prohibited:

		Discharge Limitations ¹	
<u>Constituents</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Daily Maximum</u>
Arsenic	µg/L	21	107
	lbs/day	44.7	227.8
		Discharge Limitations ¹	
<u>Constituents</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Daily Maximum</u>
Cadmium	µg/L	3.6	14.4
	lbs/day	7.7	30.7
Hexavalent chromium ²	µg/L	7.2	28.8
	lbs/day	15.3	61.3
Copper	µg/L	5.6	38
	lbs/day	11.9	8.1
Lead	µg/L	7.2	28.8
	lbs/day	15.3	61.3
Mercury	µg/L	0.143	0.575
	lbs/day	0.3	1.22
Nickel	µg/L	18	72
	lbs/day	38.3	153

Selenium	µg/L	54	216
	lbs/day	115	460
Silver	µg/L	2.1	9.66
	lbs/day	4.5	20.6
Zinc	µg/L	51.2	267
	lbs/day	109	568
Chronic Toxicity ³	TU _c	----	3.6
Radioactivity	Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269, California Code of Regulations.		

¹ Concentration limits are based on Ocean Plan objectives using a dilution ration of 2.6 parts of seawater to 1 part effluent. The daily mass emission limits (in lbs per day) are determined using the tabulated concentration limits and the maximum permitted flow rate (255.3 mgd).

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 is in compliance with the hexavalent chromium limits.

³ The chronic toxicity of the effluent shall be expressed and reported in toxic units, where:

$$TU_c = 100/NOEC$$

The No Observable Effect Concentration (NOEC) is expressed as the maximum percent effluent concentration that causes no observable effect on a test organisms, as determined by the results of a critical life stage toxicity test.

Chronic toxicity of 100% effluent shall not exceed a daily maximum of 3.6 TU_c in a critical life stage test.

If the chronic toxicity of the effluent exceeds the daily maximum of 3.6 TU_c, the Discharger shall immediately implement accelerated chronic toxicity testing according to MRP No. 2093, Section III.B.4.b. If any three out of the initial test and the six accelerated tests results exceed 3.6 TU_c, the Discharger shall initiate a TIE and implement the Initial Investigation TRE Workplan, as specified in the following section of this Order (Section I.A.5).

The Discharger shall conduct chronic toxicity monitoring as specified in MRP No. 2093.

5. Preparation of an Initial Investigation TRE Workplan

The Discharger shall prepare and submit a copy of the Discharger's initial investigation TRE workplan to the Executive Officer of the Regional Board for approval within 90 days of the effective date of this permit. If the Regional Board Executive Officer does not disapprove the workplan within 60 days, the workplan shall become effective. The Discharger shall use USEPA manuals EPA/600/2-

88/070 (industrial) or EPA/833B-99/002 (municipal) as guidance. This workplan shall describe the steps the Discharger intends to follow if toxicity is detected, and should include, at a minimum:

- a. A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency;
 - b. A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in the operation of the facility; and,
 - c. If a TIE is necessary, an indication of the person who would conduct the TIE (i.e., an in-house expert or an outside contractor). See MRP No. 2093, Section III.B.4.a.ii for the guidance manuals.
6. The wastes discharged from Discharge Serial No. 001 with concentration in excess of the following effluent limits are prohibited:

<u>Constituents</u>	<u>Units</u>	<u>Discharge Limitations⁴</u>	
		<u>30-Day Average</u>	<u>Daily Maximum</u>
Total residual chlorine ^{5,6}	mg/L	----	0.365
	lbs/day		777
Free available chlorine	mg/L	0.2	0.5
	lbs/day	426	1,065

⁴ The daily mass emission limits (lbs/day) is determined using the tabulated concentration limits and the permitted maximum flow (255.3 mgd). For daily discharges where the total flow is not equal to the maximum permitted flow the mass emission limits shall be determined using the following equation:

$$\text{Mass (lbs/day)} = \text{concentration (mg/L)} * 8.34 * \text{flow (million gallons per day)}$$

⁵ Based on the USEPA approved variance from BAT for TRC pursuant to Section 301(g) of the CWA based on daily sampling at Discharge Serial No. 001 during periods of chlorination. The USEPA and State Board approved Ocean Plan Exception utilized a minimum initial dilution of 2.6. Total residual chlorine may not be discharged from any single generating unit for more than 10 minutes per condenser half per shift.

⁶ If other oxidants are used, this shall be the total oxidants reported as residual chlorine.

7. Effluent Limitations for In-plant Waste Streams:

- a. The discharge of metal cleaning wastes⁷ with constituents in excess of the following limits is prohibited:

<u>Constituents</u>	<u>Units</u>	<u>Discharge Limitations⁸</u>	
		<u>30-Day Average</u>	<u>Daily Maximum</u>
Suspended solids	mg/L	30	100
	lbs/day	20	66.7
Oil and grease	mg/L	15	20
	lbs/day	10	13.3
Copper, total	mg/L	1.0	1.0
	lbs/day	0.67	0.67
Iron, total	mg/L	1.0	1.0
	lbs/day	0.67	0.67

⁷ 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.

⁸ The daily mass emission limits (in lbs/day) has been determined using the tabulated concentration limits and the flow rate for inplant wastes (0.08 mgd).

- b. The discharge of low volume wastes⁹ with constituents in excess of the following limits is prohibited:

<u>Constituents</u>	<u>Units</u>	<u>Discharge Limitations¹⁰</u>	
		<u>30-Day Average</u>	<u>Daily Maximum</u>
Suspended solids	mg/L	30	100
	lbs/day	43	143
Oil and grease	mg/L	15	20
	lbs/day	21.5	28.7

⁹ Low volume wastes includes softener regeneration wastes, fireside and air preheater washes, floor drains, boiler blowdown and evaporator blowdown wastes.

¹⁰ The daily mass emission limits (in lbs/day) has been determined using the tabulated concentration limits and reported flow rate for low volume wastes (0.172 mgd).

- c. In the event that waste stream from various sources (6-a and 6-b) are combined for treatment or discharge, the quantity of each pollutant property attributable to each controlled waste source shall not exceed the specified limitation for that waste source.

B. Receiving Water Limitations

1. Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for water contact sports, as determined by the Regional Board, but including all kelp beds, the following bacterial objectives throughout the water column shall be maintained:
 - a. Samples of water from each sampling station shall have a density of total coliform organisms less than 1,000 per 100 ml (10 per ml) provided that not more than 20 percent of the samples at any sampling station in any 30-day period may exceed 1,000 per 100 ml (10 per ml), and provided further that no single sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 ml (100 per ml).
 - b. The fecal coliform density based on a minimum of not less than five samples for any 30-day period, shall not exceed a geometric mean of 200 per 100 ml nor shall more than 10 percent of the total samples during any 60-day period exceed 400 per 100 ml.
2. At all areas where shellfish may be harvested for human consumption, as determined by the Regional Board, the following bacterial objectives throughout the water column shall not be exceeded:

The median total coliform density shall not exceed 70 per 100 ml, and not more than 10 percent of the samples shall exceed 230 per 100 ml.

3. If a receiving water monitoring location consistently exceeds a coliform objective or exceeds a geometric mean enterococcus density of 24 organisms per 100 ml for a 30-day period or 12 organisms per 100 ml for a six-month period, the Discharger shall conduct a sanitary survey to determine if the discharge is the source of the contamination.
4. Floating particulates and grease and oil shall not be visible as a result of wastes discharged.
5. Wastes discharged shall not cause aesthetically undesirable discoloration of the ocean surface (receiving waters).
6. Wastes discharged shall not cause the transmittance of natural light to be significantly reduced at any point outside the initial dilution zone.
7. The rate of deposition and the characteristics of inert solids in ocean sediments shall not be altered such that benthic communities are degraded as a result of wastes discharged.
8. The dissolved oxygen concentration shall not be depressed more than 10 percent from that which occurs naturally as the result of the discharge of oxygen demanding waste materials.
9. The pH of the receiving water shall not be changed at any time more than 0.2 units from that which occurs naturally.
10. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.
11. The wastes discharged shall not increase the concentration in marine sediments of toxic substances listed in Chapter IV, Table B of the Ocean Plan, to levels that would degrade indigenous biota.
12. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life as a result of waste discharged.
13. Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota as a result of waste discharged.
14. Waste discharged shall not degrade marine communities, including vertebrate, invertebrate, and plant species.
15. Waste discharged shall not alter the natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption.

16. The concentration of organic material 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 waste discharged
17. The wastes discharged shall not cause receiving waters to contain any substance in concentrations toxic to human, animal, plant, or fish life.
18. No physical evidence of wastes discharged shall be visible at any time in the water on the shores, rocks or structures.
19. 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.
20. The wastes discharged shall not contain individual pesticides or a combination of pesticides in concentrations that adversely affect beneficial uses.

II. **REQUIREMENTS AND PROVISIONS**

- A. Discharge of any unpermitted wastes to any point other than specifically described in this Order and permit is prohibited and constitutes a violation thereof.
- B. This Order 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 Monitoring and Reporting Program prevail.
- C. This Order includes the attached *Standard Provisions and General Monitoring and Reporting Requirements* (Standard Provisions) (Attachment N). If there is any conflict between provisions stated hereinbefore and the attached Standard Provisions, those provisions attached herein prevail.
- D. 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 program developed to comply with NPDES permits issued by the Regional Board to local agencies.
- E. The Discharger shall comply with all Ocean Plan objectives.
- F. 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.
- G. 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 result 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 II.G.2. has not been implemented, and the result of one sample (Item II.G.1.) exceeds the monthly average, 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 to weekly and shall continue at this level until compliance with the monthly average effluent limitation has been demonstrated.
- H. The Discharger shall comply with all applicable requirements, such as the Storm Water Pollution Prevention Plan (SWPPP) updates and Monitoring and Reporting Program, of State Board's general permit for *Discharges of Storm Water Associated with Industrial Activities* (State Water Resources Control Board Order No. 97-03-DWQ adopted on April 17, 1997).
- I. 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.
- J. 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.
- K. There shall be no discharge of polychlorinated biphenyl compounds such as those once commonly used for transformer fluid.
- L. 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:

- a. Name and general composition of the chemical,
- b. Frequency of use,
- c. Quantities to be used,
- d. Proposed discharge concentrations, and
- e. USEPA registration number, if applicable.

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

- M. 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 discharged; written confirmation shall follow as soon as possible but not later than five working days after occurrence.
- N. This Order may be modified, revoked, and reissued or terminated in accordance with the provisions of 40 CFR Parts 122.44, 122.62, 122.63, 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 notification of planned changes or anticipated noncompliances does not stay any condition of this order and permit.

- O. This Order 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.

III. EXPIRATION DATE

This Order expires on March 10, 2006.

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. 94-131, adopted by this Board on December 5, 1994, is hereby rescinded, except for enforcement purposes.

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 April 26, 2001.

Dennis A. Dickerson
Executive Officer

/CDO