

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

**ORDER NO. R4-2003-0101
NPDES PERMIT NO. CA0000361**

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM PERMIT
AND
WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF LOS ANGELES
DEPARTMENT OF WATER AND POWER
(Harbor Generating Station)**

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

Background

1. The City of Los Angeles Department of Water and Power (hereinafter LADWP or Discharger) discharges wastewater under waste discharge requirements (WDRs) contained in Order No. 95-027, adopted by this Regional Board on February 27, 1995. Order No. 95-027 serves as the National Pollutant Discharge Elimination System (NPDES) permit No. CA0000361.
2. The Discharger has filed a report of waste discharge (ROWD) and has applied for renewal of its WDRs and NPDES permit from its Harbor Generating Station (HGS). HGS discharges its wastes to the West Basin, Los Angeles Harbor, a water of the United States.

Purpose of Order

3. The purpose of this Order is to renew the WDRs for the HGS. This NPDES permit regulates the discharge of once-through cooling water and demineralizer regeneration to West Basin, Los Angeles Harbor, a water of the United States.

Facility Description

4. The LADWP operates HGS, a power plant with a design capacity of 449 megawatts (MW), located at 161 North Island Avenue, Wilmington, California (Latitude: 33° 55' 00"; Longitude: 118° 26' 02"). Figure 1 shows the location of the facility.
5. Prior to 1990, HGS consisted of nine generating units, five of which were steam turbine generators and steam boilers (Units 1-5), and four of which were gas combustion turbine generators (Units 6-9). The LADWP completed repowering the HGS in January 1994 with a start-up in June 1994. The repowering project consisted of replacing two steam boilers and steam turbine generators (Units 1 and 2) with two gas combustion turbine generators coupled to heat recovery boilers. The project also included installation/construction of ancillary facilities such as aqueous ammonia storage tanks, resin tanks, acid and caustic storage tanks, a sodium hypochlorite tank, and reverse osmosis filter assemblies.

Revised July 10, 2003
April 18, 2003

6. In a letter dated November 13, 2000, LADWP notified the Regional Board of their intent to modernize HGS existing equipment. The modifications consisted of removing two (2) simple-cycle gas turbines (Units 8, and 9), and removing two(2) steam boilers (Units 3 and 4) from service, and replacing them with five (5) 43-megawatt, simple-cycle gas turbines. The cooling system of the new turbines uses potable water and the wastewater generated from the operation of the system discharges to the sanitary sewer. This modification was made to satisfy an abatement order issued to LADWP by the South Coast Air Quality Management District. LADWP prepared a Notice of Preparation of an Environmental Impact Report for the proposed modification of the HGS, in accordance with California Environmental Quality Act (CEQA) requirements.
7. At present, the HGS consists of one (1) active steam turbine and seven (7) gas turbine generators.

Discharge Description

8. HGS discharges wastes, consisting of once-through cooling water from the steam electric generating unit and demineralizer regeneration waste water, into the West Basin, Los Angeles Harbor, a water of the United States. The discharge volume is 108 million gallons per day (mgd) during normal operating conditions. The wastes are discharged through an outfall (Discharge Serial No. 001) at Latitude: 33° 45' 59"; Longitude: 118° 16' 12").

The cooling water intake structure is located at the northwest corner of Slip No. 5, Los Angeles Harbor (Latitude: 33° 45' 59"; Longitude: 118° 16' 45") and draws ocean water from a depth of 35 feet Mean Lower Low Water (MLLW).

The outfall and the waste characteristics are summarized in Table 1, Page 3. Figure 2 shows the schematic diagram of the wastewater flow.

9. LADWP has proposed to route HGS process wastewater, consisting of the reverse osmosis reject and the air inlet evaporative cooling water, and the storm water from within the containment area for the aqueous ammonia tanks, to the City sanitary sewer system. The treated boiler acid cleaning wastewater will be hauled offsite. Chemical metal cleaning wastes, consisting of boiler acid rinses is periodically generated, collected, and treated in portable Baker tanks. These modifications are planned to go into effect within 90 days from adoption of this permit.

TABLE 1

Discharge Serial No.		001
Ten (10) Generating Units Served:		Units 1, 2 combined cycle CTs Unit 5 steam turbine Units 6, 7 CTs (idle) Units 10, 11, 12, 13, 14 simple cycle CTs
Diameter (feet)		2x8 tunnels
Outfall Distance Offshore (feet) NE Corner W. Basin		1600
Depth of Terminus, (feet below Mean Lower Low Water)		11-21
Latitude		33° 45' 59"
Longitude		118° 16' 12"
Maximum Temperature, (°F)	Winter (October to April)	70
	Summer (May to September)	84
Waste Streams (mgd)		Flow Volume (mgd)
	Once-through Cooling Water	108
	• Demineralization Regeneration	0.016
	• Sodium Hypochlorite Injection	Negligible
	• Storm Water Run-off / Drains*	.011
Total Flow, mgd		108

* These flows are intermittent.

10. The Discharger controls marine fouling of the cooling water conduits (intake and discharge) by annually "plugging and shooting". This process involves rubber scrubbers, which are drawn through the condensers, scraping the walls clean of fouling material and growth.
11. To control biological growth (defouling), the condenser tubes (arranged in two banks per generating unit, each bank is called a condenser half) are treated by intermittently injecting chlorine (in the form of sodium hypochlorite), or a combination of chlorine and sodium bromide into the cooling water system. Each condenser half is continuously chlorinated for 12 minutes per defouling event.

Storm Water Management

12. The yard storm water runoff from two yard drains is discharged to the Los Angeles Harbor via Discharge Serial No. 001. The remainder of the storm water runoff drains to the street.
13. Pursuant to Section 402(p) of the Clean Water Act and 40 CFR Parts 122, 123, and 124, the State Board adopted general NPDES permits to regulate *Discharges of Storm Water Associated with Industrial Activities* (State Board 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. The Discharger has developed and implemented a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the applicable provisions of the general NPDES permit for storm water discharges.

Applicable Plans, Policies, and Regulations

14. 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.

In accordance with Federal and State guidelines for Section 316(b) of the Clean Water Act, the Discharger conducted a study from 1977 to 1981 to determine whether the location, design, construction, and capacity of the cooling water intake structures reflected the best technology available for minimizing impacts. The HGS intake water requirement was up to 397 mgd at the time of the study. Based on that intake flowrate, the study addressed the important ecological and engineering factors specified in the guidelines, demonstrated that the ecological impacts of the intake system are environmentally acceptable, and provided evidence that no modifications to design, location, or capacity of the intake structure are required.

15. 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 Code of Federal Regulations (CFR) Part 423). These regulations prescribed effluent limitation guidelines for once-through cooling water and various process 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.

16. 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.

17. The Basin Plan contains water quality objectives for, and lists the following beneficial uses of, Los Angeles Inner Harbor :

Existing: Navigation, non-contact water recreation, commercial and sport fishing, marine habitat, and rare, threatened, or endangered species.

Potential: Shellfish harvesting, water contact recreation.

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

18. The State Water Resources Control Board (State Board) adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters, enclosed bays, and estuaries. The narrative objective of the Thermal Plan states that elevated temperatures of wastes discharged shall comply with limitations necessary to assure protection of the beneficial uses.
19. On May 18, 2000, the USEPA promulgated numeric criteria for priority pollutants for the State of California [known as the *California Toxics Rule* (CTR) and codified as 40 CFR part 131.38]. In the CTR, USEPA promulgated criteria that protect the general population at an incremental cancer risk level of one in a million (10^{-6}), for all priority toxic pollutants regulated as carcinogens. The CTR also provides a schedule of compliance not to exceed 5 years from the date of permit issuance for a point source discharge if the discharger demonstrates that it is infeasible to promptly comply with the CTR criteria. On March 2, 2000, State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP was effective April 28, 2000 with respect to the priority pollutants criteria that were promulgated for California by the USEPA through the National Toxics Rule (NTR) and also with respect to the priority pollutant objectives established by the Regional Boards in their Basin Plans, with the exception of the provision on "alternate test procedures for individual discharges" that have been approved by the USEPA Regional Administrator. The "alternate test procedures" provision was effective on May 22, 2000. The SIP was effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR.

The CTR and SIP require dischargers to submit sufficient data to conduct the determination of priority pollutants requiring WQBELs and to calculate the effluent limitations. The CTR criteria for saltwater or human health for consumption of organisms, whichever is more stringent, were used to prescribe the effluent limitations in this Order to protect the beneficial uses of the Los Angeles Harbor watershed.

20. On July 18, 2001, the State Board determined that HGS discharges to an enclosed harbor and thus falls under the jurisdiction of the CTR/SIP for the purposes of determining water quality based effluent limitations.
21. Under 40 CFR 122.44(d), *Water Quality Standards and State Requirements*, "Limitations must control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants), which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." Where numeric effluent limitations for a pollutant or pollutant parameter have not been established in the applicable state water quality control plan, 40 CFR Part 122.44(d)(1)(vi) specifies that water quality-based effluent limitations (WQBELs) may be set based on

USEPA criteria, and may be supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria, and to fully protect designated beneficial uses.

22. Effluent limitation guidelines requiring the application of best practicable control technology currently available (BPT), best conventional pollutant control technology (BCT), and best available technology economically achievable (BAT), were promulgated by the USEPA for some pollutants in this discharge. Effluent limitations for pollutants not subject to the USEPA effluent limitation guidelines are based on one of the following: best professional judgment (BPJ) of BPT, BCT or BAT; current plant performance; or water quality-based effluent limitations (WQBELs). The WQBELs are based on the Basin Plan, other State plans and policies, or USEPA water quality criteria which are taken from the California Toxics Rule (CTR). These requirements, as they are met, will protect and maintain existing beneficial uses of the receiving water. The attached fact sheet for this Order includes specific bases for the effluent limitations.
23. 40 CFR §122.45(f)(1) requires that except under certain conditions, all permit limits, standards, or prohibitions be expressed in terms of mass units. 40 CFR §122.45(f)(2) allows the permit writer, at his discretion, to express limits in additional units (e.g., concentration units). The regulations mandates that, where limits are expressed in more than one unit, the permittee must comply with both.

Generally, mass-based effluent limits would ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limits. Concentration-based effluent limits, on the other hand, would discourage the reduction in treatment efficiency during low flow periods and would require proper operation of treatment units at all times. In the absence of concentration-based effluent limits, a permittee would be able to increase its effluent concentration (i.e., reduce its level of treatment) during low flow periods and still meet its mass-based effluent limits.

24. State and Federal antibacksliding and antidegradation policies require the Regional Board to ensure that the water body will not be further degraded. Antibacksliding provisions are contained in Sections 303(d)(4) and 402(o) of the CWA, and in 40 CFR Part 122.44(l). Those provisions require a reissued permit to be as stringent as the previous permit with some exceptions where effluent limitations may be relaxed.

Section 402(o) establishes express statutory language prohibiting the backsliding of effluent limitations. It consists of three parts:

- 1) Section 402(o)(1) prohibits (subject to exceptions in section 303(d)(4) and/or 402(o)(2)) the relaxation of effluent limitations for two situations:
 - a. When a permittee seeks to revise a technology-based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent, and
 - b. When a permittee seeks relaxation of an effluent limitation which is based on a State treatment standard or water quality standard.

- 2) Section 402(o)(2) outlines exceptions to the prohibition against establishment of less stringent effluent limitations. It provided that establishing less stringent limits may be allowed where:
 - a. There have been material and substantial alterations or additions to the permitted facility which justify the application of less stringent effluent limitations;
 - b. New information (other than revised regulations, guidance, or test methods) is available that was not available when the permit was issued, which would have justified less stringent effluent limits;
 - c. Technical mistakes or mistaken interpretations of the law were made in issuing the permit under Section 402(a)(1)(b);
 - d. Good cause exists due to events beyond the permittee's control (e.g., acts of God) for which there is no reasonably available remedy;
 - e. The permit has been modified under 40 CFR 122.62, or a variance has been granted; or
 - f. The permittee has installed and properly operated and maintained required treatment facilities, but still has been unable to meet the permit limitations (relaxation may only be allowed to the treatment levels actually achieved).

Although the statute identified six exceptions where effluent limitations may be relaxed, the language specifically stated that exceptions "c" and "e" (as listed above) do not apply to water quality-based effluent limitations. Thus, exceptions c & e would only apply to technology-based effluent limitations derived using best professional judgement.

- 3) Section 402(o)(3) prohibits the application of less stringent effluent limitations in all cases if a revised effluent limitation would result in a violation of applicable effluent limitation guidelines or water quality standards. Thus, even if any of the anti-backsliding exceptions outlined in either the statute or regulations are applicable and met, Section 402(o)(3) acts as a floor and restricts the extent to which effluent limitations may be relaxed. This requirement affirms existing provisions of the CWA that require limits, standards, and conditions to ensure compliance with applicable technology-based limits and water quality standards.
25. Effluent limitations are established in accordance with Sections 301, 304, 306, and 307 of the CWA, and amendments thereto. These requirements, as they are met, will maintain and protect the beneficial uses of the the Los Angeles Harbor watershed.

Watershed Management Approach and Total Maximum Daily Loads

26. The Regional Board has implemented a Watershed Management Approach to address water quality issues in the region. Watershed management may include diverse issues as

defined by stakeholders to identify comprehensive solutions to protect, enhance, and restore water quality and beneficial uses. To achieve this goal, the watershed management approach integrates the Regional Board's many diverse programs, particularly Total Maximum Daily Loads (TMDLs), to better assess cumulative impacts of pollutants from all point and non-point sources to more efficiently develop watershed-specific solutions that balance the environmental and economic impacts within a watershed. The TMDLs will establish waste load allocations (WLAs) and load allocations (LAs) for point and non-point sources, and will result in achieving water quality standards for the waterbody.

The Los Angeles/Long Beach Harbors are located in the southern portion of the Los Angeles Basin in the greater San Pedro Bay. Together with Dominguez Channel, these harbors receive discharges from highly industrialized areas. The 1998 State Board's California 303(d) list classifies several portions of the Los Angeles Inner Harbor as impaired. These water bodies include: Consolidated Slip, Southwest Slip, a portion of Main Channel, Fish Harbor, Cabrillo Pier, and breakwater. The pollutants of concern detected in the water column, in the sediment, and in the fish tissue, include: copper, lead, ammonia, coliform, chromium, zinc, DDT, PAHs, sediment toxicity, aldrin, benthic community effects, Chem A [refers to the sum of aldrin, dieldrin, chlordane, endrin, heptachlor, heptachlor epoxide, HCH (including lindane), endosulfan, and toxaphene], DDT, PCBs, and tributyltin.

Data Availability and Reasonable Potential Analysis

27. 40 CFR 122.44(d)(1)(i) and (ii) require that each pollutant be analyzed with respect to its reasonable potential when determining whether a discharge (1) causes, (2) has the reasonable potential to cause, or (3) contributes to the exceedance of a receiving water quality objective/criterion. This is done by conducting a reasonable potential analysis (RPA) for each pollutant. If data are not sufficient to do a RPA, a pollutant is subject to interim monitoring requirements.
28. Section 1.3 of the SIP requires that a limit be imposed for a toxic pollutant if (1) the maximum effluent concentration (MEC) is greater than the most stringent CTR criteria, or (2) the background concentration is greater than the CTR criteria, or (3) other information is available.
29. Due to insufficient submitted data, RPA were not performed for the 126 priority pollutants. In accordance with Section 13267 of the California Water Code and the SIP, the Discharger will be required by the Regional Board to conduct an interim monitoring program of the effluent and the receiving water for three years. The data collected will be submitted every quarter to the Regional Board. The data shall be used to determine the Reasonable Potential of a priority pollutant and to calculate the effluent limitation, if required.
30. Water quality objectives/criteria specified in the Basin Plan, the CTR, or the effluent limits from the existing permit were used to set the limits for pollutants that are believed to be present in the effluent and have reasonable potential of exceeding the water quality criteria. Other pollutants may only be monitored to gather data to be used in RPAs for future permit renewals and updates.

301(g) Variance

31. At times of peak power demand during defouling treatment, maximum residual chlorine levels in the once-through cooling water (up to 0.36 mg/L) have exceeded the effluent limitation based on 40 CFR Part 423 guidelines (0.20 mg/L). However, chlorination bioassay studies performed by the Discharger in 1987 showed no significant adverse impact on the receiving waters as a result of the chlorine levels in the discharge from the plant.
32. In accordance with the NPDES permit issued on February 27, 1995, the Discharger conducted a study on May 18, 1995, to determine the time, during the chlorination cycle, that the peak residual chlorine concentrations occurred in the discharge to ensure that compliance monitoring samples for total residual chlorine (TRC) were collected at the time of highest chlorine level in the stations' combined effluent. The results of the study indicated that the maximum chlorine concentration occurs 12 minutes after the start of the chlorination cycle. The study confirmed that the Discharger's existing sampling procedures were appropriate.
33. On May 13, 1998, the USEPA approved the Discharger's request (made by the Discharger in 1984) for a variance from Best Available Technology Economically Achievable (BAT) for TRC pursuant to Section 301(g) of the Clean Water Act with the following conditions:
 - a. The effluent from Outfall 001 must meet an effluent limitation of 0.377 mg/L TRC (instantaneous maximum) based on daily sampling at Outfall 001.
 - b. The whole effluent from Outfall 001 must meet a chronic toxicity limit of 4.1 TUc (daily maximum) using state-approved test species and methods as specified in the NPDES permit. The chronic toxicity tests, which are conducted quarterly, must be representative of actual discharge conditions (at a minimum) or of the Proposed Modified Effluent Limitations (PMEL) conditions. This means that, at a minimum, the effluent samples must be chlorinated in the laboratory to levels consistent with the maximum TRC effluent concentration measured during the previous three months' chlorination events. Alternatively, the samples may be chlorinated to the PMEL concentrations unless the maximum TRC concentration from the previous three months exceeds the PMEL concentration. All other procedures shall be consistent with the monitoring requirements in the NPDES permit. This requirement to chlorinate samples in the laboratory applies only if the chlorine concentrations recorded during the previous three months exceed the BAT limit of 0.2 mg/L.
 - c. If the effluent chronic toxicity limitation is exceeded, the Discharger shall increase the monitoring frequency from quarterly to monthly until compliance has been demonstrated for three months in accordance with NPDES permit No. CA0000361. If the chronic toxicity limit is exceeded again during the accelerated monitoring period, the Discharger shall conduct a Toxicity Reduction Evaluation (TRE) in order to identify and eliminate the source(s) of toxicity. The TRE shall be conducted in accordance with USEPA's most current TRE and Toxicity Identification Evaluation (TIE) test methods.

- d. This 301(g) approval can be reviewed and revised by USEPA at any time if subsequent information indicates that the PMEL will not result in compliance with all 301(g) criteria. This information includes but is not limited to subsequent chronic toxicity test results and TIE/TRE findings indicating that the discharge of TRC at concentrations greater than the BAT limit of 0.2 mg/L results in exceedance of the toxicity limit.
34. Since approval of the 301 (g) variance in 1998, the Discharger's results of chronic toxicity testing of effluent samples artificially spiked with chlorine in the laboratory at the maximum chlorine level (0.377 mg/L) allowed, have been consistent at 4.1 TU_c.

Regional Monitoring Program

35. Several efforts are underway to develop and implement a comprehensive regional monitoring regional program for the Southern California Bight, in particular, the Santa Monica Bay. These efforts have the support and participation from regulatory agencies, dischargers and environmental groups. The goal is to establish a regional program to address public health concerns, monitor trends in natural resources and nearshore habitats, and assess regional impacts from all contaminant sources, and at the same time assess compliance with the NPDES permit. To reflect future regional program events, the monitoring program in this Order will be revised when the regional monitoring program has been completed.

CEQA and Notifications

36. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.
37. The Regional Board, in a public hearing, heard and considered all comments pertaining to the discharge and to the tentative requirements.
38. 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 ninety (90) days from the date of its adoption provided the Regional Administrator, USEPA, has no objections.
39. Pursuant to California Water Code Section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Board. A petition must be sent to the State Water Resources Control Board, Office of Chief Counsel, ATTN: Elizabeth Miller Jennings, Senior Staff Counsel, 1001 I Street, 22nd Floor, Sacramento, California 95814, within 30 days of adoption of this order.
40. 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 California Water Code Section 13389.

IT IS HEREBY ORDERED that City of Los Angeles Department of Water and Power (Harbor Generating Station), 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. Discharge Prohibition

1. Wastes discharged shall be limited to a maximum of 108 million gallons per day (mgd) of wastewater.
2. Discharge of water, materials, toxic wastes, deleterious substances, or wastes other than those authorized by this order to the Los Angeles Inner Harbor or waters of the United States are prohibited.

B. Effluent Limitations

1. The temperature of wastes discharged shall not exceed 94°F during normal operation of the facility.
2. The effluent pH shall at all times be within the range of 6.5 to 8.5 pH units.
3. Toxicity limitations:
 - a) Acute Toxicity Limitation and Requirements
 - (1) The acute toxicity of the effluent shall be such that (i) the average survival in the undiluted effluent for any three (3) consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, and (ii) no single test producing less than 70% survival.
 - (2) If either of the above requirement (Section B.3, paragraph a), sub (1)) is not met, the Discharger shall conduct six additional tests over a six-week period. The Discharger shall ensure that they receive results of a failing acute toxicity test within 24 hours of the completion of the test, and the additional tests shall begin within 3 business days of the receipt of the result. If the additional tests indicate compliance with acute toxicity limitation, the Discharger may resume regular testing. However if the results of any two of the six accelerated tests are less than 90% survival, then the Discharger shall begin a Toxicity Identification Evaluation (TIE). The TIE shall include all reasonable steps to identify the source(s) of toxicity. Once the source(s) of toxicity is identified, the Discharger shall take all reasonable steps to reduce the toxicity to meet the objective.

- (3) If the initial test and any of the additional six acute toxicity bioassay tests result in less than 70% survival, the Discharger shall immediately begin a TIE.
- (4) The Discharger shall conduct acute toxicity monitoring as specified in Monitoring and Reporting Program No. 2020.

b) Chronic Toxicity Limitation and Requirements

- (1) This Order includes a chronic toxicity testing trigger defined as an exceedance of 4.1 TU_c in a critical life stage test for 100% effluent. (The monthly median for chronic toxicity of 100% effluent shall not exceed 4.1 TU_c in a critical life stage test.)
- (2) If the chronic toxicity of the effluent exceeds 4.1 TU_c, the Discharger shall immediately implement accelerated chronic toxicity testing according to Monitoring and Reporting Program 2020, Item IV.D.1. If the results of two of the six accelerated tests exceed 4.1 TU_c, the Discharger shall initiate a TIE and implement the initial toxicity reduction evaluation (TRE) Workplan.
- (3) The Discharger shall conduct chronic toxicity monitoring as specified in Monitoring and Reporting Program No. 2020.
- (4) The chronic toxicity of the effluent shall be expressed and reported in toxic units, where:

$$TU_c = \frac{100}{NOEC}$$

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

(5) Preparation of an Initial Investigation TRE Workplan

- i. The Discharger shall submit a copy of the Discharger's initial investigation TRE workplan (1-2 pages) to the Executive Officer of the Regional Board for approval within 180 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 EPA 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:
- ii. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency;

- iii. 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 operation of the facility; and,
- iv. If a TIE is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor) (See MRP Section V.E.3. for guidance manuals).

4. The discharge of effluent with constituents in excess of the following limits is prohibited:

Constituent	Discharge Limitations							
	Daily Maximum				Monthly Average			
	Concentration ¹		Mass ²		Concentration ¹		Mass ²	
Total residual chlorine ³	0.377	mg/L	340	lbs/day		mg/L		lbs/day
Free available chlorine	0.377	mg/L	340	lbs/day	0.20	mg/L	180	lbs/day
Arsenic ⁴	122	µg/L	110	lbs/day	23.5	µg/L	21	lbs/day
Cadmium ⁴	16.4	µg/L	15	lbs/day	4.1	µg/L	3.7	lbs/day
Hexavalent chromium ⁴	32.8	µg/L	29	lbs/day	8.2	µg/L	7.4	lbs/day
Copper ⁴	43	µg/L	39	lbs/day	6.1	µg/L	5.5	lbs/day
Lead ⁴	32.8	µg/L	29	lbs/day	8.2	µg/L	7.4	lbs/day
Mercury ⁴	0.654	µg/L	0.589	lbs/day	0.162	µg/L	0.14	lbs/day
Nickel ⁴	82	µg/L	74	lbs/day	20.5	µg/L	18	lbs/day
Selenium ⁴	246	µg/L	220	lbs/day	61.5	µg/L	55	lbs/day
Silver ⁴	10.98	µg/L	9.8	lbs/day	2.37	µg/L	2.1	lbs/day
Zinc ⁴	303	µg/L	270	lbs/day	57.23	µg/L	51	lbs/day
Chronic toxicity	4.1	TUc	---			TUc		
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 Concentration limits are based on old permit limitations.

² The mass-based effluent limitations are based on a maximum flow of 108 mgd. The equation used to calculate the mass is:
 $m = 8.34 * C * Q$ where:
 m = mass limit for a pollutant in lbs/day
 C = concentration limit for a pollutant, mg/L
 Q = maximum discharge flow rate

³ 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. Total residual chlorine may not be discharged from any single generating unit for less than 12 minutes per condenser half, per shift. For chlorine discharges of up to 12 minutes for Discharge Serial No. 001, the daily maximum limit is 0.377 mg/l. If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.

⁴ The units for these metals are micrograms per liter (µg/L). Discharge limitations are expressed as total recoverable.

C. Inplant Limitations for Process Waste Streams:

1. The discharge of demineralization regeneration waste stream with constituents in excess of the following limits is prohibited:

Constituents	Discharge Limitations							
	Daily Maximum				Monthly Average			
	Concentration ¹		Mass ²		Concentration ¹		Mass ²	
Suspended Solids	100	mg/L	13	lbs/day	30	mg/L	4.0	lbs/day
Oil & Grease	20	mg/L	2.7	lbs/day	15	mg/L	2.0	lbs/day

¹ Concentration limits are provided in mg/L based on 40 CFR Part 423, Effluent Limitation Guidelines and Standards for Steam Electric Power Generating Point Source Category, July 1, 1990, Edition.

² The mass-based effluent limitations are based on a maximum flow of 0.016 mgd.
 The equation used to calculate the mass is:
 $m = 8.34 * C * Q$ where:
 m = mass limit for a pollutant in lbs/day
 C = concentration limit for a pollutant, mg/L
 Q = maximum discharge flow rate

II. Receiving Water Limitations

1. The discharge shall not cause the following conditions to exist in the receiving waters:
 - a) Floating, suspended or deposited macroscopic particulate matter or foam;
 - b) Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - c) Visible, floating, suspended or deposited oil or other products of petroleum origin;
 - d) Bottom deposits or aquatic growths; or,
 - e) Toxic or other deleterious substances to be present in concentrations or quantities which cause deleterious effects on aquatic biota, wildlife, or waterfowl or render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge shall not cause nuisance, or adversely effect beneficial uses of the receiving water.
3. No discharge shall cause a surface water temperature rise greater than 5°F above the natural temperature of the receiving waters at any time or place.
4. The discharge shall not cause the following limitations to be exceeded in the receiving waters at any place within the waterbody of the receiving waters:

- a) Dissolved oxygen shall not be less than 5.0 mg/L anytime, and the median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation;
 - b) The wastes discharged shall not depress the dissolved oxygen concentrations outside the zone of initial dilution at any time by more than 10 percent from that which occurs naturally, excluding effects of naturally induced upwelling.
 - c) The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.2 pH units from that which occurs naturally outside the zone of initial dilution;
 - d) Dissolved sulfide shall not be greater than 0.1 mg/L;
 - e) Total ammonia (as N) shall not exceed concentrations specified in the Basin Plan (June 13, 1994, Attachment H).
 - f) The discharge shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Board or State Board. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Regional Board will revise or modify this Order in accordance with such standards.
5. No physical evidence of wastes discharged shall be visible at any time in the water or on beaches, shores, rocks, or structures.
 6. 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.
 7. The wastes discharged shall not contain an individual pesticide or combination of pesticides in concentrations that adversely affect beneficial uses.
 8. There shall be no chronic toxicity in ambient waters as a result of wastes discharged.

III. Requirements

1. The Discharger shall develop and implement, within 90 days of the effective date of this Order, a Best Management Practices Plan (BMPP). The purpose of the BMPP is to establish site-specific procedures that will prevent the discharge of pollutants in wastewaters. The BMPP should also address non-storm water discharges from outside the facility. The BMPP shall be site-specific and shall cover all areas of the facility. If necessary, the plans shall be updated to address any changes in operation and/or management of the facility. Updated plans shall be submitted to the Regional Board within 30 days of revision.
2. Pursuant to the requirements of 40 CFR 122.42(a), the Discharger must notify the

- Board as soon as it knows, or has reason to believe (1) that it has begun or expected to begin, to use or manufacture a toxic pollutant not reported in the permit application, or (2) a discharge of toxic pollutant not limited by this Order has occurred, or will occur, in concentrations that exceed the specified limitations in 40 CFR 122.42(a).
3. In the determination of compliance with the monthly average limitations, the following provisions shall apply to all constituents:
 - a) 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
 - b) Discharger will have demonstrated compliance with the monthly average limit for that month.
 - c) 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.
 - d) 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.
 - e) 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.
 4. 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 or another NPDES permit. This requirement is not applicable to products used for lawn and agricultural purposes.
 5. 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.
 6. There shall be no discharge of PCB compounds such as those once commonly used for transformer fluid.
 7. The Discharger shall notify the Executive Officer in writing no later than 6 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.

8. 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.

IV. Provisions

1. 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 herein and the attached Standard Provisions, those provisions stated herein shall prevail.
2. This Order includes the attached Monitoring and Reporting Program No. 2020. If there is any conflict between provisions stated in the Monitoring and Reporting Program and the Standard Provisions, those provisions stated in the former shall prevail.
3. This Order may be modified, revoked, reissued, or terminated in accordance with the provisions of 40 CFR sections 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; 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. The filing of a request by the Discharger for an Order modification, revocation, and issuance or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.
4. 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.
5. Discharge of wastes to any point other than specifically described in this Order and permit is prohibited and constitutes a violation thereof.
6. 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.

7. 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; significant change in the characteristics of the effluent including the introduction of process wastewater; 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.

V. Reopeners

1. This Order may be reopened and modified, in accordance with SIP Section 2.2.2.A, to incorporate new limits based on future RPA to be conducted, upon completion of the collection of additional data by the Discharger.
2. This Order may be reopened and modified, to incorporate in accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include requirements for the implementation of the watershed management approach.
3. This Order may be reopened and modified, in accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include new minimum levels (MLs) for each pollutant.
4. This Order may be reopened and modified, to revise effluent limitations as a result of future Basin Plan Amendments, or the adoption of a TMDL for the Los Angeles Harbor and the Dominguez Watershed.
5. This Order may be reopened upon the submission by the Discharger, of adequate information, as determined by the Regional Board, to provide for dilution credits or a mixing zone, as may be appropriate.
6. This Order may be reopened and modified, to revise the toxicity language once that language becomes standardized.
7. This Order may be reopened and modified, revoked, and reissued or terminated in accordance with the provisions of 40 CFR sections 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; significant change in the characteristics of the effluent including the reintroduction of process wastewater; 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.

8. This order may be reopened and modified if LADWP failed to discharge the HGS process wastes to the sewer system ninety (90) days after the adoption of this permit and LADWP has no alternative disposal option.
9. This Order shall be reopened and modified to incorporate relevant and appropriate requirements for cooling water intake structures for existing facilities as specified by future USEPA Phase II regulations implementing the Clean Water Act Section 316(b) Best Technology Available standards.

VI. Expiration Date

This Order expires on June 10, 2008.

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.

VII. Rescission

Order No. 95-027, adopted by this Regional Board on February 27, 1995, is hereby rescinded except for enforcement purposes.

I, Dennis 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 July 10, 2003.

Dennis A. Dickerson
Executive Officer

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

**MONITORING AND REPORTING PROGRAM NO. 2020
for
CITY OF LOS ANGELES DEPARTMENT OF WATER AND POWER
HARBOR GENERATING STATION
(CA0000361)**

I. Reporting Requirements

- A. The City of Los Angeles Department of Water and Power Harbor Generating Station (hereinafter HGS or Discharger) shall implement this monitoring program on the effective date of this Order. All monitoring reports shall be submitted quarterly and must be received by the Regional Board by the dates in the following schedule. All monitoring reports should be addressed to the Regional Board, Attention: Information Technology Unit. The first monitoring report under this Program is due by November 15, 2003.

Reporting Period	Report Due
January-March	May 15
April-June	August 15
July-September	November 15
October-December	February 15
Semi-annual sampling (to be conducted during October to March, and during April to September)	May 15 & November 15, respectively

- B. If there is no discharge during any reporting period, the report shall so state. The Discharger shall submit an annual summary report containing a discussion of the previous year's effluent and receiving water monitoring data, as well as graphical and tabular summaries of the data. The data shall be submitted to the Regional Board on hard copy and on a 3½ " computer diskette. Submitted data must be IBM compatible, preferably using EXCEL software. This annual report is to be received by the Regional Board by March 1 of each year following the calendar year of data collection.
- C. Each monitoring report shall contain a separate section titled "Summary of Non-compliance: which discusses the compliance record and corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. This section shall clearly list all non-compliance with waste discharge requirements, as well as all excursions of effluent limitations.
- D. The Discharger shall inform the Regional Board well in advance of any proposed construction activity that could potentially affect compliance with applicable requirements.

II. Effluent Monitoring Requirements

- A. A sampling station shall be established for each point of discharge and shall be located where representative samples of that effluent can be obtained.
- B. This Regional Board shall be notified in writing of any change in the sampling stations once established or in the methods for determining the quantities of pollutants in the individual waste streams.
- C. Pollutants shall be analyzed using the analytical methods described in 40 CFR 136.3, 136.4, and 136.5 (revised May 14, 1999); or, where no methods are specified for a given pollutant, by methods approved by this Regional Board or the State Board. Laboratories analyzing effluent samples and receiving water samples shall be certified by the California Department of Health Services and must include quality assurance/quality control (QA/QC) data in their reports.

The monitoring reports shall specify the analytical method used, the Method Detection Limit (MDL), the Minimum Level (ML), and the Reported Minimum Level (RML) for each pollutant. For the purpose of reporting compliance with numerical limitations, performance goals, and receiving water limitations, analytical data shall be reported by one of the following methods, as appropriate:

1. An actual numerical value for sample results greater than or equal to the RML;
or,
2. "Detected, but Not Quantified (DNQ)" if results are greater than or equal to the laboratory's MDL but less than the RML; or,
3. "Not-Detected (ND)" for sample results less than the laboratory's MDL with the MDL indicated for the analytical method used.

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

- D. Where possible, the MLs employed for effluent analyses shall be lower than the permit limitations established for a given parameter. If the ML value is not below the effluent limitation, then the lowest ML value and its associated analytical method shall be selected for compliance purposes. At least once a year, the Discharger shall submit a list of the analytical methods employed for each test and associated laboratory QA/QC procedures.

The Regional Board, in consultation with the State Board Quality Assurance Program, shall establish an ML that is not contained in Attachment A to be included in the Discharger's permit in any of the following situations:

1. When the pollutant under consideration is not included in Attachment A;
 2. When the Discharger and Regional Board agree to include in the permit a test method that is more sensitive than that specified in 40 CFR Part 136 (revised May 14, 1999);
 3. When the Discharger agrees to use an ML that is lower than that listed in Attachment A;
 4. When the Discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Attachment A, and proposes an appropriate ML for their matrix; or,
 5. When the Discharger uses a method whose quantification practices are not consistent with the definition of an ML. Examples of such methods are the USEPA-approved method 1613 for dioxins and furans, method 1624 for volatile organic substances, and method 1625 for semi-volatile organic substances. In such cases, the Discharger, the Regional Board, and the State Board shall agree on a lowest quantifiable limit and that limit will substitute for the ML for reporting and compliance determination purposes.
- E. Laboratory analyses – all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be submitted with the Annual Report.
- F. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR 136.3. All QA/QC items must be run on the same dates the samples were actually analyzed, and the results shall be reported in the Regional Board format, when it becomes available, and submitted with the laboratory reports. Proper chain of custody procedures must be followed, and a copy of the chain of custody shall be submitted with the report.
- G. If applicable, annual effluent analyses shall be performed during the month of February. Results of annual analyses shall be reported in the appropriate quarterly monitoring report.
- H. All analyses shall be accompanied by the chain of custody, including but not limited to data and time of sampling, sample identification, and name of person who performed sampling, date of analysis, name of person who performed analysis, QA/QC data, method detection limits, analytical methods, copy of laboratory certification, and a perjury statement executed by the person responsible for the laboratory.
- I. Quarterly effluent analyses shall be performed during the months of February, May, August and November. Annual effluent analyses shall be performed during the month of February.

- J. For parameters that both monthly average and daily maximum limits are specified and the monitoring frequency is less than four times a month, the following shall apply. If an analytical result is greater than the monthly average limit, the sampling frequency shall be increased (within one week of receiving the test results) to a minimum of once weekly at equal intervals, until at least four consecutive weekly samples have been obtained, and compliance with the monthly average limit has been demonstrated. The Discharger shall provide for the approval of the Executive Officer a program to ensure future compliance with the monthly average limit.

III. Effluent Monitoring Program

The following shall constitute the effluent monitoring program for the final effluent from Discharge No. 001:

Constituent	Units	Type of Sample	Sampling Frequency
Flow ^[1]	gal/day	----	Daily
pH	standard units	Grab	Daily
Temperature ^[1]	°F	Continuous	---
Total Residual Chlorine ^[2]	mg/L	Grab ^[3]	Daily
Free Available Chlorine ^[2]	mg/L	Grab ^[3]	Daily
Oil and Grease	mg/L	Grab	Monthly
BOD ₅ @ 20°C	mg/L	Grab	Monthly
Total suspended solids	mg/L	Grab	Monthly
Ammonia Nitrogen	µg/L	Grab	Annually
Nitrate Nitrogen	mg/L	Grab	Annually
Antimony	µg/L	Grab	Annually
Arsenic	µg/L	Grab	Annually
Beryllium	µg/L	Grab	Annually
Chromium (III)	µg/L	Grab	Annually
Hexavalent chromium	µg/L	Grab	Annually
Cadmium	µg/L	Grab	Annually
Copper	µg/L	Grab	Annually
Lead	µg/L	Grab	Annually
Mercury	µg/L	Grab	Annually
Nickel	µg/L	Grab	Annually
Selenium	µg/L	Grab	Annually
Silver	µg/L	Grab	Annually
Thallium	µg/L	Grab	Annually
Zinc	µg/L	Grab	Annually
Radioactivity ^[4]	pCi/ml	Grab	Annually
Priority pollutants	µg/L	Grab	Annually
Toxicity-chronic	TU _c	Grab	Annually

[1] Where continuous monitoring of temperature, and flow is required, the following shall be included in the report:

Temperature: Only the maximum temperature for each calendar day shall be reported, except when temperatures exceed 94°F, in which case the reason(s), time of day, and duration of such events shall also be reported.

Flow: Total daily flow.

- [2] Monitoring is only applicable during periods of chlorine addition. A statement certifying that chlorination did not occur during the day may be submitted in lieu of an analysis.
- [3] Multiple grab samples, with at least four equally-spaced samples during each hour of chlorine addition. The maximum and average concentrations for the duration of the chlorine addition shall be reported. Alternatively, a single grab sample may be collected at the time of peak residual chlorine concentration.
- [4] Radioactivity determinations of gross and net beta activity, in picocuries per liter, shall be made within 48 hours following preparation of samples. The overall efficiency of the counting system, size of sample, and counting time shall be such that radioactivity can be determined to a sensitivity of ten picocuries per liter with a 95% confidence limit not to exceed 50 percent.

 A statement certifying that radioactive pollutants were not added to the discharge may be submitted in lieu of monitoring.
- [5] The Discharger shall conduct acute toxicity tests on 100% effluent grab samples by methods specified in 40 CRF Part 136 which cites USEPA's Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, Fifth Edition, October 2002, (EPA/821-R-02-012) or a more recent edition.

IV. Effluent Monitoring Program for Demineralizer Regeneration Waste

Constituent	Units	Type of Sample	Sampling Frequency
Flow	gal/day	----	Weekly ^[7]
PH	standard units	Grab	Weekly ^[7]
Oil and Grease	mg/L	Grab	Weekly ^[7]
BOD ₅ @ 20°C	mg/L	Grab	Weekly ^[7]
Total suspended solids	mg/L	Grab	Weekly ^[7]
Priority pollutants	µg/L	grab	Quarterly ^[8]

- [6] If no discharge occurred during the month, the report shall so state.
- [7] Sampling frequency shall be reduced to monthly one year after the effective date of this Order if the Executive Officer determines that existing monitoring demonstrates no adverse effect on receiving waters.
- [8] Sampling and analyses shall be on a quarterly basis for one year after adoption of this Order. Analysis for priority pollutants in demineralizer regeneration waste should include metals.

V. Toxicity Monitoring Requirements

A. Acute Toxicity Effluent Monitoring Program

1. The Discharger shall conduct acute toxicity tests on effluent grab samples by methods specified in 40 CFR Part 136 which cites USEPA's *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms*, Fifth Edition, October 2002, (EPA/821-R-02-012) or a more recent edition to ensure compliance in 100 % effluent.
2. The fathead minnow, *Pimephales promelas*, shall be used as the test species for fresh water discharges and the topsmelt, *Atherinops affinis*, shall be used as the test species for brackish effluent. The method for topsmelt is found in USEPA's *Short-term Method for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, Third Edition, October 2002, (EPA/821-R-02-014).
3. In lieu of conducting the standard acute toxicity testing with the fathead minnow, the Discharger may elect to report the results or endpoint from the first 48 hours of the chronic toxicity test as the results of the acute toxicity test.
4. Effluent samples shall be collected after all treatment processes and before discharge to the storm drain.

B. Chronic Toxicity Effluent Monitoring Program

1. The Discharger shall conduct critical life stage chronic toxicity tests on 24-hour composite 100 percent effluent samples in accordance with EPA's *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, October 2002, (EPA/821-R-02-013) or EPA's *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, Third Edition, October 2002, (EPA/821-R-02-014).
2. Effluent samples shall be collected after all treatment processes and before discharge to the harbor.

Test Species and Methods:

- a. The Discharger shall conduct tests as follows: with a vertebrate, an invertebrate, and a plant for the first three suites of tests. After the screening period, monitoring shall be conducted using the most sensitive species.

- b. Re-screening is required every 15 months. The Discharger shall re-screen with the three species listed above and continue to monitor with the most sensitive species. If the first suite of re-screening tests demonstrates that the same species is the most sensitive than re-screening does not need to include more than one suite of tests. If a different species is the most sensitive or if there is ambiguity then the Discharger shall proceed with suites of screening tests for a minimum of three, but not to exceed five suites.
- c. The presence of chronic toxicity shall be estimated as specified using West Coast marine organisms according to EPA's Short-Term Methods for Estimating Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms, October 2002, (EPA/821-R-02-014).

C. Quality Assurance

1. Concurrent testing with a reference toxicant shall be conducted. Reference toxicant tests shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).
2. If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the test methods manuals (EPA/821-R-02-013 and EPA/821-R-02-014), then the Discharger must re-sample and re-test at the earliest time possible.
3. Control and dilution water should be receiving water or laboratory water, as appropriate, as described in the manual. If the dilution water used is different from the culture water, a second control using culture water shall be used.

D. Accelerated Monitoring

1. If toxicity exceeds the limitations (as defined in Order No. R4-2003-XXXX, Section I.B.3.a.1.), then the Discharger shall immediately implement accelerated testing as specified in Section I.B.3.a.2 and Section 1.B.3.b.2. The Discharger shall ensure that they receive results of a failing acute toxicity test within 24 hours of the close of the test and the additional tests shall begin within 3 business days of the receipt of the result. If the accelerated testing shows consistent toxicity, the Discharger shall immediately implement the Initial Investigation of the Toxicity Reduction Evaluation (TRE) Workplan.
2. If implementation of the initial investigation TRE Workplan indicates the source of toxicity (e.g., a temporary plant upset, etc.), then the Discharger may

discontinue the Toxicity Identification Evaluation (TIE).

3. The first step in the initial Investigation TRE Workplan for downstream receiving water toxicity can be a toxicity test protocol designed to determine if the effluent from Outfall 001 causes or contributes to the measured downstream chronic toxicity. If this first step TRE testing shows that the effluent does not cause or contribute to downstream chronic toxicity, using EPA' s Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, October 2002, (EPA/821-R-02-014). Then a report on this testing shall be submitted to the Board and the TRE will be considered to be completed. Routine testing in accordance with MRP No. 6945 shall be continued thereafter.

E. Steps in TRE and TIE procedures:

1. Following a TRE trigger, the Discharger shall initiate a TRE in accordance with the facility's initial investigation TRE workplan. At a minimum, the Discharger shall use EPA manuals EPA/600/2-88/070 (industrial) or EPA/833B-99/002 (municipal) as guidance. The Discharger shall expeditiously develop a more detailed TRE workplan for submittal to the Executive Officer within 30 days of the trigger, which will include, but not be limited to:
 - a. Further actions to investigate and identify the cause of toxicity;
 - b. Actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity;
 - c. Standards the Discharger will apply to consider the TRE complete and to return to normal sampling frequency; and,
 - d. A schedule for these actions.
2. The following is a stepwise approach in conducting the TRE:
 - a. Step 1 - Basic data collection. Data collected for the accelerated monitoring requirements may be used to conduct the TRE:
 - b. Step 2 - Evaluates optimization of the treatment system operation, facility housekeeping, and the selection and use of in-plant process chemicals;
 - c. If Steps 1 and 2 are unsuccessful, Step 3 implements a TIE and employment of all reasonable efforts and using currently available TIE methodologies. The objective of the TIE is to identify the substance or combination of

substances causing the observed toxicity;

- d. Assuming successful identification or characterization of the toxicant(s), Step 4 evaluates final effluent treatment options;
- e. Step 5 evaluates in-plant treatment options; and,
- f. Step 6 consists of confirmation once a toxicity control method has been implemented.

Many recommended TRE elements parallel source control, pollution prevention, and storm water control program best management practices (BMPs). To prevent duplication of efforts, evidence of implementation of these control measures may be sufficient to comply with TRE requirements. By requiring the first steps of a TRE to be accelerated testing and review of the facility's TRE workplan, a TRE may be ended in its early stages. All reasonable steps shall be taken to reduce toxicity to the required level. The TRE may be ended at any stage if monitoring indicates there is no longer toxicity (or six consecutive chronic toxicity results are less than or equal to 1.0 TU_c).

3. The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. The Discharger shall use the EPA acute and chronic manuals, EPA/600/6-91/005F (Phase I)/EPA/600/R-96-054 (for marine), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III) as guidance.
4. If a TRE/TIE is initiated prior to completion of the accelerated testing schedule required by Part I.B.3.a.2 and Part I.B.3.b.2 of Order No. R4-2003-XXXX, then the accelerated testing schedule may be terminated, or used as necessary in performing the TRE/TIE, as determined by the Executive Officer.
5. Toxicity tests conducted as part of a TRE/TIE may also be used for compliance, if appropriate.
6. The Board recognizes that toxicity may be episodic and identification of causes of and reduction of sources of toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

F. Reporting

1. The Discharger shall submit a full report of the toxicity test results, including any accelerated testing conducted during the month as required by this permit. Test results shall be reported as % survival with the discharge monitoring reports (DMR) for the month in which the test is conducted.
2. If an initial investigation indicates the source of toxicity and accelerated testing is unnecessary, then those results also shall be submitted with the DMR for the period in which the investigation occurred.
 - a) The full report shall be submitted on or before the end of the month in which the DMR is submitted.
 - b) The full report shall consist of (1) the results; (2) the dates of sample collection and initiation of each toxicity test; (3) the acute toxicity average limit or chronic toxicity limit or trigger.
3. Test results for toxicity tests also shall be reported according to the appropriate manual chapter on Report Preparation and shall be attached to the DMR. Routine reporting shall include, at a minimum, as applicable, for each test:
 - a) Sample date(s);
 - b) Test initiation date;
 - c) Test species;
 - d) End point values for each dilution (e.g., number of young, growth rate, percent survival);
 - e) NOEC value(s) in percent effluent;
 - f) IC₁₅, IC₂₅, IC₄₀ and IC₅₀ values in percent effluent;
 - g) TU_c values $\left(TU_c = \frac{100}{NOEC} \right)$;
 - h) Mean percent mortality (\pm standard deviation) after 96 hours in 100% effluent (if applicable);
 - i) NOEC and LOEC values for reference toxicant test(s);
 - j) C₂₅ value for reference toxicant test(s);
 - k) Any applicable charts; and
 - l) Available water quality measurements for each test (e.g., pH, D.O., temperature, conductivity, hardness, salinity, ammonia).
4. The Discharger shall provide a compliance summary, which includes a summary table of toxicity data from at least eleven of the most recent samples with the annual report.

The Discharger shall notify by telephone or electronically, this Regional Board of any toxicity exceedance of the limit or trigger within 24 hours of receipt of the results followed by a written report within 14 calendar days of receipt of the

results. The verbal or electronic notification shall include the exceedance and the plan the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by the permit, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

VI. Storm Water Monitoring Requirements

The following shall constitute the storm water monitoring program for the storm water discharged to the Harbor:

Constituent	Units	Type of Sample	Sampling Frequency
pH	standard units	grab	Per discharge event
BOD ₅	mg/L	grab	Per discharge event
Oil and Grease	mg/L	grab	Per discharge event
Total Suspended Solids	mg/L	grab	Per discharge event

VII. Fish Impingement

Impingement sampling for fish and commercially important macroinvertebrates shall be conducted semi-annually at the intake. Impingement sampling shall coincide with heat treatments.

Fish and macroinvertebrates shall be identified to the lowest possible taxon. For each intake point, data reported shall include the numerical abundance of each fish and macroinvertebrate species, wet weight of each species (when combined weight of individuals in each species exceeds 0.2 kg), number of individuals in each 1-centimeter size class (based on standard length) for each species and total number of species collected. When large numbers of a given species are collected, length/weight data need only be recorded for 50 individuals and the total number and total weight may be estimated based on aliquot samples. Total fish impinged per heat treatment or sampling event shall be reported and data shall be expressed per unit volume water entrained.

VIII. Receiving Water Monitoring

A. Regional Monitoring Program

1. Pursuant to the Code of Federal Regulations [40 CFR §122.41(j) and §122.48(b)], the monitoring program for a discharger receiving a NPDES permit must determine compliance with NPDES permit terms and conditions, and demonstrate that State water quality standards are met.

However, since compliance monitoring focuses on the effects of a point source discharge, this type of program is not designed to assess impacts from other sources of pollution (e.g., non-point source run-off, aerial fallout) nor to evaluate the current status of important ecological resources on a regional basis.

2. The USEPA and the Regional Board are attempting to redesign discharger monitoring programs to combine the need for compliance monitoring with the benefits of a regional program to address public health concerns, monitor trends in natural resources, and near-shore habitats, and assess regional impacts from all contaminant sources.

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

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

3. Given the apparent benefits realized by the first two regional monitoring programs, it is probable that similar comprehensive sampling efforts will be repeated for the Southern California Bight at periodic intervals (perhaps every four to five years). At the present time, it appears likely that the next regional monitoring program will be attempted during the summer of 2003.

The first two regional monitoring programs were funded in large part by negotiating resource exchanges with the participating discharger agencies. During the year when regional monitoring was scheduled, USEPA and the Los Angeles Regional Board agreed to eliminate portions of the routine compliance monitoring programs for that one year, while retaining certain critical compliance monitoring elements, and allowed these exchanged resources to be redirected to complete sampling within the regional monitoring program design. During other years, the discharger conducted the usual routine compliance monitoring program.

4. We anticipate that future regional monitoring programs will be funded in a similar

manner. Revisions to the routine compliance monitoring program will be made under the direction of the USEPA and the Regional Board as necessary to accomplish this goal; and may include resource exchanges in the number of parameters to be monitored, the frequency of monitoring, or the number, type, and location of samples collected.

5. The Receiving Water Monitoring Program in this Order is similar to that in the 1995 NPDES permit. Until such time when a regional monitoring program is developed (projected for 2003), and with the exception of future pilot regional monitoring program sampling periods, the Discharger shall perform the analyses described in the following receiving water monitoring program.

B. Receiving Water Monitoring Program

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

Location of Sampling Stations (see Attached Figure 3):

1. Receiving water stations shall be located as follows:
 - RW1** - 492 feet from the discharge point and equidistant from Berths 138 and 143.
 - RW2** - in the middle of West Basin and approximately 590 feet from the perpendicular to Berth 144.
 - RW3** - mid-channel in the entrance to West Basin, off Berth 147.
2. Benthic stations Stations B1 through B3 shall be located directly beneath Stations RW1 through RW3, respectively.
3. Trawling stations shall be located as follows:
 - STATION T1** -beginning at Station RW1 and extending toward Station RW2.
 - STATION T2** -beginning at Station RW3 and extending toward Berth 100.

C. Type and Frequency of Sampling

1. Temperature profiles shall be measured semi-annually (summer and winter) each year at Stations RW1 through RW3 from surface to bottom at a minimum of one-meter intervals. Dissolved oxygen levels and pH shall be measured semi-annually at the surface, mid-depth and bottom at each station, at a minimum. All stations shall be sampled on both a flooding tide and an ebbing tide during each semi-annual survey.
2. Sampling by otter trawl shall be conducted semi-annually (summer and winter) each year along transects at Station T1 through T2.
 - a. Trawl net dimensions shall be as follows:
 - i. At least a 25-foot throat width.
 - ii. 1.5 inch mesh-size (body).
 - iii. 0.5 inch mesh-size (liner in the cod end).
 - b. Two replicate trawls shall be conducted at each station for a duration of 5 minutes each at a uniform speed between 2.0 and 2.5 knots.
 - c. The identity, size (standard length), wet weight, and number of fish in each trawl shall be reported. The number of fish affected by abnormal growth or disease, such as fin erosion, lesions, and papillomas, shall be reported. Fish species shall be reported in rank order of abundance and frequency of occurrence for each trawl. The Shannon-Weiner diversity index shall also be computed for each trawl.
 - d. All commercially important macroinvertebrates shall be identified, enumerated, and reported in the same manner as fish species.
3. Benthic sampling shall be conducted annually during the summer at Stations B1 through B3.
 - a. Samples shall be collected with a 0.1 square meter box core_sediment grab at each of the benthic stations for biological examination and determination of biomass and diversity, and for sediment analyses. Four replicates shall be obtained at each station for benthic analyses, and each shall be analyzed separately. A fifth sample shall be collected at each station for sediment analyses and general description.
 - b. Each benthic replicate sample shall be sieved through a 0.5 mm standard mesh screen. All organisms recovered shall be enumerated and identified to the lowest taxon possible.

Infaunal organisms shall be reported as concentrations per liter for each

replicate and each station. Total abundance, number of species and Shannon-Weiner diversity indices shall be calculated (using natural logs) for each replicate and each station.

Biomass shall be determined as the wet weight in grams or milligrams retained on a 0.5 millimeter screen per unit volume (e.g., 1 liter) of sediment. Biomass shall be reported for each major taxonomic group (e.g., polychaetes, crustaceans, mollusks) for each replicate and each station.

- c. Sediment grain size analyses shall be performed on each sediment sample (sufficiently detailed to calculate percent weight in relation to phi size). Sub-samples (upper two centimeters) shall be taken from each sediment sample and analyzed for copper, chromium, nickel and zinc.
4. The following general observations or measurements at the receiving water and benthic stations shall be reported.
 - a. Tidal stage and time of monitoring.
 - b. General water conditions.
 - c. Extent of visible turbidity or color patches.
 - d. Appearance of oil films or grease, or floatable material.
 - e. Depth at each station for each sampling period.
 - f. Presence or absence of red tide.
 - g. Presence of marine life.
 - h. Presence and activity of the California least tern and the California brown pelican.
 5. During discharge of calcareous material to the receiving waters, the following observations or measurements shall be recorded and reported in the next monitoring report:
 - a. Date and times of discharge(s).
 - b. Estimate of volume and weight of discharge(s).
 - c. Composition of discharge(s).

- d. General water conditions and weather conditions.
- e. Appearance and extent of any oil films or grease, floatable material or odors.
- f. Appearance and extent of visible turbidity or color patches.
- g. Presence of marine life.
- h. Presence and activity of the California least tern and the California brown pelican.

SUMMARY OF RECEIVING WATER MONITORING				
Constituent	Units	Station No.	Type of Sample	Frequency of Analysis
Temperature	⁰ C	RW1-RW3	Vertical profile	semi-annually (flood, ebb)
Dissolved Oxygen	mg/L	RW1-RW3	Vertical profile	semi-annually (flood, ebb)
pH	pH units	RW1-RW3	Vertical profile	semi-annually (flood, ebb)
Fish and macro invertebrates		T1-T2	Trawling	Semi-annually
Benthic infaunal		B1-B3	grab	annually
Sediments		B1-B3	grab	annually
Mussels		Discharge point	Tissue	annually

The receiving water monitoring report containing the results of semiannual and annual monitoring shall be received at the Regional Board by March 15 of each year following the calendar year of data collection.

IX. Interim Monitoring

Pursuant to the California Water Code, Section 13267, the Discharger is required to submit data sufficient for: (1) determining if water quality-based effluent limitations for priority pollutants are required, and (2) to calculate effluent limitations, if required. The *Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (March 2, 2000) requires that the data be provided for three years.

Cit of Los Angeles Department of Water and Power
Harbor Generating Station
Monitoring and Reporting Program No. 2020

CA0000361

Therefore, the Discharger shall conduct the following interim monitoring program for all California Toxics Rule priority pollutants until December 2006, as per the Regional Board 13267 letter dated January 21, 2003, or until ordered by the Executive Officer.

Ordered by: _____
Dennis A. Dickerson
Executive Officer

Date: July 10, 2003