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

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
FOR
EL SEGUNDO POWER, LLC
(El Segundo Generating Station)

NPDES NO. CA0001147
PUBLIC NOTICE NO. 00 - 032

I. PUBLIC INVOLVEMENT

A. Public Comment Period

Regional Board staff requests written comments on the tentative Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) permit for El Segundo Power, LLC (El Segundo Power Generating Station) by June 5, 2000. This will give staff time to review and consider the comments, respond to them, and include the comments and response in the Board's agenda folder. Written comments received after June 5, 2000, will be submitted, ex agenda, to the Regional Board for their consideration. Comments should be submitted either in person or by mail to:

California Regional Water Quality
Control Board, Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Attn: WINNIE D. JESENA

B. Public Hearing

The Regional Board will consider the tentative NPDES permit during a public hearing on the following date, time and place:

Date:	June 29, 2000
Time:	9:00 a.m.
Location	Richard H. Chambers U.S. Court of Appeals 125 S. grand Avenue, Pasadena, California

Interested parties and persons are invited to attend.

At the public hearing, the Regional Board will hear any testimony, if any, pertinent to the waste discharges that will be regulated and the proposed permit. Oral testimony

will be heard; however, for accuracy of the record, all important testimony should be in writing.

C. Information and Copying

Copies of the tentative NPDES permit and other documents relative to this tentative permit is available at the Regional Board office for inspection and copying by appointment scheduled between the hours of 10:00 a.m. and 4:00 p.m., Monday through Friday, excluding holidays. For appointment, please call Cindy Flores at (213) 576-6633.

D. Register of Interested Persons

Any person interested in being place in the mailing list for information regarding this NPDES permit should write to the Regional Board. Attention: Vilma Correa.

E. Waste Discharge Requirements Appeals

Pursuant to California Water Code Section 13320, an aggrieved party may seek review of the Final Waste Discharge Requirements by filing a petition with the State Water Resources Control Board (State Board). A petition must be sent to the SWRCB, P.O. Box 100, 901 P. Street, Sacramento 95812, within 30 days of adoption of this Order.

II. INTRODUCTION

El Segundo Power, LLC (Discharger) operates the El Segundo Generating Station that discharges wastes under waste discharge requirements contained in Order No. 94-129, adopted by this Regional Board on December 5, 1994. This Order serves as the National Pollutant Discharge Elimination System (NPDES) permit (CA0001147). The permit was originally issued to Southern California Edison (SCE), the previous owner of the facility. El Segundo Power, LLC has filed a report of waste discharge and has applied for renewal of its waste discharge requirements and NPDES permit. The proposed waste discharge requirements and NPDES permit will expire on May 10, 2005.

FACILITY ADDRESS	MAILING ADDRESS
El Segundo Generating Station	El Segundo Power, LLC
301 Vista del Mar	301 Vista del Mar
El Segundo, CA 90245	El Segundo, CA 90245
Regional Manager: Audun Aaberg	President: Craig A. Mataczynski
Phone No.: 310-615-6342	Phone No.: 612-373-5460

III. DESCRIPTION OF FACILITY

The El Segundo Power, LLC operated the El Segundo Generating Station (Plant) since April 4, 1998. The Plant was formerly operated by SCE (from the 1950's to April 1998). The El Segundo Generating Station is located at 301 Vista del Mar, El Segundo, California and with a design capacity of 1,020 megawatts steam electric generating facility. The Plant discharges up to 607 million gallons per day (mgd) of wastes consisting of once-through cooling water from four steam electric generating units (Units 1 through 4), treated chemical metal cleaning wastes, non-chemical metal cleaning wastes, low volume wastes, stormwater runoff, and treated sanitary wastes into the Pacific Ocean (Santa Monica Bay), a water of the United States.

In the last ten years, the El Segundo Generating Station was consistently running less than its full capacity of 1,020 megawatts. In 1998, (after El Segundo Power, LLC, became the operator of the Plant) during the most demanding period between May 1 and October 31, the Plant was running at a capacity of 23% with a discharge ranging from 0 to 606 mgd. During the remaining period, the plant was running at a capacity of 9.7% with a discharge ranging from 0 to 606 mgd. In 1999, during the most demanding period, between May 1 and October 31, the plant was running at 10% to 42% of capacity with a discharge ranging from 84 to 606 mgd. During the remaining period, the plant was running from 4 % to 24 % of its full capacity with a corresponding discharge of about 40 to 502 mgd.

However, when all four Units are operating concurrently anywhere from 10% to 100% capacity, the maximum flow of 607 mgd is discharged.

To cool generating units 1 and 2, ocean water is supplied at a rate of about 144,000 gallons per minute (gpm) through a concrete conduit (10-feet inside diameter) which extends approximately 2,600 feet offshore to a depth of -30 feet Mean Lower Low Water (MLLW). The intake structure is constructed with a velocity cap that is designed to divert fish away from the intake structure. It has also screening structure that removes trash, algae, and marine organisms that enter the intake structure with the seawater. Both the intake structure and the discharge outfall are designed with a ninety-degree elbow that protrudes approximately ten to fifteen feet above the ocean floor. Thus it prevents direct disturbance onto the ocean floor during the intake seawater and the discharge of cooling water. Marine fouling of the cooling water conduits (intake and discharge) is controlled by temporarily recirculating (thus increasing the temperature) and reversing the flow of the once-through cooling water alternately in each offshore conduit (i.e., the discharge point becomes the intake point, and the intake point becomes the discharge point). This procedure (referred to as "heat treatment") is typically conducted every six (6) weeks and lasts for about six (6) hours per conduit. During the heat treatment, the high temperature last for one (1) hour and the gate adjustment last for two (2) hours per conduit's inlet and the same as the outlet on the same day. The water temperature is increased 23°F when the units are operated at full capacity. The heated water is discharged through a 10-feet

diameter conduit that terminates approximately 1,900 feet offshore at a water depth of -26 feet MLLW. During the heat treatment, the temperature of the water discharged through the intake conduit must be raised to 125^0F (except during gate adjustment) for two hours to kill the fouling organisms. During gate adjustments, the discharge temperature is allowed to reach 135^0F for no more than 30 minutes.

The cooling water system for Units 3 and 4 is separate from Units 1 and 2, but similar cooling system. The intake conduit (11-feet inside diameter) also extends 2,600 feet to a depth of -30 feet MLLW; it supplies ocean water at a rate of about 295,000 gpm. The water temperature is increased to 22°F when the units are operated at full capacity. The heated water is discharged to the ocean through Outfall No. 002 which extend about 2,100 feet offshore at a depth of about -20 feet MLLW.

Calcareous shell debris accumulates in the intake structure as a result of heat treatments. Approximately once a year, this shell debris is physically removed and disposed of into the Ocean.

To control biological growths (defouling), the condenser tubes (arranged in banks of two per generating station, each bank called condenser half) are treated by intermittently injecting chlorine, for a maximum of two (2) hours per generating unit per day, into the cooling water stream.

IV. QUALITY AND QUANTITY OF WASTES DISCHARGED AND OUTFALL DESCRIPTION

A. Outfall Description

Wastes are discharged through two outfalls, Discharge Serial Nos. 001 and 002, described as follows:

1. Discharge Serial No. 001: (Units 1 and 2) — Latitude: 33° 54' 30" Longitude: 118° 25' 50"

   Discharge Serial No. 001 consists of two conduits, each approximately 1,900 feet offshore with terminus at a depth of 20 feet Mean Lower Low Water (MLLW).

2. Discharge Serial No. 002: (Units 3 and 4) — Latitude: 33° 54' 27" Longitude: 118° 25' 50"

   Discharge Serial No. 002 consists of one conduit from approximately 2,100 feet offshore with terminus at a depth of 20 feet MLLW.

B. Waste Characteristics

The wastes discharged consist of: condenser cooling water, and boiler blowdown from Units 1 to 4; treated chemical metal cleaning wastes from Units 1 to 4; non-chemical metal

cleaning wastes (boiler fireside and air preheater); treated sanitary wastes from wastewater treatment plants; hydrostatic test wastes; floor drains from the four generating units; condenser sump wastes from generating units 1 and 2; and small amounts of storm water run-off. Table 1 shows the summary of the waste characteristics.

The chemical metal cleaning wastes from all the units are collected in portable storage tanks and treated to remove metals through a contractor-owned mobile lime treatment unit. The contractor maintains a tiered treatment unit (TTU) permit from the Department of Toxic Substances Control that allows for treatment of hazardous wastes on-site. The chemical metal cleaning operations and discharge of wastes occurs every two years per generating Unit, and the duration of discharge is normally thirty-six to forty-eight hours. The treated metal cleaning wastes and other low volume wastes are stored in a retention basin prior to discharge to the Pacific Ocean through Discharge Serial No. 002.

Storm water runoff (within the facility) and floor drain wastes are passed through oil/water separators before combining with the cooling water and treated sanitary wastes prior to discharge to the Pacific Ocean through Discharge Serial Nos. 001 and 002. However, stormwater runoff from upslope of the facility flows into an easement conveyance then to the beach.

Sanitary wastes are treated in two aerobic digestion treatment package (Wastewater Treatment Plant Nos. 1 and 2) prior to discharge through Discharge Serial Nos. 001 and 002, respectively.

Residues in the basins, pretreatment wastes, and oil sludges from oil/water separators are periodically hauled away to legal disposal sites.

L E F T B L A N K I N T E N T I O N A L L Y

TABLE 1
Outfalls and Nature of Wastes Discharged

Discharge Serial No.	001	002
Generating Units Served	1 & 2	3 & 4

Diameter		10 feet	11 feet
Distance Offshore (ft)		1,900	2,100
Depth of Terminus, (ft below Mean Lower Low Water)		20	20
Latitude		33° 54' 30"	33° 54' 27"
Longitude		118° 25' 50"	118° 25' 50"
Maximum Temperature, (°F)	Winter (Oct. to April)	79	86
	Summer (May to Sep.)	88	100
	Heat Treatment/Gate Adjustments	125/135	125/135
Waste Streams (mgd)	Once-through Cooling Water	207.00	398.00
	Chemical Metal Cleaning Wastes[1] (units 1-4)		0.06
	Low Volume Wastes[1]		
	• Floor Drain Wastes		0.10
	• Boiler Blowdown	0.013 (Units 1& 2)	0.013 (Units 3&4)
	• Fireside and Air Preheater Wastes		0.6
	• Fuel Pipeline Hydrostatic Test Water		0.8
	• Condenser Sump		0.015
	• Storm water Run-off	Negligible	Negligible
	• Chemical Laboratory Drains		Negligible
	Secondary Treated Sanitary Waste	0.001 (Plant 1)	0.001 (Plant 2)
Total Maximum Flow, MGD		207.01	399.59

[1] These flows are intermittent. The discharge frequencies for these waste streams are listed in Table 2

Table 2
Waste Streams Characteristics

Waste Stream	Discharge Frequency	Volume (Daily Maximum)
Boiler blowdown (Units 1 & 2)	Three times per week when units are	145,000

	running (approximately 8 months per year) and last for one hour per unit..	
Boiler blowdown (Units 3 & 4)	Once per week when units are running (all year) and last for one hour per unit.	230,000
Fireside & air preheater washes (Units 1-4)	Four times per year and last approximately 16 hours.	---
Metal Cleaning Wastes (Units 1-4)	Every two years and normally last for 36 to 48 hours.	120,000
Fuel pipeline hydro-static test water	Seasonal and last for approximately four hours.	800,000

V. BASIS FOR PROPOSED WASTE DISCHARGE REQUIREMENTS

A. Beneficial Uses of Receiving Water

The Santa Monica Bay watershed includes the Santa Monica Bay and the land area that drains naturally into the Bay. It is located in the Los Angeles Coastal Plains and has nine sub-watershed areas that are grouped from 28 catchment basins based on their distinctive geographical (topographical and land use) characteristics.

The El Segundo Generating Station is located in the EL Segundo/LAX area sub-watershed. The El Segundo/LAX area sub-watershed extends from Playa del Rey to the north, Westchester, the Los Angeles International Airport (LAX) area of the City of Los Angeles, the City of El Segundo, and a small portion of the City of Manhattan Beach to the south.

The Regional Board has designated several beneficial uses for water bodies in the Santa Monica Bay Watershed and sub-watersheds. The major beneficial uses identified for the El Segundo/LAX sub-watershed area are use of seawater as industrial cooling water for power generation, use of the Bay to transport crude and refined petroleum, and use of seawater for swimming, boating, and sport fishing.

The beneficial uses designated for water bodies in the EL Segundo/LAX sub-watershed are:

(Dockweiler Beaches - Hydrologic Unit 405.12)

- potential: spawning, reproduction, and/or early development;

- existing: industrial service supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, and wild habitat;

(Nearshore Zone)

- existing: industrial service supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, wild habitat, preservation of biological habitats, rare, threatened, or endangered species, and migration of aquatic organisms;

(Offshore Zone)

- existing: industrial service supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, wild habitat, migration of aquatic organisms, and spawning, reproduction, and/or early development;

B. Water Quality in Santa Monica Bay Watershed

The 1998 California 303(d) List, approved by the USEPA on May 12, 1999, identified the following pollutants of concern for Santa Monica Bay (Offshore and Nearshore and Dockweiler Beach): dichloro-diphenyl trichloroethane (DDT), polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), chlordane, tributyltin (TBT), heavy metals (cadmium, chromium, copper, lead, mercury, nickel, silver, zinc), debris, beach closures and high coliform count.

The *Santa Monica Bay Restoration Plan (SMBRP)* (1994) identified the pollutants of concern for the El Segundo/LAX sub-watershed area to include pathogens, debris, heavy metals (cadmium, chromium, copper, lead, nickel, silver, zinc), oil and grease, and PAHs .

C. Statutes, rules, and regulations applicable to discharge:

1. Effluent limitations, toxic, and effluent standards, established pursuant to Section 301, 302, 303(d), 304, 306, 307, 316, and 423 of the Federal Clean Water Act (CWA) and amendments thereto.

2. Section 316(b) of the CWA requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impacts. The U.S. Environmental Protection Agency (USEPA) is in the process of promulgating specific requirements for intake structures.

3. Division 7 of the California Water Code is applicable to discharges to navigable water and tributaries thereto.

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

5. 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.

   Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan), adopted on May 18, 1972 which was amended on September 18, 1975. The Thermal Plan contains temperature objectives for the Pacific Ocean. The narrative objectives of the Thermal Plan state that elevated temperature of wastes discharged shall comply with limitations necessary to assure protection of the beneficial uses.

6. The State Board revised Water Quality Control Plan for the Ocean Waters of California (Ocean Plan), adopted on July 23, 1997. The revised plan contains water quality control objectives for the coastal waters of California.

7. On June 13, 1994, the Regional Board adopted a revised Water Quality Control Plan for the Los Angeles River Basin (Basin Plan). The Water Quality Control Plan incorporates by reference State Board' s water quality control plans for Ocean waters. The Basin Plan also identifies water quality objectives and beneficial uses for the Santa Monica Bay.

8. Pursuant to Section 402(p) of the CWA 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 adopted on April 17,1997). Stormwater discharges from power plants are subject to requirements under this general permit.

9. Resolution No. 88-80, Exception to Ocean Plan for Total Residual Chlorine Limitations, SWRCB, July 21, 1988.

10. U.S. EPA Antibacksliding Policy, (CWA Section 402(o)(2).

11. The Water Quality Task Force recommendation on the use of performance goal rather than performance-based limits when appropriate.

D. Specific Rationales for the Numerical and Narrative Effluent Limitations:

1. Temperature Limitations

   I.A.2. of the Order - Based on Thermal Plan objectives.

   The limitations for temperature of wastes discharged are:

   a) 105^0F during normal operation of the facility;
   b) 125^0F during heat treatment, except during adjustment of the recirculation gate at which time the temperature limit is 135^0F. Temperature fluctuations during gate adjustment above 125^0F shall not last for more than 30 minutes.

   The 1990 and 1994 permit contained a heat treatment limit of 110^0F. However, the 1985 permit (Order No. 85-35, adopted on June 24, 1985, amending Order No. 84-113) included temperature limits during heat treatments of 125^0F, and 135^0Fduring gate adjustments. It appears that the changed of the heat treatment limits from 125^0F to 110^0F was a typographical error that went unnoticed by both SCE and the Regional Board because there were no records of discussions between the SCE and Regional Board regarding the changes during the renewal of the permit. Further indication that this change was an error was that the two adjacent generating stations, Redondo Generating Station, approximately 4 miles south of El Segundo, and Los Angeles Department of Water and Power, Scattergood Generating Station, approximately 1100 yards north of El Segundo, have 125^0F and 135^0F heat treatment limits, respectively, in their NPDES permits.

   The anti-backsliding provisions of the CWA §402(o)(1), generally prevent the renewal, re-issuance or modification of an NPDES permit with effluent limitations less stringent than those contained in the previous permit. However, pursuant to §402(o)(2)(B)(ii) of the CWA, allows modifications to the permit even if it contains less stringent effluent limitations than those contained in prior permit for " technical mistakes … made in issuing the permit...". As such, this Order contained heat treatment limit of 125^0F that is less stringent than the prior permit.

   In compliance with the Thermal Plan and in accordance with Regional Board specifications, the SCE conducted a thermal effect study that was completed in 1975. The study demonstrated that wastes discharges from the power plant were in compliance with the Thermal Plan and beneficial uses of the receiving waters are protected, as required by Section 316(a) of the CWA. Thus the power plant with temperature discharges prescribed in the Order is in compliance with the Thermal Plan.

2. Formula for the calculation of effluent limitations (Table B, Ocean Plan, 1997), except Radioactivity:

   $Ce = Co + Dm(Co-Cs)$

Where: Ce - the effluent concentration limit

Co - the concentration to be met at the completion of initial dilution

Dm - minimum probable initial dilution expressed as parts seawater per part wastewater (12 and 18 for 001 and 002, respectively)

Cs - background seawater concentration (see below)

BACKGROUND SEAWATER CONCENTRATIONS (Cs)

Waste Constituents	Cs (µg/l)
Arsenic	3
Copper	2
Mercury	0.0005
Silver	0.16
Zinc	8

Note: For all other parameters in Table B of the Ocean Plan, Cs = 0

The effluent limitations for Discharge Serial Nos. 001 and 002 are calculated based on the above formula:

a. Effluent Limitations for Discharge Serial No. 001

Maximum flow – 207 mgd

The effluent limits in I.A.4.a. of the Order were based on the 1997 Ocean Plan objectives using a dilution ratio of **12** parts of seawater to 1 part effluent. The dilution factor was based on calculations made by SCE and was approved by the State Board.

b. Effluent Limitations for Discharge Serial No. 002

Maximum flow - 399.72 mgd

The effluent limits in I.A.4.b. of the Order were based on 1997 Ocean Plan objectives using a dilution ratio of **18** parts of seawater to 1 part effluent (based on the same memorandum as for Discharge Serial No. 001).

However, since the discharges contain predominantly once-through cooling water that should have the same quality as seawater, this Regional Board will pursue the possibility of setting effluent limitations for metals using the Ocean Plan numerical objectives without the benefit of dilution ratios and may only provide intake water credits in future permits.

The dilution credits were approved by the State Board with the concurrence of the USEPA. Since the State Board approved the dilution credits, the Regional Board will make a formal request to the State Board to review the dilution credits for the Power Plants.

5. For toxic constituents regulated in the Ocean Plan (Table B) which the Discharger does not add into or produced in the treatment process and/or waste streams, no numerical limits are prescribed. Also, no numerical limits are prescribed for toxic constituents which are added but usage has been determined that there is very low probability of causing or contributing to excursions in the water quality standards. However, a narrative limit to comply with all Ocean Plan objectives is provided.

   Historical monitoring data of the toxic pollutants are mainly non-detects. Thus, there is no reasonable potential. However, the Order prescribed effluent limitations for metals and toxicity to protect beneficial uses of the receiving waters. Priority pollutants will be monitored in the low volume wastes on a quarterly basis during the first two years of the permit and thereafter, it will be annually.

6. In accordance with Federal and State guidelines, SCE conducted a study (completed in 1982) that addressed the important ecological and engineering factors specified in Section 316(b) guidelines. The study demonstrated that the ecological impacts of the intake system were of an environmentally acceptable order, and provided sufficient evidence that no modification for the location, design, construction or capacity of the existing systems was required. The design, construction, and operation of the intake structure was then considered Best Available Technology Economically Achievable (BAT) as required by Section 316(b) of the CWA.

7. Chlorine Limitations

   a. At times of peak demand during defouling treatment, total residual chlorine (TRC) levels in the once-through cooling water have exceeded effluent limitations based on 40 CFR Part 423 guidelines (BAT limitations of 0.20 mg/l), and 1983 CA Ocean Plan objectives (0.533 mg/L and 0.780 mg/L) for Discharge Serial Nos. 001 and 002, respectively). The current Ocean Plan Objectives are more stringent. However, chlorination bioassay studies (1988) performed by the Discharger

showed no significant adverse impact on the receiving waters as a result of the discharge from the plant.

b. In 1983, SCE submitted an application for a variance under Section 301(g) of the CWA from BAT requirements for TRC. In 1984, SCE also applied for variance for TRC limitations from the 1983 Ocean Plan Objectives. On June 24, 1985, the Regional Board adopted Order No. 85-35 which amended the discharge limitation for TRC based on the 1983 Ocean Plan objectives and forwarded the Order to the State Board for concurrence. On May 22, 1986, the State Board granted a temporary exception (Resolution No. 86-42) from the TRC limitations. The temporary exception required further toxicity testing. In 1987, the SCE and the 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 at the other generating stations: a shoreline discharger (Haynes Generating Station); an open coast discharger (Scattergood Generating Station); and harbor discharger (Long Beach Generating Station). Based on this study, on July 21, 1988, the State Board adopted Resolution No. 88-80 which grants a permanent exception to the 1983 CA Ocean Plan for TRC and the TRC effluent limitations applicable to Outfall Nos. 001 and 002 are 0.574 mg/L and 0.820 mg/L, respectively. On August 8, 1988, the State Board requested the U.S. EPA to concur with the Resolution. February 15, 1989, the U.S. EPA concurred with the exception of the CA Ocean Plan. Since the Resolution 88-80 granted a permanent exception to the Ocean Plan effluent limitation equation and specifically set forth alternate effluent limits for TRC, the **alternate effluent limits remain in effect even though the Ocean Plan was subsequently amended in 1990.** [The 1990 Ocean Plan contained a revised equation [$\log(y) = -0.43(\log x) + 1.8$] for calculating the water quality objectives applicable to intermittent discharges of chlorine, making the objectives more stringent – The calculated TRC limitations based on the 1990 CA Ocean Plan were 0.190 mg/L and 0.278 mg/L for Discharge Serial Nos. 001 and 002, respectively].

The current NPDES permit reissued in December 5, 1994, and the previous permit issued in February 1990, included the alternate limits (0.574 mg/L and 0.820 mg/L for Outfall Nos. 001 and 002, respectively) for TRC.

c. In May 1996, the U.S. EPA approved the Discharger's request for a variance from BAT for TRC pursuant to Section 301(g) of the CWA with the following conditions:

- The effluents from Discharge Serial Nos. 001 and 002 must meet an alternate proposed modified effluent limitations (PMEL) of 0.4 mg/L TRC (instantaneous maximum) based on daily sampling at Discharge Serial Nos. 001 and 002 during periods of chlorination.

- The effluent from Discharge Serial Nos. 001 and 002 must meet chronic toxicity daily maximum limits of 13 and 19 Tuc, respectively. The chronic

toxicity test must be representative of actual discharge conditions (at a minimum) or of the alternate PMEL of 0.4 mg/L. 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 3 months' chlorination events. This requirement to chlorinate samples in the laboratory applies only if the recorded affluent chlorine concentrations exceed the BAT limit of 0.2 mg/L during the previous 3 months.

- In the event the effluent chronic toxicity limitations are exceeded at either Discharge Serial Nos. 001 and 002, the Discharger shall increase the monitoring frequency at the subject outfalls to monthly in accordance with the NPDES permit. If the chronic toxicity limit is exceeded again during the accelerated monitoring period, the Discharger shall conduct a toxicity reduction evaluation (TRE). The TRE shall be conducted in accordance with U. S. EPA's most current TRE/toxicity identification evaluation (TIE) manuals.

- The Discharger shall conduct a chlorine residual receiving water study, as set forth in the NPDES permit (December 5, 1994), in order to assess the impacts of chlorine and chlorine by-products within the receiving waters during periods of maximum chlorination.

- The variance can be reviewed and revised by U.S. EPA at any time if subsequent information indicates that the alternate PMEL will not results in compliance with all 301(g) criteria. This information includes but not limited to subsequent chronic toxicity test results, receiving water monitoring data, and TIE/TRE findings indicating that the discharge of TRC at concentrations greater than the BAT limit is of 0.2 mg/L results in toxicity limit.

d. Before exercising the 301(g) variance, in 1996, the Discharger conducted chronic toxicity testing of effluent samples artificially spiked with chlorine in the laboratory for both the BAT level (0.2 mg/L) and the maximum chlorine level (0.4 mg/L) allowed by the 301(g) variance. The toxicity levels did not differ between the BAT and 301(g) spiked samples (3.25 TUc) and were below the Ocean Plan based limits of 13 and 19 TUc for Discharge Serial Nos. 001 and 002, respectively. In 1997 to 1999, the Discharger's average exceedance of the BAT limit was twice a month based on daily monitoring.

   In 1987 in coordination with the City of Los Angeles Department of Water and Power, SCE conducted a study on the concentrations of chlorine measured in the receiving water during chlorination of the condensers. The study was done in response to State Board's concerns prior to the issuance of State Board's Resolution 88-80 (see item D.7.b. above). The study showed that chlorine was not detected outside the zone of initial dilution during a chlorination event.

Based on the 1996 chronic tests results, the infrequent exceedance of the BAT limit for TRC, and findings of the 1987 study on chlorine concentrations in the receiving water (mentioned in paragraph 2, item 7.d. above), the receiving water study on the impact of chlorine discharge required in the December 5, 1994 permit was determined to be no longer necessary.

e. In accordance with the December 5, 1994, NPDES permit (Footnote No. 3., item II.A.1., Monitoring and Reporting Program CI- 4667), the Discharger conducted a study on November 23, 1994, to determine the time during the chlorination cycle that the peak residual chlorine concentration in the ocean discharge to ensure that compliance monitoring samples for TRC were collected at the time of highest chlorine level in the stations' combined effluent. The study indicated that the maximum (peak) levels of chlorine in the effluent occurred about 35 minutes from the start of chlorination. After the study, the Discharger modified their sampling procedures in accordance with the above-mentioned results to ensure that compliance monitoring samples are collected at or near (within few minutes of) the time peak chlorine levels in the effluent.

However, subsequent to the testing done by the Discharger from the end of March to June 2000 indicates that at Discharge Serial No. 001, the highest chlorine level occurs between 20 to 30 minutes from the start of chlorination and at Discharge Serial No. 002, the highest chlorine level occurs between 25 to 35 minutes from the start of chlorination. The peak chlorine level can vary from day to day.

The monitoring data reported over the past five years of the permit (March 1995 to October 1999) showed five exceedances of the total residual chlorine (EPA's approved variance of 0.4 mg/L - daily maximum), and one free available chlorine (daily maximum) for Discharge Serial No. 001. The exceedances occurred on June and July 1996, and January 1998 for total residual chlorine), and January 1998 for free available chlorine. There were no exceedances reported for Discharge Serial No. 002.

8. Effluent Limitations for Inplant Waste Streams

I.A.6a, 6b, and 6c. - Based on 40 CFR Part 423, Effluent Limitation Guidelines and Standards for Steam Electric Power Generating Point Source Category, July 1, 1990, Edition.

9. Toxicity

The chronic toxicity limit specified in the existing permit (1994) 13 TU_c and 19 TU_c for outfall Nos. 001 and 002, respectively and were based on the Ocean Plan. There were no exceedances of the chronic limits during the period of 1995 to 1999.

Acute toxicity monitoring conducted over the past five years (1990 through 1994) demonstrated consistent compliance with, and no reasonable potential for exceeding the Ocean Plan objectives. Therefore, no numerical limits are prescribed for acute toxicity after 1994. However, a narrative limit to comply with all ocean Plan objectives is provided.

10. Radioactivity

Radioactivity limitations are based on Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269 of the California Code of Regulations.

11. Performance Goals

Since 1994, the Regional Board has implemented the Water Quality Task Force recommendation on the use of performance goals rather than performance-based limits, when appropriate (*Working Together for an Affordable Clean Water Environment*, A final report presented to the California Water Quality Control Board, Los Angeles Region by Water Quality Advisory Task force, September 30, 1993). The use of performance goals is intended to minimize pollutant loading while at the same time maintaining the incentive for future voluntary improvement of water quality wherever feasible without fear of being punished with more stringent limits based on improved performance.

However, since the discharge is predominantly once-through cooling water for which the Discharger has no control over the quality, except for chlorine and temperature, performance goals are not appropriate. Therefore, no performance goals are prescribed in the Order.

E. Receiving Water Limitations

The Ocean Plan sets forth narrative physical characteristics and chemical characteristics for ocean waters in terms of floating particulates, visibility of oil and grease, discoloration of ocean surface, quality of discharge at the dilution zone, sediments quality for benthic communities, a change in pH and dissolve oxygen, concentration of organic materials in marine sediments, and discharge of other materials that shall degrade aquatic growths or indigenous biota.

The Ocean Plan provides general requirements for management of waste discharge to the ocean including an alternative water quality objectives on chronic toxicity to provide adequate protection for the marine environment.

VI. MONITORING PROGRAM

A. Intake Cooling Water Monitoring

The Order prescribes monitoring requirements for metals in the intake cooling water on a semi-annual basis.

The monitoring for metals were added because in calculating the limits based on the Ocean Plan, the background concentration has to be factored into the formula.

B. Effluent Monitoring

There is no change of the frequency of the effluent monitoring. However, fecal coliform, total coliform, and enterococci were added in the effluent monitoring for Discharge Serial Nos. 001 and 002. These pollutants were added because the results of monitoring for the period from 1995 to 1999 showed high concentrations of fecal and total coliform at the sanitary waste streams. In addition, this would assess the impact of the discharge to the beneficial uses of the receiving waters.

As to the influent monitoring, it seems that they have accepted it. the reason we gave is that in calculating the limits based on the Ocean Plan, the background concentration has to be factored into the formula.
Priority pollutants were added to the inplant waste monitoring because in the SMBRP Bay plan, the Regional Board is given the task to implement mass emissions approach. Monitoring the effluent gives nondetects because of over 500 dilution with cooling water, calculation of mass emission limits are difficult and inappropriate. And since the inplant waste streams contains the pollutants generated in the power plants, mass emission limits could be calculated.

Priority pollutants will be monitored in the low volume wastes on a quarterly basis during the first two years of the permit and thereafter, it will be annually.

C. Receiving Water Monitoring

a. Regional Monitoring Program

The U.S. Environmental Protection Agency and the Los Angeles Regional Water Quality Control Board are attempting to redesign the Discharger's 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).

b. Receiving Water Monitoring

There was no change of the receiving water monitoring for Fish and macro-invertebrates. The results of the ranking of the most abundant species for the last ten-year monitoring periods showed that at least nine of the 20 most abundant species have occurred among the 20 most abundant species during each year. All twenty were present in 1999 and 18 of these species occurred in every year since 1990. This recurring core group of species demonstrates stability of the community and suggests that the populations present offshore are not unduly stressed by the relatively minor loss due to entrainment.

VII. STORM WATER MONITORING AND REPORTING

Staff proposes that the Storm Water Monitoring and Reporting Program be implemented by the Discharger.