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ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

I. Permit Information

Table F-1 summarizes administrative information related to the facility.

Table F-1. Permit Information

WDID	9 000000092
Discharger	Cabrillo Power I LLC
Name of Facility	Encina Power Station
Facility Address	4600 Carlsbad Boulevard
	Carlsbad, CA 92008
	San Diego County
Facility Contact, Title and Phone	Gregory J Hughes, Regional Plant Manager, (760) 268-4011
Authorized Person to Sign and Submit Reports	Gregory J Hughes, Regional Plant Manager, (760) 268-4011
Mailing Address	SAME
Billing Address	SAME
Type of Facility	Industrial, SIC #4911
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	N
Reclamation Requirements	N/A
Facility Permitted Flow	863.5 mgd
Facility Design Flow	863.5 mgd
Watershed	
Receiving Water	Pacific Ocean
Receiving Water Type	Marine

A. Cabrillo Power I LLC (hereinafter Discharger) is the owner of Encina Power Station (hereinafter Facility) a steam electric generating facility, located in the City of Carlsbad, California, adjacent to the Agua Hedionda Lagoon on the Pacific Ocean. The Encina Power Station is located in Section 18, T12S, R4W, SBBM.

B. The Facility discharges wastewater to the Pacific Ocean, a water of the United States and is currently regulated by Order No. 2000-03 which was adopted on February 9, 2000 and expired on February 8, 2005. The terms of the existing Order automatically continued in effect after the permit expiration date.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on June 23, 2004. The Discharger submitted supplemental information regarding an impingement mortality and entrainment study on September 9, 2004.

II. Facility Description

A. Description of Wastewater Sources, Treatment and Controls

The Encina Power Station is a fossil-fueled steam electric power generating station comprised of five steam turbine generators and one gas turbine generator for a total maximum generating capacity of 939 megawatts. Table F-2 lists the generating capacity for each unit and the date the unit began operating. Natural gas is the primary fuel with fuel oil used for power generation during peak capacity or emergency periods. Once-through cooling water is withdrawn from the Pacific Ocean via the Agua Hedionda Lagoon at a maximum rate of 857.3 million gallons per day (mgd). A single cooling water system serves the five steam generating units; the gas turbine is air-cooled.

Table F-2. Generating Capacity

Generating Unit	In-service Year	Net Generating Capacity (MWe)
Unit 1	1954	107
Unit 2	1956	104
Unit 3	1958	110
Unit 4	1973	287
Unit 5	1978	315
Gas Turbine	1968	16

The Discharger's Report of Waste Discharge indicates that a maximum of approximately 863 mgd of wastewater is discharged through Discharge Point 001. Internal discharge point designations (001-A through 001-H) are based on the discrete location at which the in-plant waste stream discharges to the main waste stream. The discharges from Encina Power Station are made up of the cooling and in-plant waste streams specified in Table F-3.

Table F-3. Discharge Points and In-plant Waste Streams

Discharge Point	Wastewater Discharge*	Maximum Flow (mgd)
001	**Once-through (non-contact) cooling water**	**857.3**
001	(a) Condenser cooling	--
001	(b) Cooling water pump lubrication and seal water	--
001	(c) Cooling water pump lubrication and seal water pretreatment backwash	--
001	(d) Salt water heat exchanger	--
001	(e)Traveling screen backwash water	--
001	(f) Tunnel and forebay cleaning	--
001	(g) Hypochlorinator bearing cooling water	--
001-A	**Metal cleaning wastes**	**0.7971**
001-A	(a) Boiler chemical cleaning	--
001-A	(b) Hypochlorinator chemical cleaning	--
001-A	(c) Evaporator chemical cleaning	--
001-A	(d) Air heater wash	--
001-A	(e) Boiler fireside wash	--
001-A	(f) Selective catalytic reduction wash	--
001-B	**Seepage and groundwater pumping**	**1.368**
001-C	**Boiler blowdown**	**0.372**
001-D	**Freshwater reverse osmosis brine**	**0.087**
001-E	**Seawater reverse osmosis brine**	**0.864**
001-F	**Fuel Line/Tank hydrotests**	**0.900**
001-G	**Poseidon pilot desalinization plant**	**0.288**

Discharge Point	Wastewater Discharge*	Maximum Flow (mgd)
001-H	**Low volume waste treatment facility (LVWTF)**	**0.2115**
001-H	(a) Evaporator blowdown	--
001-H	(b) Sample drains	--
001-H	(c) Floor drains	--
001-H	(d) Demineralizer regenerants	--
001-H	(e) Softeners	--
001-H	(f) Condenser cleaning	--
001-H	(g) Sand filter backwash	--
001-H	(h) Portable demineralizer rinse flush	--
001-H	(i) R.O. Membrane cleaning	--
001-H	(j) Salt water heat exchanger drains	--

*Bold entries indicate discrete discharge points and may represent an aggregate of the contributing waste streams listed below.

Over the previous four years, the Encina Power Station has reported combined discharge flows ranging from 99.8 mgd to 794.9 mgd with a daily average of 600.4 mgd. Most of the combined discharge consists of once-through cooling water, with low volume wastes contributing an average of only 0.121 mgd and with no metal cleaning waste having been discharged in the last four years. Domestic wastewater is discharged to the municipal sewer system for treatment and disposal. Attachment C contains a water balance diagram containing the configuration and maximum flow rates for each waste stream.

1. **Cooling Water System and Associated Wastes (Discharge Point 001)**

Cooling water is withdrawn from the pacific Ocean via the Agua Hedionda Lagoon. The cooling water intake structure complex is located approximately 2,200 feet from the ocean inlet to the lagoon. Variations in the water surface level due to tide are from a low of -5.07 feet to a high of +4.83 feet (elevation 0 = mean sea level, or msl). The intake structure is located in the lagoon approximately 525 feet in front of the generating units.

The mouth of the intake structure is 49 feet wide. Booms are situated in the lagoon across the front of the intake structure to screen floating debris. Water passes through metal trash racks (vertical bars spaced 3-1/2 inches apart) to screen large debris. The intake forebay tapers into two 12-foot wide intake tunnels. From these tunnels, water enters one of four 6-foot wide conveyance tunnels. Cooling water for conveyance tunnels 1 and 2 passes through two vertical traveling screens to prevent fish, grass, kelp, and debris from entering intakes 1, 2, and 3. Conveyance tunnels 3 and 4 carry cooling water to intake 4 and 5, respectively. Vertical traveling screens are located at the intakes of pump 4 and pump 5.

Each pump intake consists of two circulating water pump cells and one or two service pump cells. During normal operation, one circulating water pump serves each half of the condenser, i.e. when a unit is on line, both pumps are in operation.

Seven vertical traveling screens remove any fish or debris that has passed through the trash racks. The screens are conventional through-flow, vertically rotating, single entry-single exit, band-type screens and are mounted in the screen wells of the intake channel. Each screen consists of a series of baskets or screen panels attached to a chain drive. The screening surface is made of 3/8-inch stainless steel mesh panels, with the exception of the Unit 5 screens, which have 5/8-inch square openings. The screens rotate automatically when the buildup of debris on the screen face causes the water level behind the screen to drop below that of the water in front of the screen and a predetermined pressure differential is reached. The screens rotate at a speed of 3 feet per minute, making one complete revolution in approximately 20 minutes. A screen wash system, using sea water from the intake tunnel, washes the debris from the traveling screen into a debris trough. Accumulated organic debris is discharge to Discharge Point 001.

The condensers are a shell-and-tube arrangement in which heat is transferred from the turbine exhaust steam to the circulating (cooling) water. Units 1, 2, and 3 have two-pass condensers (water enters the bottom, passes through the condenser twice, and exits the top). The tubing, made of No. 18 BWG aluminum-brass, has a 30-foot length and a 1-inch outside diameter. The condensers for Units 4 and 5 are a single-pass design. The tubing is No. 20 BWG copper-nickel with a 36-foot length and 1 and 1/8-inch outside diameter.

Wastewater discharges associated with the operation of the cooling water system discharge directly to Discharge Point 001 without additional treatment.

a. Cooling Water Pump Lubrication and Seal Water Pretreatment Backwash

The circulating water pumps have bronze bearings that are sealed and lubricated with either seawater or fresh water. Where seawater is used, it must first be filtered to prevent solids from reaching and damaging the bearings. Filtration of the seawater is accomplished using small microfiltration units. These units are designed to automatically backwash every hour to remove the accumulated solids from the filtering media. The backwash water is routed to the once-through cooling water system.

b. Salt Water Heat Exchanger Cooling Water.

Once-through cooling water is used to cool facility equipment in addition to condensing steam. Cooling of facility equipment is accomplished through the use of auxiliary heat exchanger systems that use salt water to cool a closed-loop “service water” system that is piped throughout the facility to cool equipment. There are four heat exchange systems with each system comprised of two individual heat exchangers. Normally, only one heat exchanger is used at a time. Under certain operating conditions, however, both heat exchangers in a system may operate at the same time. The once-through cooling water used in the heat exchangers is discharged to the main once-through cooling water discharge tunnel.

The salt water condenser leaks intermittently and infrequently. When leaks do occur, however, they can cause significant operational problems and increase the frequency of boiler chemical cleanings. The Discharger uses alfalfa (or other acceptable materials approved by the Executive Officer) to temporarily plug leaks to allow the unit to function until such time as the system can be removed from service for repair.

c. Traveling Screen Backwash Water

Traveling screens are used to remove small debris from the cooling water stream that could otherwise interfere with the heat exchange process in the condenser tubing. As each screen is rotated, a high-pressure spray washes any accumulated debris off the screen face into debris baskets. Water for the high-pressure spray is pumped from the once-through cooling water flow to the spray heads. The water that removes the debris drains through the baskets and screen panels and re-enters the once-through cooling water flow. Organic debris removed from the screens is discharged to the discharge channel.

d. Tunnel and Forebay Cleaning

Over time, sediment from the Agua Hedionda Lagoon and shells from encrusting organisms that grow on the tunnel walls can accumulate in the facility's cooling water intake tunnels and forebays to an extent that it threatens to restrict the flow of cooling water to the units during low tide conditions. Cleaning of the cooling water tunnels and pump forebays is conducted periodically to remove the accumulated debris. Because tunnel/forebay cleaning is normally conducted during a unit overhaul, only the tunnel or forebay for the unit removed from service is cleaned at a given time. Tunnel/forebay cleaning for an individual unit is conducted approximately once every one to three years. Water from the tunnel/forebay being cleaned is pumped to the cooling water discharge tunnel. Resulting materials from the cleaning process are discharged to either the cooling water discharge tunnel of to the cooling water discharge pond.

e. Hypochlorinator DC Rectifier Cooling Water

The Discharger produces its own sodium hypochlorite for use in chlorinating the cooling water system. Make-up water is drawn from the once-through cooling water stream and passed through the DC rectifier. A small volume of once-through non-contact cooling water is used to cool the DC rectifier and is discharged to the cooling water system. This cooling water stream runs continuously only when the rectifier is in operation. When all cooling pumps are in operation, the hypochlorinator generator runs approximately 85-100% of the time.

2. **Metal Cleaning Wastes (Discharge Point 001-A)**

All wastewaters from metal cleanings and washings are collected in one or both of the wastewater receiving tanks that comprise the Metal Cleaning Treatment Facility (MCTF). They are then neutralized, flocculated, chemically precipitated and filtered to remove metals and solids and routed to wastewater tanks, where they are held for testing prior to discharge. When the MCTF effluent is deemed compliant with all applicable effluent limitations, the treated wastewater is discharge to the once-through cooling system. Discharges normally occur daily during the processing of wastewater from metal cleanings and washes. The sludge generated by the treatment process is dewatered using a filter press and disposed of in a landfill permitted to receive such wastes. Metal cleaning wastes are generated from the following processes:

a. Chemical Cleaning

Boiler tube waterside cleanings are performed using either a dilute acid solution or an organic chelant-based cleaning solution. The boiler to be cleaned is drained of the water it contains and filled with fresh water, then fired to heat the water and metal up to treatment temperature. When the required temperature is attained, a "fast drain" is performed. The warm water is pumped back into the boiler with the chemicals mixed into the water during pumping. At this point, the boiler is allowed to sit for six hours with the cleaning solution inside. The temperature is monitored so that if the system cools too quickly it can be drained sooner. After the treatment process, another "fast drain" is performed, followed by several rinse cycles. The third rinse typically contains citric acid, while the final volume of water contains phosphate and sodium hydroxide as neutralizing agents. Chemical cleaning discharges to the MCTF normally occur daily during the cleaning process, with the treated wastes discharged to the once-through cooling system over the course of two to four weeks. An individual unit's boiler is typically cleaned once every six to seven years. Conditions may occur, however, that require more frequent cleaning.

b. Air Heater Wash

Air heater and air pre-heater fireside washes are performed to remove soot and accumulated combustion by-products from metal surfaces in order to maintain efficient heat transfer. These washes are accomplished by spraying high-pressure municipal water against the surfaces to be cleaned. The resulting wastewater contains an assortment of dissolved and suspended solids with loadings and constituents that are dependent on the nature and quality of the fuel and metals from corrosion of the heater. Air heater wash discharges to the MCTF normally occur daily during the cleaning process, with the treated wastes discharged to the once-through cooling system over the course of two to four weeks.

c. Boiler Wash

Boiler tube fireside washes are performed to remove soot and accumulated combustion by-products from metal surfaces in order to maintain efficient heat transfer. These washes are accomplished by spraying high-pressure municipal water against the surface to be cleaned. The resulting wastewater contains an assortment of dissolved and suspended solids with loadings and constituents that are dependent on the nature and quality of the fuel and metals from corrosion of the boiler. Boiler wash discharges to the MCTF normally occur daily during the cleaning process, with the treated wastes discharged to the once-through cooling system over the course of two to four weeks.

d. Hypochlorinator Chemical Cleaning

Cleaning of the hypochlorinator electrolytic cells is conducted approximately once every six weeks to remove mineral scale. Wastewaters from the cleaning are routed to the MCTF for treatment and subsequent discharge to the once-through cooling system.

3. **Low Volume Wastes (Discharge Points 001-B through 001-H)**

a. Seepage and Groundwater Pumping (Discharge Point 001-B)

The basements of Units 4 and 5 are over sixteen feet below sea level. Hence, they receive a large amount of seepage from groundwater. In order to prevent flooding of these basements, sumps were installed to collect the seepage water. Pumps automatically discharge the sump contents directly to the once-through-cooling system.

b. Boiler Blowdown (Discharge Point 001-C)

The boilers at the facility require high quality water to operate at optimal conditions. The high quality water is prepared for use in the boilers from municipal water through one of several pretreatment systems (reverse osmosis/demineralization or water softening/evaporation). Despite the pretreatment systems employed, the dissolved solids concentration of boiler water increases over time. To reduce the dissolved solids content, the boiler is "blown down", i.e. a valve is opened on the steam discharge line to release boiler water with elevated concentrations of dissolved solids. At the same time, make-up water treated through the pretreatment system is added to the boiler. Blowdown discharges are intermittent and infrequent under normal unit operating conditions, and are determined largely by boiler water chemistry. Blowdown also occurs during unit start-up and in the event of condenser leaks. In order to meet NPDES monitoring requirements, boilers in operation are blown down monthly to collect appropriate samples. The blow down line for each unit is routed directly to the cooling water intake tunnel on the cooling water deck.

c. Freshwater Reverse Osmosis Brine (Discharge Point 001-D)

Municipal water used in the boilers to generate steam must first be pretreated to produce demineralized water. As a first step in the reverse osmosis/demineralization water purification process, municipal water is passed through sand filters to remove suspended solids. The reverse osmosis membrane removes dissolved solids and discharges the resulting "brine" (composed of approximately 25% of the incoming water and the rejected solids) directly to the once-through cooling water system. Brine discharges normally occur intermittently throughout each day.

d. Seawater Reverse Osmosis Brine and Backwash (Discharge Point 001-E)

It is anticipated that, in the event of a fresh water shortage, a reverse osmosis unit may be used to produce water for plant operations from seawater. Depending on the suspended solids loadings of the source water, it may need to be pretreated to remove the solids prior to treatment in the reverse osmosis unit. This system has not yet been installed. It is anticipated, however, that when it is operational the pretreatment discharges would occur intermittently throughout the day and be combined with the brine prior to discharge to the once-through cooling system.

It is anticipated that the proposed seawater reverse osmosis unit would produce a "brine" composed of approximately 60% of the incoming water and the rejected solids. This brine would be discharged through a line that is routed directly to the once-through cooling system. Discharge of the brine would occur intermittently throughout the day.

e. Fuel Line/Tank Hydrotests (Discharge Point 001-F)

EPS has the capability of using Residual Fuel Oil for boiler fuel. This fuel is stored in large floating roof tanks onsite. To repair a fuel tank or fuel line it is drained and cleaned. After a fuel tank or fuel line repair, a hydrotest is performed to verify system integrity. The water used for this hydrotest is then discharged to a stormwater drain.

f. Pilot Desalinization Plant (Discharge Point 001-G)

In September, 2002 the Regional Water Board approved the installation and operation of the seawater desalinization plant as proposed by Poseidon Resources. In January 2003, Poseidon initiated seawater desalinization operations and testing in accordance with the conditions set forth by the Regional Water Board in a letter dated September 24, 2004.

The Regional Water Board approved the diversion of up to 104 gallons per minute (gpm) (0.015 mgd) of water from the cooling water discharge pond to a pretreatment system (sand filtration or microfiltration) for removal of suspended solids. On June 11, 2004 the Discharger submitted a request to increase the diversion rate to 200 gpm (0.288 mgd).

A portion of the pretreated water is conveyed to an reverse osmosis system for membrane filtration treatment and production of desalinated water.

The waste streams generated by operation of the pilot plant are routed directly back to the cooling water discharge pond on a continuous basis while operating. Based on the 200 gpm diversion rate, the effluent components include:

i. Backwash water from pretreatment system (20 gpm)
ii. Wasted pretreated seawater (130 gpm)
iii. Backwash water from the R.O. system (waste brine) (25 gpm)
iv. Product (desalinated) water (25 gpm)

In addition to the above waste and product streams, the pilot plant also produces intermittent discharges of waste from the reverse osmosis filtration membrane cleaning. This is necessary for the removal of mineral deposits, which may interfere with the optimal operation of the membrane. The intermittent process generates a small stream of wastewater that can either be routed to the facility's cooling water discharge pond or may be discharged to the sewer system.

g. Low Volume Waste Treatment Facility (LVWTF) (Discharge Point 001-H)

The LVWTF treats all of the facility's low volume wastewaters, except for reverse osmosis brine, boiler blowdown, seawater reverse osmosis pretreatment backwash, fuel line/tank hydrotest and groundwater dewatering from the Units 4 and 5 basement subdrain systems. The LVWTF is comprised of two 100% capacity wastewater treatment trains. Each train is composed of a Surge & Equalization Tank (to accommodate the various intermittent wastewater flows and flow rates from the facility) and an Oil/Solids Coalescer and Separator Unit. Effluent from the LVWTF is discharged to the facility's once-through cooling water system. Discharges occur intermittently throughout the day based on the wastewater flow rate from the facility. Filtration of the low volume wastewater in the metal cleaning waste treatment facility's multimedia filter may be performed as an alternative treatment or as a back-up treatment in the event the oil/solids separator becomes inoperable. The contributing waste streams to the LVWTF are described below:

i. Evaporator Blowdown. Evaporators are an integral component of an alternate boiler make-up water pretreatment system (i.e. water softening/evaporation). When the total dissolved solids in the evaporator increase to preset levels, a portion of the evaporator water is discharged to the LVWTF to flush out high mineral-content water. When in use, blowdown discharges occur intermittently throughout the day. Evaporators are not routinely used, but remain available as part of the facility's alternative water make-up system.

ii. Sample Drains. The facility must maintain the quality of water used in different systems (e.g. boiler water) within certain operational parameters. This is accomplished by the use of online automatic samplers/analyzers and discrete samples to evaluate water quality. Many of these sample streams run continuously. Some of the sample water is recovered for reuse in the facility, while the rest is discharged to the LVWTF.

iii. Floor Drains. Floor drains are located throughout the facility and, in addition to being used for routing low volume waste streams to the LVWTF, are used to collect miscellaneous wastewaters from the facility's operating equipment. Wastewater that enters a floor drain is collected in sumps. Once a sump reaches a preset level, the water is pumped to the LVWTF.

iv. Demineralizers. Demineralizers are used as the second and final step in the plant's primary make-up water treatment process (i.e. reverse osmosis, demineralization). The demineralizers further polish boiler water first treated in the freshwater reverse osmosis system. Over time, demineralizer resins become exhausted and need to be regenerated using an acid/caustic process. Regenerants flushed from system are routed to the LVWTF. Demineralizer resin regeneration occurs on a periodic basis (approximately once every three weeks) based on facility operations and the demand for make-up water.

v. Softeners. Water softening is part of the alternate make-up water pretreatment system (i.e. water softening/evaporation). Municipal water is pretreated through a softener prior to being routed to the evaporator. Periodically, the softener requires regeneration using a brine solution made from salt. Regenerations wastes are routed to the LVWTF. Water softening is not routinely used, but remains available for use in the alternate make-up water system. When in use, the softener requires regeneration approximately once per day based on facility operations and the demand for make-up water.

vi. Condenser Cleaning. Periodic manual cleaning of the condenser tubes is conducted to maintain optimal heat transfer of the cooling system and prevent localized pitting of the tube material. Manual cleaning is conducted using a high-pressure air/water stream forced through the tubes and/or metal or plastic scrapers pushed through the tubes using water pressure. Cleanings are periodic (approximately once every 2 to 12 weeks) and occur more frequently during the summer months when water temperatures are higher and the growth of fouling organisms is more pronounced. Cleaning wastes are discharged to the LVWTF.

vii. Sand Filter Backwash. Water passed through the freshwater reverse osmosis. membranes is pretreated through sand filters to remove suspended solids and debris to prevent premature fouling of the membranes. The sand filters require periodic backwashing to maintain their effectiveness. The frequency of backwashes is dependent on the load of suspended solids present in the municipal water and can occur on a daily basis. Wastewaters generated by the backwash process are routed through a self-neutralization tank prior to discharge to the LVWTF.

viii. Portable Demineralizer Rinse Flush. Under certain circumstances (e.g. main demineralizer is out of service, unit service after overhaul) a portable demineralizer(s) is brought on-site to provide demineralized water to the facility. Prior to using the water produced by the portable system, the system is run until the water produced is of the quality required by the facility's systems. This "rinse flush" water is discharged to the LVTWF. Use of portable demineralizer units is infrequent. The "rinse flush" may last approximately one to two hours at the beginning of each use of the unit.

ix. Reverse Osmosis Membrane Cleaning. The membranes in the reverse osmosis unit require occasional cleaning to remove mineral deposits from the membrane surface. Membrane cleaning occurs approximately once every six months, but the actual frequency depends on the fouling rate of the membranes. Wastewaters generated by the cleaning process are routed to a self-neutralization tank and then to the LVWTF.

x. Salt Water Heat Exchanger Drains. Once-through cooling water is used to remove waste heat from facility machinery in addition to condensing steam. Leaks that occur from the heat exchangers are drained to the LVWTF.

4. Storm Water (Discharge Point 001-I)

Storm water collected in Basins D and E is discharged under this Order. Basins D and E drain areas containing the following: Power Station, gas turbine, main transformers, paint booth, and sodium hypochlorite tanks, sulfuric acid and sodium hydroxide tanks, employee parking area, administrative buildings and maintenance building. All other storm water (Basins A, B, C, F) discharge under authority of the General Permit for Industrial Storm Water Discharges (CAS000001).

B. Chlorination

Intermittent chlorine treatment is used to minimize the formation of slime, which accumulates in the condenser tubes if control measures are not employed. Sodium hypochlorite is generated on-site, as needed, through electrolytic conversion of sodium chloride naturally present in seawater. Seawater from the intake is pumped through each of the two hypochlorinators, which are comprised of electrolytic cell modules arranged in series. The sodium hypochlorite produced is fed into a holding tank where it is diluted with intake water. Hypochlorination is conducted for approximately five minutes per hour per unit on a timed cycle by injecting the diluted sodium hypochlorite into the intake channel immediately upstream of the circulating and salt water pumps for each unit. This method results in a minimal chlorine residual in the cooling water discharged to the Pacific Ocean. Periodic cleanings using nitric and hydrochloric acid are required to remove accumulated mineral scale from the hypochlorinators. Wastes from these cleanings are routed to the LVWTF.

A bromide additive (sodium bromide), which reacts with chlorine to form hypobromous acid, and a biodispersant (Nalco Sure Cool 1367) were tested between 1989 and 1991 at the SDG&E (now Duke Energy) South Bay Power Plant for their ability to control biofouling on the cooling water side of the condensers. Based on this testing, the Discharger may use sodium bromide and the biodispersant (or equivalent) at the Encina Power Station. Test methods for total residual chlorine (TRC) measure total residual oxidants, which include hypobromous acid. Consequently, the TRC effluent limitation in this Order regulates the discharge of bromide.

C. Heat Treatment

Encrusting organisms in the early stages of development are small enough to pass through the traveling screens and enter the intake tunnels and condenser tubing. These organisms can attach themselves to the tunnel walls, traveling screens, and other parts of the cooling water system. If not removed, the encrusting organisms grow and accumulate at a rate of approximately 1000 cubic yards over a 6-month period. These accumulations restrict the flow of cooling water to and through the condensers, causing a rise in the condenser operating temperature and the once-through cooling water discharge temperature. Although intermittent chlorination is practiced at the facility, only the condensers and salt water heat exchangers are chlorinated. Due to the ability of encrusting organisms to withstand intermittent exposure to chlorine, effective control of biofouling would require continuous chlorination of the entire intake system. This is not viable due to the large volume of chlorine or bromide required. Consequently, thermal tunnel recirculation treatment procedures, or heat treatments are conducted periodically at five to eight week intervals, or as determined by the Heat Treatment Decision Diagram in Attachment G. In addition to preventing the disruption of cooling water flows, heat treatment helps maintain a lower temperature rise across the condenser, thereby improving plant efficiency and reducing normal plant cooling water discharge temperatures.

Heat treatment is performed by restricting the flow of cooling water from the Agua Hedionda Lagoon and recirculating the condenser discharge water through the conveyance tunnels and condensers until the inlet temperature is increased to the effective treatment temperature. Recirculation of the cooling water is accomplished through a cross-over tunnel located approximately 120 feet from the discharge, adjacent to the intake tunnel. The temperature is raised to 105°F and maintained (heat soak) for approximately two hours. This temperature and duration have proven effective at killing and removing encrusting organisms.

Each time the cooling water passes through the condensers, it picks up additional heat rejected from the steam cycle—as much as 15°F per pass. Because the cooling water continues to circulate and the generating units continue to operate, the post-condenser temperature in the discharge channel can reach 120°F. To maintain the optimal treatment temperature of 105°F during the heat soak phase, additional lagoon water is blended into the cooling water system and a corresponding volume of water is discharged to the Pacific Ocean.

The heat treatment duration of two hours represents the total duration of the process once the cooling water has reached the optimal treatment temperature of 105°F; this does not include the time required to reach the target temperature or return to normal operations. The total time for heat treatment, including temperature buildup and cool-down is approximately seven to nine hours. Because the cooling water discharge is restricted during the heat treatment in order to recirculate the heated effluent, the plant's discharge flow rate is reduced to approximately 7 to 45 percent of its full flow rate during normal operations.

III. Discharge Points and Receiving Waters

Cooling water from the condensers from all five steam generating units, as well as all in-plant waste streams (metal cleaning, low volume wastes, storm water), flows into a common discharge tunnel. The concrete discharge tunnel (15 feet wide) runs along the east side of the inlet conveyance tunnels, past the traveling screen structures, then crosses under the inlet tunnels and runs parallel to the west side of the conveyance tunnels. The cooling water flows into a discharge pond before discharging into a riprap-lined channel, a surface jet discharge, and then into the Pacific Ocean (Discharge Point 001). The coordinates for Discharge Point 001 are 32°-57'-45" N, 117°-16'-05" W.

The waters and beaches along the area of coast surrounding the Encina Power Station provide excellent opportunities for water-related recreational activities, which include sightseeing, sunbathing, swimming, surfing, diving, fishing, camping, picnicking, bird watching and boating.

IV. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Discharge Monitoring Reports submitted to the Regional Water Board indicate that the Discharger consistently fulfills the monitoring requirements of Order No. 2000-03 and consistently meets the discharge limitations and conditions imposed by that Order. Monthly Discharge Monitoring Reports from February 2001 through December 2004 were examined to compile the following characterization of discharges from the Encina Power Station through Discharge Point 001:

A. Flow

The combined discharge through Discharge Point 001 did not exceed 795.1 mgd, with an average monthly discharge of 599 mgd, during this 47-month period. Main condenser cooling water flow consistently accounts for greater than 99.7 percent of the combined discharge through Discharge Point 001. Order No. 200-03 included a maximum flow limitation for discharges through Discharge Point 001 of 863.142 mgd.

The average monthly flow of low volume wastewaters was 0.192 mgd, with a daily maximum flow of 1.074 mgd during this period. Metal cleaning wastes were not discharged during this period.

B. Temperature

The daily average temperature differential (ΔT) in cooling water through the main condenser was 12º F, and the maximum observed daily ΔT was 23.6º F during this period. Order No. 2000-03 included a daily average ΔT of 20º F, with a maximum permissible ΔT of 25º F.

Heat treatments are conducted periodically to control Bay Mussel growth within the condenser and cooling water lines. Order 2000-03 prohibits the temperature of the combined discharge to exceed 120º F for a maximum of two hours during heat treatments. Typical heat treatments at the Encina Power Station result in target temperature of approximately 103º F that is maintained for two hours. The maximum ΔT reported during heat treatments during the period was 46.9º F. The frequency of heat treatments is determined, in part, by a growth model for the Bay Mussel. The average number of heat treatments conducted per year is six.

C. Combined Discharge

1. Between January 2001 and November 2003 the Discharger has analyzed the combined discharge from Discharge Point 001 six times for the parameters listed in Table F-4. The analytical results for all parameters were below the applicable effluent limitations derived from water quality criteria of the Ocean Plan when taking into consideration a minimum probable initial dilution of 15.5 to 1. Summary data are presented in Table F-4. (Note: Figures that appear in **bold** in Table F-4 are measured concentrations. Other figures are the analytical method detection limits reported by the lab; i.e. the lab result was reported as ND (not detected)).

Table F-4. Combined Discharge Effluent Monitoring Data for Toxic Parameters

Parameter	Previous Limitation (Order 2000-03)	Units	Sample Date					
			1/29/2001	7/26/2001	2/25/2002	8/27/2002	5/21/2003	11/10/2003
Arsenic	1,300	µg/L	0.5	0.5	0.56	0.56	**1.7**	0.5
Cadmium	170	µg/L	0.5	0.5	0.56	0.56	0.5	0.5
Chromium (Hexavalent)*	330	µg/L	0.5	**0.51**	0.56	0.56	**0.85**	0.5
Copper	460	µg/L	**13**	2.5	2.8	2.8	2.8	2.5
Lead	330	µg/L	2.5	2.5	2.8	2.8	2.8	2.5
Mercury	6.6	µg/L	0.1	0.1	0.1	0.1	0.1	0.1
Nickel	830	µg/L	**9.5**	2.5	2.8	2.8	2.8	2.5
Zinc	3,200	µg/L	**10**	10	10	12	11	10
Acute Toxicity Daily Maximum	2.0	TU_a	0.59	0.51	0.73	0.59	0.41	0.65
Acute 6-month Median	1.5	TU_a	0.5	0.26	0.37	0.3	0.21	0.44
Chronic Toxicity (Germination)	16.5	TU_c	4	4	4.17	1	1	1
Chronic Toxicity (Growth)	16.5	TU_c	8	4	8.33	1	2	1

*Chromium reported as total chromium

2. Average monthly total chlorine residuals and pH were consistently measured to be less than the effluent limitations established by Order 2000-03. The majority of chlorine residual samples taken from February 2001 through May 2004 were not detected. Average pH values were consistently within the range of 6.0 to 9.0. Summary data are presented in Table F-5.

Table F-5. Combined Discharge Effluent Monitoring Data for Chlorine and pH

Parameter	Previous Limitation (Order 2000-03)	Units	Minimum	Maximum
Chlorine residual (Instantaneous Maximum)	200	µg/L	ND	60
pH	6.0 – 9.0	standard units	7.88	8.19

3. Average monthly turbidity levels were consistently measured to be less than the effluent limitations established by Order 2000-03. Summary data for the period of February 2001 through May 2004 are presented in Table F-6.

Table F-6. Combined Discharge Effluent Monitoring Data for Turbidity

Parameter	Previous Limitation (Order 2000-03)	Units	Minimum	Maximum
Turbidity (Daily Maximum)	100	NTU	ND	4.5
Turbidity (Instantaneous Maximum)	225	NTU	ND	4.5

D. Low Volume Wastes

1. The Discharger reported low volume waste flows from the following sources during the period of February 2001 through May 2004: boiler and evaporator blowdown, sample and floor drains, water purification systems (demineralization and reverse osmosis), and seepage and groundwater. Low volume waste flow volumes typically represent a small percentage of the overall volume of water discharged through Discharge Point 001. During the review period, the Discharger reported a maximum low volume waste flow of 1.074 mgd, or approximately 0.14% of the total facility discharge. Low volume waste flows average 0.192 mgd.

2. Results for combined low volume waste monitoring for total suspended solids (TSS) and oil and grease (O&G) during the review period are in summarized in Table F-7. Sample results were consistently less than the effluent limitations established by Order 2000-03. (Note: Figures that appear in **bold** in Table F-7, are measured concentrations. Other figures are the analytical method detection limits reported by the lab; i.e. the lab result was reported as ND (not detected). Order 2000-03 required the Discharger to monitor TSS and O&G once per month. The single sample is subject to all applicable effluent limitations (monthly average, daily maximum, instantaneous maximum). The most stringent limitation (monthly average) is presented.)

Table F-7. Low Volume Waste Effluent Monitoring Data for TSS and Oil and Grease

Parameter	Previous Limitation (Order 2000-03)	Units	Minimum	Maximum
TSS	30	mg/L	**0.02**	**4.2**
O&G	15	NTU	0.4	**4.5**

3. Between January 2001 and February 2004, the Discharger sampled and analyzed the combined low volume waste discharger six times for the toxic pollutants listed in Table F-8. Sample results were consistently less than the effluent limitations established by Order 2000-03 when taking into consideration a minimum initial probable dilution of 15.5 to 1. Except as noted, effluent limitations are for a 30-day average. (Note: Figures that appear in **bold** in the Table F-8 are measured concentrations. Other figures are the analytical method detection limits reported by the lab; i.e. the lab result was reported as ND (not detected). Order 2000-03 required the Discharger to monitor the parameters listed above once every six months. The single sample is subject to all applicable effluent limitations (6-month median, daily maximum). The most stringent limitation (6-month median) is presented.)

Table F-8. Low Volume Waste Effluent Monitoring Data for Toxic Parameters

Parameter	Previous Limitation (Order 2000-03)	Units	Sample Date					
			1/29/2001	7/26/2001	2/25/2002	8/27/2002	5/21/2003	11/10/2003
Arsenic[1]	620	lbs/day	0.001	0.004	0.001	0.001	**0.002**	0.000
Cadmium[1]	120	lbs/day	0.001	0.004	0.001	0.001	0.001	0.000
Chlorinated Phenolic Compounds[1]	120	lbs/day	0.012	0.010	0.163	0.011	0.015	0.010
Chromium (Hexavalent)[1]	240	lbs/day	0.001	**0.001**	0.002	**0.001**	**0.002**	**0.001**
Copper[1]	130	lbs/day	**0.015**	**0.011**	0.039	**0.026**	**0.024**	**0.017**
Cyanide[1]	120	lbs/day	0.006	0.004	**0.011**	0.006	0.018	0.012
Lead[1]	240	lbs/day	0.003	0.002	**0.008**	0.003	0.004	0.002
Mercury[1]	5	lbs/day	0.000	0.000	0.000	0.000	0.000	0.000
Nickel[1]	590	lbs/day	**0.011**	**0.004**	**0.029**	**0.006**	**0.014**	**0.004**
Ammonia[1]	55,000	lbs/day	**0.195**	**0.114**	**0.081**	0.057	0.076	0.049
Non-chlorinated Phenolic Compounds[1]	3,100	lbs/day	0.012	0.010	0.016	0.011	0.015	0.010
Selenium[1]	1,800	lbs/day	0.057	0.044	0.187	0.064	0.091	0.049
Silver[1]	70	lbs/day	0.001	0.000	0.001	0.001	0.001	0.000
Zinc[1]	1,500	lbs/day	**0.012**	**0.009**	**0.016**	0.014	0.017	0.013
Chlorobenzene	68,000	lbs/day	0.006	0.004	0.008	0.003	0.008	0.005
Chromium (III)	23,000,000	lbs/day	0.001	**0.001**	**0.002**	0.001	**0.002**	**0.001**
Dichlorobenzenes	610,000	lbs/day	0.006	0.004	0.008	0.003	0.008	0.005
1,1 Dichloroethylene	840,000	lbs/day	0.006	0.004	0.008	0.003	0.008	0.005
Ethylbenzene	490,000	lbs/day	0.006	0.004	0.008	0.003	0.008	0.005
Nitrobenzene	580	lbs/day	0.012	0.010	0.016	0.011	0.015	0.010
Toluene	10,000,000	lbs/day	0.006	0.004	0.008	0.003	0.008	0.005
1,1,1 Trichloroethane	64,000,000	lbs/day	0.006	0.004	0.008	0.003	0.008	0.005
1,1,2 Trichloroethane	5,100,000	lbs/day	0.006	0.004	0.008	0.003	0.008	0.005
Benzene	700	lbs/day	0.006	0.004	0.008	0.003	0.008	0.005
Chloroform	15,000	lbs/day	**0.007**	0.010	0.008	0.003	0.008	**0.006**
1,4 Dichlorobenzene	2,100	lbs/day	0.001	0.004	0.016	0.011	0.015	0.010
1,2 Dichloroethane	15,000	lbs/day	0.006	0.004	0.008	0.003	0.008	0.005
Dichloromethane	53,000	lbs/day	0.006	0.004	0.008	0.006	0.015	0.010

Parameter	Previous Limitation (Order 2000-03)	Units	Sample Date					
			1/29/2001	7/26/2001	2/25/2002	8/27/2002	5/21/2003	11/10/2003
1,2 Diphelyhydrazine	19	lbs/day	0.012	0.010	0.016	0.011	0.015	0.010
Tetrachloroethane	12,000	lbs/day	0.006	0.004	0.008	0.003	0.008	0.005
Trichloroethane	3,200	lbs/day	0.006	0.004	0.008	0.003	0.008	0.005

V. Planned Changes

The Regional Water Board received an application for NPDES requirements from Poseidon Resources Corporation on October 7, 2005 proposing to construct and operate the Carlsbad Desalination Project (CDP) on a 4 acre parcel within the site of the Encina Power Station. Poseidon Resource Corporation has entered into a renewable 60-year lease with Cabrillo Power I LLC for the desalination project site. The CDP would use 100 mgd of cooling water from the Encina Power Station as source water. NPDES requirements issued to Poseidon for the CDP discharge is an independent regulatory action from Order No. R9-2006-0043.

VI. Applicable Plans, Policies, and Regulations

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

B. California Environmental Quality Act (CEQA)

This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

C. State and Federal Regulations, Policies, and Plans

1. Water Quality Control Plans. The Water Quality Control Plan for the San Diego Basin (9), the Basin Plan, was adopted by the Regional Water Board on September 8, 1994 and approved by the State Board on December 13, 1994. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. For the protection and enhancement of ocean water quality, the Basin Plan incorporates by reference the provisions of the State Board's Water Quality Control Plan for Ocean Waters of California (Ocean Plan) and the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (the Thermal Plan).

   Although the Ocean Plan establishes most water quality objectives and procedures for implementing those objectives for ocean discharges, the Basin Plan identifies beneficial uses of the coastal waters of the Pacific Ocean as specified in Table F-9. Basin Plan Beneficial Uses for the Pacific Ocean.

Table F-9. Basin Plan Beneficial Uses for the Pacific Ocean

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pacific Ocean	a. Industrial service supply b. Navigation c. Contact and non-contact water recreation d. Commercial and sport fishing e. Preservation of Areas of Special Biological Significance (ASBS) f. Preservation of rare, threatened and endangered species g. Marine habitat h. Migration of aquatic organisms i. Shellfish harvesting j. Wildlife habitat k. Spawning, reproduction, and/or early development l. Aquaculture

In addition to incorporating by reference the Ocean Plan and the Thermal Plan, the Basin Plan establishes specific water quality objectives for pH and dissolved oxygen that are applicable to the Encina Power Station.

2. **Thermal Plan and CWA Section 316 (a).** On May 18, 1972 the State Board adopted the Thermal Plan, which includes narrative and numeric water quality objectives for discharges of elevated temperature wastes for existing discharges (those discharges at least under construction prior to the adoption of the Plan) and for new discharges. A revised Thermal Plan was adopted by the State Board on September 18, 1975.

   Under the terms and conditions of the Thermal Plan, elevated temperature wastes from Units 1-4 are classified as existing discharges. The waste from Unit 5, which was constructed after May 18, 1972, is classified as a new discharge.

   Section 316 (a) of the CWA requires compliance with State water quality standards for the discharge of thermal effluent. In 1973, SDG&E (previous owner of EPS) conducted a thermal effects study as required by the Thermal Plan. The study concluded that the existing discharges from Units 1-3 caused no prior appreciable harm to the aquatic communities of the coastal waters of the Pacific Ocean. The Discharger further predicated that the increased discharge from Unit 4 would not cause significant changes in the existing conditions or beneficial uses.

   On March 6, 1975, under provisions of Section 316 (a) of the CWA, SDG&E applied for an exception for the discharger from Unit 5 under the new source performance standards contained in the Thermal Plan and power plant regulations in effect in 1975, specifically:

   a. Thermal Plan Objective 3.B.(1)

      Elevated temperature waste shall be discharged to the open ocean away from the shoreline to achieve dispersion through the vertical water column.

b. Thermal Plan Objective 3.B.(4)

The discharges of elevated wastes shall not result in increases in the natural water temperature exceeding 4°F at (a) the shoreline, (b) the surface of any ocean substrate, or (c) the ocean surface beyond the 1,000 feet from the discharge system. The surface temperature limitation shall be maintained at least 50 percent of the duration of any tidal cycle.

c. Power plant regulations in effect in 1974, 40 CFR 423.15 (L) that there shall be no discharge of heat from the main condensers except:

i. Heat many be discharged in blowdown from recirculated cooling water systems provided the temperature at which the blowdown is discharged does not exceed at any time the lowest temperature of recirculated cooling water prior to the addition of the make-up water.

ii. Heat may be discharged in blowdown from cooling ponds provided the temperature at which the blowdown is discharged does not exceed at any time the lowest temperature of the recirculated cooling water prior to the addition of the make-up water.

On July 16, 1976 the U.S Court of Appeals for the Fourth Circuit remanded certain provisions (including the thermal limitation discussed above) of the power plant regulations in effect in 1974 for further consideration. U.S. EPA has not promulgated a new heat discharge limitation for power plants to date.

SDG&E initiated a study in 1975 for the purpose of making a demonstration under Section 316 (a) of the CWA in support of its application for the exceptions to the Thermal Plan discussed above. As a part of its application for such exceptions under the Thermal Plan, SDG&E proposed alternative thermal discharge limitations that would allow discharges from Unit 5 to be made in the same “across the beach” channel used for the thermal discharges from Units 1-4, and allow for an alternative to the surface water temperature limitation. SDG&E’s study was undertaken to demonstrate the proposed alternatives would ensure the protection and propagation of the beneficial uses of the receiving waters, including a balanced, indigenous population of shellfish, fish, and wildlife.

SDG&E submitted the results of the 316 (a) study in 1981. SDG&E concluded that the additional discharge from the Unit 5, when added to the discharges from Units 1-4, had not resulted in “appreciable harm” to the balanced indigenous communities of the receiving waters, or in adverse effects on the beneficial uses of the coastal waters of in the vicinity of the facility discharge.

SDG&E submitted a supplemental 316 (a) Summary Report in 1990. This report provided additional data for the period from 1981 to 1990 and amended the original request based on actual operating experience.

Prior to the adoption of Order 94-59, and based upon a review of the findings of the 316 (a) demonstration studies, the Regional Water Board and U.S. EPA concluded that additional information was needed to determine if the thermal discharge from Encina will allow the propagation of a balanced indigenous community and will ensure the protection of beneficial uses of the receiving water. Order 94-59 required

SDG&E to conduct an additional study to supplement its demonstration of compliance with Section 316 (a). SDG&E submitted this supplemental study on August 8, 1997. The supplemental study concludes that no adverse effects of the present operation have been observed or are predicted. Cabrillo Power resubmitted the 1997 report in February 2004.

In July 2005, Tetra Tech Inc., under contract to US EPA and on behalf of the Regional Water Board reviewed the supplemental study and concluded that the report did not provide the information necessary to determine if the thermal discharge from Encina Power Plant would allow for the propagation of a balanced, indigenous population and will ensure the protection of beneficial uses of water. A copy of the Tetra Tech comments has been provided to the Discharger and is available for review by contacting the Regional Board office (see Fact Sheet section XI.G below).

3. **CWA Section 316 (b).** Current CWA Section 316 (b) implementing regulations are applicable to facilities that meet the definition of a Phase II existing facility at 40 CFR 125.91. Such facilities withdraw cooling water from a water of the United States; have, or are required to have, an NPDES permit; generate and transmit electric power as their primary business activity; have a total design intake capacity of 50 mgd or greater; and use at least 25 percent of the withdraw water exclusively for cooling purposes. Pursuant to CWA 316 (b) regulations, the Encina Power Station is classified as a Phase II existing facility.

   Section 316 (b) of the Clean Water Act provides that any standard established pursuant to Section 301 or 306 of the Act and applicable to a point source must require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental effects. By letter dated October 30, 1977 the Regional Water Board requested SDG&E to initiate studies to demonstrate conformance with the requirements of Section 316 (b).

   In December 1980 the SDG&E submitted a final report that concluded “the low and insignificant level of impact demonstrates that the existing Encina Power Plant intake system represents the best technology available for this specific site to minimize adverse environmental impacts” (SDG&E, 1980. Summary, pp. 4-26).

   Prior to the adoption of Order 94-59 and based upon a review of the findings of the 316(b) demonstration studies, the Regional Water Board and U.S. EPA concluded that additional information was needed to determine the location, design, construction and capacity of the cooling water intake structures at the facility reflect the best technology available (BTA) for minimizing adverse environmental impacts and protecting beneficial uses of the receiving water. Order 94-59 required SDG&E to conduct an additional study to supplement its demonstration of compliance with Section 316 (b) requirements. SDG&E submitted the study to the Regional Water Board on August 6, 1997. The study concluded that the cooling water intake structure is not having an adverse environmental impact as defined under Section 316 (b) and, therefore, the existing intake structure constitutes BTA.

   The Regional Water Board has opted to forgo a formal determination of BTA based on the 1997 study submitted by the Discharger in light of the new CWA Section 316(b) regulations for existing facilities adopted by U.S. EPA. As part of the compliance requirements for the new regulations, the Discharger submitted an Entrainment and Impingement Sampling Plan for review by the Regional Water Board on September 2, 2004. The plan will enable the Discharger to characterize the nature of impingement and entrainment rates resulting from the operation of the intake structure and serve as a basis for compliance with the new regulations. Comments on the Plan were provided by the Regional Water Board, which were addressed by the discharger in a letter dated January 10, 2005.

U.S. EPA finalized regulations regarding cooling water intake structures for existing facilities, which are applicable to the Encina Power Station, on February 16, 2004. The regulations, commonly referred to as "316 (b) Phase II", were published in the Federal Register on July 9, 2004, and became effective on September 7, 2004. Facilities that meet the definition of a Phase II facility must comply, or demonstrate a compliance strategy, when they become subject to a reissued NPDES permit adopted on or after the effective date of the regulations.

Ultimately, dischargers must demonstrate compliance with 316 (b) Phase II regulations by choosing one of five alternatives. These alternatives are generally summarized as: (1) demonstrate that the facility has reduced cooling water intake velocity to 0.5 feet per second or less; (2) demonstrate that the existing design and construction technologies, operational measures, and/or restoration measures meet the performance standards established by the regulations; (3) demonstrate that the facility has selected design and construction technologies, operational measures, and/or restoration measures that will, in combination with any existing design and construction technologies, operational measures, and/or restoration measures, meet the performance standards; (4) demonstrate that the facility has installed and properly operates and maintains an approved technology; or (5) demonstrate that a site-specific determination of best technology available is appropriate.

Most facilities, including Encina Power Station, will be required to prepare a Comprehensive Demonstration Study to include the following components, if applicable.

a. *Source Waterbody Flow Information*, as described at 40 CFR 125.95 (b) (2);

b. *Impingement Mortality and/or Entrainment Characterization Study*, as described at 40 CFR 125.95 (b) (3), to support development of a calculation baseline for evaluating impingement mortality and entrainment and to characterize current impingement mortality and entrainment;

c. Design and Construction Technology Plan and a Technology Installation and Operation Plan, as described at 40 CFR 125.95 (b) (4);

d. *Restoration Plan*, as described at 40 CFR 125.95 (b) (5);

e. Information to Support Site-Specific Determination of BAT, as described at 40 CFR 125.95 (b) (6);

f. *Verification Monitoring Plan*, as described at 40 CFR 125.95 (b) (6).

On April 3, 2006, the Regional Water Board received from the discharger a *Proposal for Information Collection* (PIC) as required by Section 125.95(b)(1) of the Phase II rule. The *Proposal for Information Collection* included the following information:

1. A description of the proposed and/or implemented technologies, operational measures, and/or restoration measures to help develop a compliance strategy to meet the performance standards;

2. A list and description of any historical studies characterizing impingement mortality and entrainment and/or the physical and biological conditions in the vicinity of the cooling water intake structure and their relevance to this proposed Study;

3. A summary of any past or ongoing consultations with appropriate fish and wildlife agencies and stakeholders that are relevant to this Study; and

4. A sampling plan for any new field studies the Discharger proposes to conduct in order to ensure that there is sufficient data to develop a scientifically valid estimate of impingement mortality and entrainment at the site.

The provisions, compliance requirements, and compliance schedules for the 316(b) Phase II rule have been incorporated into tentative Order R9-2006-0043.

4. **Storm Water.** In Water Quality Order No. 97-03-DWQ, the State Board adopted Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activity, Excluding Construction Activity. On March 15, 1999, the Discharger submitted a Notice of Intent to obtain coverage, effective May 22, 1999, for the Encina Power Station under the General Industrial Storm Water Permit Order 97-03-DWQ. The Best Management Practices (BMPs) contained in the Discharger's Storm Water Pollution Prevention Plan to represent the BMPs required pursuant to Provision 3 of Order 97-03-DWQ. As discussed in Section II.A.4 of this fact sheet, storm water originating in Basins D and E is subject to the wastewater discharge requirements contained in Order R9-2006-0043. Storm water originating in Basins A, B, C or F is covered under the General Permit.

5. **Effluent Limitations Guidelines.** At 40 CFR 125, U.S. EPA has established criteria and standards for the NPDES permitting process, including Criteria and Standards for Imposing Technology-Based Treatment Requirements Under Sections 301 (b) and 402 of the Clean Water Act (Subpart A) and Ocean Discharge Criteria (Subpart M). On November 19, 1982, at 40 CFR 423, U.S. EPA established technology-based effluent limitations guidelines for the steam electric power point source category, which are applicable to the Encina Power Station.

6. **Antidegradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Board established California's antidegradation policy in State Board Resolution 68-16, which incorporates the requirements of the federal antidegradation policy. Resolution 68-16 requires that existing water quality is maintained unless degradation is justified based on specific findings. As discussed in detail in this Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR §131.12 and State Board Resolution 68-16.

7. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

8. **Monitoring and Reporting Requirements.** Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and State requirements. This MRP is provided in Attachment E.

9. **Impaired Water Bodies on CWA 303(d) List.** On June 5 and July 25, 2003 the U.S. EPA approved major portions of the list of impaired water bodies, prepared by the State Board pursuant to Section 303 (d) of the CWA, which are not expected to meet applicable water quality standards after implementation of technology-based effluent limitations for point sources. This 303 (d) list does not include the Pacific Ocean shoreline in the vicinity of the facility discharge point.

VII. Rationale For Effluent Limitations and Discharge Specifications

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations; and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR §122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, three options exist to protect water quality: 1) 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a); 2) proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information may be used; or 3) an indicator parameter may be established. Dischargers are required to comply with the effluent limitations that are the most stringent.

A. Discharge Prohibitions

1. Discharge of wastes in a manner or to a location not specifically described or regulated by this Order is prohibited. This prohibition is retained from Order 2000-03.

2. Discharge of oil or other residuary petroleum products, except as authorized by effluent limitations contained in this Order or by provision of Division 7 of the CWC is prohibited. This prohibition is retained from Order 2000-03.

3. Discharge of polychlorinated biphenyl compounds is prohibited. This prohibition is a restatement of the applicable effluent limitations guidelines for steam electric power plants at 40 CFR 423.13 (a).

4. Discharge to Areas of Special Biological Significance is prohibited. This prohibition is a restatement of an applicable discharge prohibition from Section III. H of the Ocean Plan.

5. Bypass of untreated waste containing concentrations of pollutants in excess of those in Tables A and B of the Ocean Plan, except under upset conditions, is prohibited. This prohibition is a restatement of an applicable discharge prohibition from Section III. H of the Ocean Plan.

6. A total discharge volume in excess of 863.5 mgd is prohibited. This prohibition reflects the maximum possible discharge from the Encina Power Station as described by the Discharger in its application materials for renewal of its Waste Discharge Requirements. This provision is retained from Order 2000-03 with a modification reflecting the increased maximum flow resulting from inclusion of the Pilot Desalinization Plant.

7. Discharge of chlorine from any single generating unit for more than two hours per day is prohibited. This prohibition is a restatement of the applicable effluent limitations guidelines for steam electric power plants at 40 CFR 423.13 (b) (2).

8. Discharge of warfare agents or high-level radioactive waste is prohibited. This prohibition is a restatement of an applicable discharge prohibition from Section III. H of the Ocean Plan.

9. Discharge of sludge to the ocean is prohibited. This prohibition is a restatement of an applicable discharge prohibition from Section III. H of the Ocean Plan.

B. Technology-Based Effluent Limitations

1. Scope and Authority

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

a. Best practicable treatment control technology (BPT), which is based on the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

b. Best available technology economically achievable (BAT), which represents the best existing performance of treatment technologies that are economically achievable with an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. Best conventional pollutant control technology (BCT), which is a standard for the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the cost reasonableness of the relationship between the cost of attaining a reduction in effluent discharger and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.

d. New source performance standards (NSPS) that represent the best available demonstrated control technology standards. The intent of the NSPS guidelines is to set limitations that represent the state-of-the-art treatment technology for new sources.

The CWA requires EPA to develop effluent limitations, guidelines, and standards (ELGs) representing application of BPT, BCT, BAT, and NSPS. Section 402 (a) (1) of the CWA and 40 CFR 125.3 of the NPDES regulations authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern.

2. Applicable Technology-Based Effluent Limitations

Pursuant to Section 306 (b) (1) of the CWA, U.S. EPA has established standards of performance for the steam electric power point source category, for existing and new sources, at 40 CFR Part 423. These regulations apply to the Encina Power Station as “an establishment primarily engaged in the generation of electricity for distribution and sale which results primarily from a process utilizing fossil-type fuel…in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium.” (40 CFR 423.10) Standards of performance for existing facilities (instead of new source performance standards) are applicable to all units of the Encina Power Station because their construction was completed or commenced prior to publication of regulations on November 19, 1982, which proposed standards of performance for the industry. The following are applicable technology based-standards of performance (BPT and BAT) applicable to the Encina Power Station from the effluent limitations guidelines for existing sources at 40 CFR 423. The guidelines do not include standards of performance based on BCT.

a. Standards of Performance Based on BPT

i. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 – 9.0 [40 CFR 423.12 (b) (1)].

ii. Low volume wastes are defined as those wastewater sources for which specific limitations are not established by the effluent limitations guidelines at 40 CFR 423. The quantity of pollutants discharged from low volume waste sources shall not exceed the quantity determined by multiplying the flow of the low volume waste sources times the concentration as specified in Table F-10 [40 CFR 423.12 (b) (3)].

Table F-10. Effluent Limitation Guidelines for Low Volume Waste

Pollutant	Daily Max (mg/L)	30 Day Avg (mg/L)
Total Suspended Solids	100	30
Oil and Grease	20	15

iii. The quantity of pollutants discharged in metal cleaning wastes shall not exceed the quantity determined by multiplying the flow of metal cleaning wastes times the concentration as specified in Table F-11 [40 CFR 423.12 (b) (5)]:

Table F-11. Effluent Limitation Guidelines for Metal Cleaning Waste

Pollutant	Daily Max (mg/L)	30 Day Avg (mg/L)
Total Suspended Solids	100	30
Oil and Grease	20	15
Total Iron	1.0	1.0
Total Copper	1.0	1.0

iv. At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration-based limitations instead of the mass-based limitations required by (ii.) and (iii.) above [40 CFR 423.12 (b) (11)].

b. Standards of Performance Based on BAT

i. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid [40 CFR 423.13 (a)].

ii. The quantity of pollutants discharged in once-through cooling water from each discharge point shall not exceed the quantity determined by multiplying the flow of once-through cooling water from each discharge point times the concentration as specified in Table F-12 [40 CFR 423.13 (b) (1)]:

Table F-12. Effluent Limitation Guidelines for Total Residual Chlorine

Pollutant	Max Concentration (mg/L)
Total Residual Chlorine	0.2

iii. Total residual chlorine may not be discharged from any single generating unit for more than two hours per day unless the Discharger demonstrates to the permitting authority that discharge for more than two hours per day is required for macroinvertebrate control [40 CFR 423.13 (b) (2)]. The duration of each chlorination cycle shall not exceed 25 minutes.

iv. At the permitting authority's discretion, the quantity of pollutants allowed to be discharged may be expressed as concentration-based limitations instead of mass-based limitations required by (ii.) above [40 CFR 423.13 (g)].

c. Differences Between Tentative Order and ELGs and/or Order 2000-03

i. Pursuant to 40 CFR 423.13 (b)(12), effluent limitations for the individual waste streams that contribute to the metal cleaning waste treatment facility shall be applied to each waste stream. Order No. 2000-03 omitted this provision. Tentative Order R9-2006-0043 applies the appropriate effluent limitations to the four metal cleaning waste streams that contribute to the metal cleaning waste treatment facility (chemical cleaning, air heater wash, boiler wash, hypochlorinator wash).

C. Water Quality Based Effluent Limitations (WQBELs)

1. **Scope and Authority**

U.S. EPA regulations at 40 CFR 122.44 (d) (1) (i) require permits to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels which cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. For discharges to the Pacific Ocean, the Ocean Plan allows the Regional Water Board little discretion in the application of WQBELs. The Ocean Plan requires the establishment of WQBELs in discharger permits for all Table B toxic pollutants in the Ocean Plan.

2. **Applicable Beneficial Uses and Water Quality Criteria and Objectives**

a. Basin Plan

The Water Quality Control Plan, San Diego Basin (9) (the Basin Plan) was adopted by the Regional Water Board on September 8, 1994 and approved by the State Water Resources Control Board on December 13, 1994. The Basin Plan identifies the following beneficial uses of the coastal waters of the Pacific Ocean:

i. Industrial service supply;
ii. Navigation;
iii. Contact water recreation;
iv. Non-contact water recreation;
v. Commercial sport fishing;
vi. Preservation of biological habitats of special significance;
vii. Wildlife habitat;
viii. Rare, threatened, or endangered species;
ix. Marine habitat;
x. Aquaculture;
xi. Migration of aquatic organisms;
xii. Spawning, reproduction, and/or early development; and
xiii. Shellfish harvesting.

By reference, the Basin Plan adopts the *Water Quality Control Plan for Ocean Waters of California* (the Ocean Plan) and the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (the Thermal Plan). Although these two plans include most water quality objectives and implementing procedures that are applicable to discharges to the Pacific Ocean, the Basin Plan includes the following water quality objectives for dissolved oxygen and pH in ocean waters, which have been incorporated into tentative Order No. R9-2006-0043.

<u>Dissolved Oxygen</u>
The dissolved oxygen concentration in ocean waters shall not at any time be depresses more than 10 percent from that which occurs naturally, as a result of the discharge of oxygen-demanding waste materials.

pH
The pH of receiving waters shall not be changed at any time more than 0.2 pH units from that which occurs naturally.

b. Ocean Plan

The Basin Plan for the San Diego Basin adopts by reference the Ocean Plan (2005), which establishes beneficial uses for and water quality objectives and procedures for their implementation to protect the quality of the State's ocean waters. Order No. 2000-03 was written using the guidance of the 1997 Ocean Plan, while tentative Order No. R9-2006-0043 has been written using the guidance of the 2005 Ocean Plan.

For all ocean waters of the State, the Ocean Plan establishes the beneficial uses described previously in this Fact Sheet. The Ocean Plan includes general provisions and water quality objectives for bacterial characteristics, physical characteristics, chemical characteristics, biological characteristics, and radioactivity. The water quality objectives from the Ocean Plan have been incorporated verbatim as receiving water limitations into tentative Order No. R9-2006-0043.

Table B of the Ocean Plan includes the following water quality objectives for chemicals and chemical characteristics, and requires that effluent limitations be established in NPDES permits for each chemical or chemical characteristic:

(1) 6-month median, instantaneous maximum, and/or daily maximum objectives for 21 chemicals and chemical characteristics, including total residual chlorine and acute and chronic toxicity, for the protection of marine aquatic life.

(2) 30-day average objectives for 20 non-carcinogenic chemicals for the protection of human health.

(3) 30-day average objectives for 42 carcinogenic chemicals for the protection of human health.

Determining the Need for WQBELs

40 CFR 122.44(d) requires that NPDES permits include any requirements necessary to achieve water quality standards that are in addition to or more stringent than technology-based standards. 40 CFR 122.44(d) requires that limitations must control all pollutants or pollutant parameters which are or may be discharged at a level that cause, has reasonable potential to cause, or contribute to an excursion above a water quality objective for a constituent (i.e., the permitting authority may not omit an effluent limitation for pollutants with demonstrated reasonable potential).

For Order No. R9-2006-0043 the need for effluent limitations based on water quality objectives in Table B of the Ocean plan was evaluated in accordance with 40 CFR 122.44(d) and guidance for statistically determining the "reasonable potential" for a discharged pollutant to exceed an objective, as outlined in the

Technical Support Document for Water Quality-based Toxics Control (TSD; EPA/505/2-90-001, 1991) and the California Ocean Plan Reasonable Potential Analysis (RPA) Amendment that was adopted by the State Water Board on April 21, 2005. The statistical approach combines knowledge of effluent variability (as estimated by a coefficient of variation) with the uncertainty due to a limited number of effluent data to estimate a maximum effluent value at a high level of confidence. This estimated maximum effluent value is based on a lognormal distribution of daily effluent values. Projected receiving water values (based on the estimated maximum effluent value or the reported maximum effluent value and minimum probable initial dilution), can then be compared to the appropriate objective to determine the potential for an exceedance of that objective and the need for an effluent limitation. The Ocean Plan RPA can yield three endpoints: 1) Endpoint 1, an effluent limitation is required and monitoring is required; 2) Endpoint 2, an effluent limitation is not required and the Regional Water Board may require monitoring; and 3) Endpoint 3, the RPA is inconclusive, monitoring is required, and an existing effluent limitation may be retained or a permit reopener clause may be included to allow inclusion of an effluent limitation if future monitoring warrants the inclusion.

Effluent monitoring data from the facility was utilized in part to perform a RPA. The RPA was conducted using the RPcalc 2.0 software tool developed by the State Water Board for conducting a RPA, the applicable Table B water quality objectives, an applicable dilution credit of 15.5:1, and the projected maximum concentrations for pollutants contained in the effluent for which water quality objectives exist in Table B of the Ocean Plan. Results of the RPA indicate that constituents in effluent limits must be established for hexavalent chromium, copper, mercury, and nickel from the Low Volume Discharges.

Discharges for Table 7 do not have the reasonable potential to exceed Ocean Plan objectives (i.e., Endpoint 2), and therefore do not require effluent limitations. Instead, a narrative limit statement to comply with all Ocean Plan objective requirements is provided. This Order includes desirable maximum effluent concentrations for constituents that do have the reasonable potential which were derived using the effluent limitation determination procedure described above and are referred to in this Order as “performance goals”. The Discharger is required to monitor for these constituents as stated in the Monitoring and Reporting Program to gather data for use in RPAs for future permit renewals and/or updates.

WQBELs and Performance Goal Calculations

From the Table B water quality objectives, effluent limitations and performance goals for the combined discharge from the Encina Power Station are calculated according to the following equation for chemical characteristics, except for chlorine, acute toxicity, and radioactivity:

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

Where:

Ce = the effluent limitation/performance goal (µg/L)

Co = the water quality objective to be met at the completion of initial dilution (µg/L)
Cs = background seawater concentration
Dm = minimum probable initial dilution expressed as parts seawater per part wastewater

For the Encina Power Station Dm equals 15.5, based on observed waste flow characteristics, receiving water density structure, and the assumption that that no currents of sufficient strength to influence the initial dilution process flow across the discharger structure. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of the wastewater with the ocean water around the point of discharge. In accordance with Table B implementing procedures, Cs equals zero for all chemicals and chemical characteristics, except as specified in Table F-13.

Table F-13. Background Seawater Concentrations

Pollutant	Cs (µg/L)
Arsenic	3
Copper	2
Mercury	0.0005
Silver	0.16
Zinc	8

Table F-14. Water Quality Objectives for Copper, Chloroform, and Chlorine

Pollutant	6-month Median	Daily Maximum	Instantaneous Maximum	30-Day Average
Copper (µg/L)	3	12	30	-
Total Chlorine Residual (µg/L)	2	8	60	-

Example 1. Performance Goal Calculation for Copper

Using the background concentration from Table F-13 and water quality objectives from Table F-14, the performance goal for copper is calculated:

Ce = 3 + 15.5 (3 – 2) = 19 µg/L (6-month Median)
Ce = 12 + 15.5 (12 – 2) = 170 µg/L (Daily Maximum)
Ce = 30 + 15.5 (30 – 2) = 460 µg/L (Instantaneous Maximum)

Example 2. Effluent Limitation Calculation for Chlorine (Continuous Discharger)

Using the background concentration from Table F-13 and water quality objectives from Table F-14, the final effluent limitation for chlorine is calculated:

Ce = 2 + 15.5 (2 – 0) = 33 µg/L (6-month Median)
Ce = 8 + 15.5 (8 – 0) = 132 µg/L (Daily Maximum)
Ce = 60 + 15.5 (60 – 0) = 990 µg/L (Instantaneous Maximum)

Example 3. Effluent Limitation Calculation for Chlorine (Intermittent Discharger)

For intermittent chlorine dischargers (such as Encina Power Station, which chlorinates 24 times per day in 5-minute cycles, water quality objectives for total chlorine residual are determined in accordance with the following equation from footnote (c) of Table B:

$$\log y = -0.43 (\log x) + 1.8$$

where:

y = the water quality objective to apply when chlorine is being discharged (μg/L)
x = the duration of uninterrupted chlorine discharges in minutes

For Encina Power Station, which discharges chlorine for 5-minute uninterrupted intervals, the applicable water quality objective for intermittent discharges of total chlorine residual is calculated as follows:

$$\log y = -0.43 (\log 5) + 1.8$$

$$y = 31.6$$

Based on a water quality objective for chlorine of 31.6 μg/L for intermittent chlorine applications, using the equation, Ce = Co + Dm (Co – Cs), an effluent limitation is calculated:

$$Ce = 31.6 + 15.5 (31.6-0) = 521 \ \mu g/L$$

The effluent limitation guidelines at 40 CFR 423.13 (b) (1) state that, for any power plant with a generating capacity of greater than 25 MWe, the discharge of total chlorine residual may not exceed a maximum value of 0.20 mg/L (200 μg/L). Because the more stringent limitation of the Ocean Plan and BAT effluent limitation guidelines are always applied, the instantaneous maximum limitation for total chlorine residual is 200 μg/L.

Acute and Chronic Toxicity

Section III.C of the Ocean Plan (2005) requires only chronic, not acute, toxicity monitoring when the minimum initial dilution is below 100 to 1. The Ocean Plan provides an equation for determining acute toxicity limitations, which allows for a mixing zone for the acute toxicity objective that is 10 percent of the distance from the edge of the outfall structure to the edge of the chronic mixing zone. The Ocean Plan states that this equation applies only when the minimum probable initial dilution is greater than 24 to 1. The Regional Water Board, in consultation with State Board staff, has concluded that an acute toxicity limitation is not required for the discharges from Encina Power Station through Discharge Point 001, which receives a minimum probable initial dilution of 15.5 to 1. Because new information (the revised Ocean Plan) is available since adoption of Order No. 2000-03, the elimination of acute toxicity limitations from the current Order does not violate anti-backsliding prohibitions of the Clean Water Act. The chronic toxicity limitation is retained from Order No. 2000-03.

Effluent Limitations for Power Plants and Heat Exchange Dischargers

Based on the implementing procedures described above, effluent limitations have been calculated for all Table B pollutants from the Ocean Plan and incorporated into the tentative Order. Section III.C.7.d of the Ocean Plan describes compliance determination for Table B pollutants for dischargers that use a large volume of ocean water for once-through cooling and states:

> *Effluent concentration values (Ce) shall be determined through the use of equation 1 considering the minimum probable initial dilution of the combined effluent (in-plant waste streams plus cooling water flow). These concentration values shall then be converted to mass emission limitations as indicated in equation 3. The mass emission limits will then serve as requirements applied to all in-plant waste streams taken together which discharge into the cooling water flow, except for total chlorine residual, acute [if applicable per Section 3 (c)] and chronic toxicity, and instantaneous maximum concentrations in Table B shall apply to, and be measured in, the combined final effluent, as adjusted for dilution with ocean water.*

In accordance with guidance of the Ocean Plan for dischargers that use a large volume of ocean water for once-through cooling, tentative Order No. R9-2006-0043 establishes water quality-based effluent **concentration limitations**, applicable to the **combined discharge** through Discharge Point 001, for total chlorine residual, chronic toxicity, and for all toxic chemicals requiring instantaneous maximum limitations for protection of marine aquatic life. In addition, **mass emission limitations**, applicable to the **combined flow of low volume, in-plant wastes**, are established for pollutants requiring 6-month median and daily maximum limitations for protection of marine aquatic life and for pollutants requiring 30-day average effluent limitations for protection of human health.

c. Revisions of Effluent Limitations from Order No. 2000-03

Most of the water quality-based effluent limitations established by Order No. 2000-03 are retained in tentative Order No. R9-2006-0043. Differences between the water quality-based effluent limitations in the tentative order and Order No. 2000-03 are described below:

i. Mass emission limitations for toxics in the **combined low volume, in-plant discharges**, for the Encina Power Station were based on the combined discharge flow of 863.19 mgd (i.e. total volume of cooling water and other flows being discharged from Discharge Point 001) in Order No. 2000-03. In the tentative Order, the mass emission limitation calculations are based exclusively on the total maximum low volume in-plant wastestream flows (cooling water flows are not factored into the calculations). The mass emission limitations calculations for individual toxics in the tentative Order used a combined low volume flow of 4.09 mgd in conjunction with a Dm value of 15.5 and the water quality objectives listed in Table B of the Ocean Plan.

The maximum combined low volume discharges from the Encina Power Station are 4.09 mgd in volume and include the following waste streams (pursuant to 40 CFR 423, *Effluent Limitations Guidelines for the Steam Electric Power Generating Point Source Category*, metal cleaning wastes are not categorized as low volume waste waters):

- Seepage and Groundwater
- Boiler Blowdown
- Freshwater R.O. Brine
- Seawater R.O. Brine
- Fuel Line/Tank Hydrotest
- Pilot Desalinization Plant
- Low Volume Waste Treatment Facility

The Low Volume Waste Treatment Facility (LVWTF) receives wastewater from several sources and provides treatment prior to discharge to the once-through cooling system (i.e. oil separation, sedimentation). Because the contributing waste streams are combined and treated prior to discharge to the once-through cooling water, the LVWTF is considered a single low volume waste stream with mass-based effluent limitations applied at its discharge point to the once-through cooling water flow. The maximum discharge flow from the LVWTF is 0.2115 mgd and is composed of the following:

- Portable Demineralizer Rinse Flush
- Evaporator Blowdown
- Condenser Cleaning
- Sample Drains
- Floor Drains
- Demineralizer
- Softeners
- R.O. Membrane Cleaning
- Freshwater R.O. Sand Filter Backwash
- Dealkalizer

Performance Goals

Performance goals serve to encourage high effluent quality and support State and federal antidegradation policies. Additionally, performance goals provide all interested parties with information regarding the expected levels of pollutants in the discharge that should not be exceeded in order to maintain the water quality objectives established in the Ocean Plan. Performance goals are not limitations or standards for the regulation of the discharge. Effluent concentrations above the performance goals will not be considered as violations of the permit but serve as red flags that indicate water quality concerns. Repeated red flags may prompt the Regional Water Board to reopen and amend the permit to replace performance goals for constituents of concern with effluent limitations, or the Regional Water Board may coordinate such actions with the next permit renewal.

Constituents that do not have reasonable potential are listed as performance goals in this Order. The following table lists the performance goals established by Order No. R9-2006-0043. These constituents shall be monitored at M-001, but the results will be used for informational purposes only, not compliance determination.

Performance Goals based on the California Ocean Plan

Constituent	Units	Performance Goals					
		Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
					Min	Max	
Arsenic	µg/L	480				1300	86
Cadmium	µg/L	66				170	17
Chromium VI	µg/L	130				330	33
Copper	µg/L	170				460	19
Lead	µg/L	130				330	33
Mercury	µg/L	2.6				6.6	0.65
Nickel	µg/L	330				830	83
Selenium	µg/L	990				2500	250
Silver	µg/L	44				110	9.1
Zinc	µg/L	1200				3200	210
Cyanide	µg/L	66				170	17
Ammonia (expressed as nitrogen)	µg/L	40000				99000	9900
Phenolic Compounds (non-chlorinated)	µg/L	2000				5000	500
Phenolic Compounds (chlorinated)	µg/L	66				170	17
Endosulfan	µg/L	0.3				0.45	0.15
Endrin	µg/L	0.066				0.099	0.033
HCH	µg/L	0.13				0.20	0.066

VIII. Rationale for Receiving Water Limitations

A. Elevated temperature wastes shall comply with limitations necessary to assure protection of the beneficial uses and areas of special biological significance. This limitation is a restatement of water quality objectives for existing dischargers described at Objective 3.A. (1) of the Thermal Plan.

B. Discharges from the Encina Power Station shall not cause violation of water quality objectives as described in the Ocean Plan. Objectives for Bacterial, Physical, Chemical, and Biological Characteristics are restatements of criteria outlined in Sections II.B through II.E of the Ocean Plan.

IX. Rationale for Monitoring and Reporting Requirements

Pursuant to Section 122.48 of 40 CFR, all NPDES permits specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for this facility.

In an effort to standardize monitoring and reporting requirements and in order to support electronic data submittal of discharger self-monitoring reports, reporting units, definitions, and deadlines specified in the tentative Orders have been written consistent with the State Water Resource Control Board's *Water Quality Permit Standards Team Final Report*.

A. Cooling Water Intake Structure Monitoring

Order No. 2000-03 requires the Discharger to annually measure the bar rack approach velocity and the depth of sediment accumulation in the intake channel to demonstrate the optimal operation of the cooling water intake structure. Such monitoring is in support of CWA Section 316(b) requirements that the location, design and capacity of cooling water intake structures reflect the best technology available. The tentative Order retains the requirements of Order No. 2000-03 for velocity and sediment monitoring at the intake structure.

Order No. 2000-03 requires the Discharger to periodically monitor temperature, total suspended solids, turbidity, and pH at the intake structure. Such monitoring is required to determine compliance with certain effluent limitations based on the difference (delta) between influent and effluent values for a particular parameter. The tentative Order retains the requirements of Order 2000-03 for influent monitoring at the intake structure.

B. Effluent Monitoring

In an effort to standardize monitoring and reporting requirements and in order to support electronic data submittal of discharger self-monitoring reports, reporting units, definitions, and deadlines specified in the MRPs for tentative Order No. R9-2006-0043 have been written consistent with the State Water Resource Control Board's *Water Quality Permit Standards Team Final Report*. Monitoring requirements in the tentative MRP are summarized in Table F-15. The tentative MRP contains specific monitoring requirements.

Table F-15. Summary of Effluent Monitoring Frequency

System	Monitoring Frequency
Main Condenser Cooling Water Inflow	
Flow, Temperature	continuous
pH, Turbidity	monthly
Combined Discharge (Discharge Point 001)	
Flow, Temperature	continuous
pH, Turbidity	monthly
Chlorine	weekly
Chronic Toxicity	semiannually
Table B Pollutants (Aquatic Life)	semiannually

System	Monitoring Frequency
Combined Low Volume Wastewaters	
Table B Pollutants	semiannually
Individual Low Volume Wastewaters	
Metal Cleaning Wastewaters (Discharge Point 001-A)	
TSS, O&G	prior to discharge
Iron, Copper	prior to discharge
Other Low Volume Wastewaters (Discharge Points 001-B through 001-H)	
Flow	continuous
pH, TSS, O&G	monthly

Discussion of monitoring requirements in MRP No. 2000-03 and those in the tentative MRP, highlighting differences between the orders, follows.

1. Due to reformatting, many provisions of MRP No. 2000-03 appear in endnotes or in attachments to MRP No. R9-2006-0043.

2. Order No. 2000-03 requires both acute and chronic toxicity monitoring. As discussed previously in the Fact Sheet, only a chronic toxicity limitation is established by tentative Order No. R9-2006-0043, and therefore, only chronic toxicity monitoring is required by the MRP. A chronic toxicity limitation (and quarterly monitoring requirement) will provide more meaningful information regarding the nature of the discharge than an acute toxicity limitation and monitoring requirement in the high volume, dilute flows typical of Discharge Point 001. Chronic toxicity monitoring procedures are changed to conform to the requirements of the 2001 Ocean Plan.

3. Order No. 2000-03 requires semiannual monitoring for 10 metals that have water quality criteria listed in the Ocean Plan for protection of aquatic life. As discussed previously, Order No. 2000-03 did not include combined discharge limitations for organics and non-metals which have aquatic life protection criteria. These additional seven pollutants (i.e. cyanide, ammonia, non-chlorinated phenolic compounds, chlorinated phenolics, endosulfan, endrin, and HCH) were only addressed in the in-plant, low volume monitoring program. In accordance with Section III.C.7.d of the Ocean Plan, tentative Order No. R9-2006-0043 has established concentration-based effluent limitations and semiannual monitoring for these seven additional pollutants for the combined discharge.

4. Order No. 2000-03 requires total residual chlorine in the combined discharge to be monitored on a monthly basis. Although monitoring data for the last four years have not indicated any violations in the total chlorine residual discharge limitation, this monitoring regimen may be insufficient due to the intermittent nature of chlorination cycles (i.e. 4 cycles per day, 25 minutes per Unit per cycle). The monitoring frequency for total residual chlorine in the tentative MRP has been increased from monthly to weekly.

5. Order No. 2000-03 established monitoring requirements for "in-plant waste streams." The discharger was required to composite a flow proportionate sample from specifically identified wastewater streams, which generally included all wastewaters originating from the Encina Power Station, except discharges of once through cooling water and storm water. In-plant waste streams described in Order No. 2000-

03 included Seawater R.O. pretreatment, Saltwater R.O. Brine, Low Volume Waste Treatment Facility, Metal Cleaning Treatment Facility, Boiler Blowdown, Basement Sumps, Fuel Line Hydrotest, and Freshwater R.O. Brine. Analysis of pH, total suspended solids, and a subset of Table B pollutants was required on a semiannual basis.

Proposed Order No. R9-2006-0043 includes monitoring requirements for "combined low volume wastewaters," which are the equivalent of "in-plant waste streams" from Order No. 99-48. In general these wastewaters include all wastewaters originating from the Encina Power Station, except discharges of once through cooling water and storm water. To remain consistent with the definition of low volume wastes from the Effluent Limitations Guidelines for the Steam Electric Power Generating Point Source Category (40 CFR 423), Order No. R9-2006-0043 does not include metal cleaning wastes as a low volume wastewater. The individual, low volume wastewaters recognized by this Order are:

a. Seepage and Groundwater
b. Boiler Blowdown
c. Freshwater R.O. Brine
d. Seawater R.O. Brine
e. Fuel Line/Tank Hydrotest
f. Pilot Desalination Plant
g. Low Volume Waste Treatment Facility

Tentative Order No. R9-2006-0043 requires semiannual collection of a flow-weighted composite sample of low volume wastewaters and monitoring for the full schedule of Table B pollutants at least once during the permit period. The Regional Water Board acknowledges that, at the time of sample collection, it may not be possible to collect a sample aliquot from each low volume wastewater, and therefore certain wastewaters are identified as being of higher priority. The proportion of each waste stream to be added to the composite sample must be based on the actual (preferred) or estimated flow rates for the day on which samples are collected. The following example describes how a flow-weighted composite sample should be collected.

Example 2. Calculation of a Flow-weighted Composite Sample

Say that the following individual low volume wastewaters are sampled. The flow rate for each individual wastewater is determined for that day, and the relative amount/volume, in percent, of each individual waste stream is determined. Using the percentages of each individual waste stream in the total, the amount of each individual waste stream to be composited in a five gallon (18,927 mLs) sample is calculated. In the example, below, on the day of sample collection, seepage and groundwater flow accounts for 33 percent of the total flow of the low volume wastewaters that are sampled. 33 percent of five gallons equals 0.33 x 18,927 milliliters, which equals 6,330 milliliters. (There are 3,785 mLs per gallon and 18,927 mLs per five gallons.)

Table F-16. Example of Flow-weighted Composite Sample

Low Volume Wastewater	Flow (mgd)	Percent of Total Flow	mLs to be Composited in a 5 Gal Sample
Seepage and Groundwater	1.368	33	6,330
Boiler Blowdown	0.372	9	1,721
Freshwater R.O. Brine	0.087	2	403
Seawater R.O. Brine	0.864	21	3,998
Fuel Line/Tank Hydrotest	0.900	22	4,164
Pilot Desalination Plant	0.288	7	1,333
Low Volume Waste Treatment Facility	0.2115	5	979
Total	4.091	100%	18,927

6. Order No. 2000-03 established concentration-based monitoring requirements for discharges from the metal cleaning waste treatment facility (Discharge Point 001-A). The tentative Order retains those monitoring requirements and incorporates mass-based monitoring for total suspended solids, oil and grease, copper and iron as required by 40 CFR 423.13 (b)(5).

7. Order No. 2000-03 established concentration-based monitoring requirements for discharges from low volume waste streams (Discharge Points 001-B through 001-H). The tentative Order retains those monitoring requirements and incorporates mass-based monitoring for total suspended solids and oil and grease as required by 40 CFR 423.12 (b)(3).

8. Proposed Order No. R9-2006-0043 reduces the frequency of monitoring for those constituents that neither an effluent limit is required nor the Reasonable Potential Analysis Procedure is inconclusive.

C. Receiving Water Monitoring

Receiving Water is being monitored semiannually at ten dispersion area stations and four reference area stations for light transmittance, dissolved oxygen and pH at the surface. Temperature is measured at the surface and at depth at twenty-eight stations to characterize the thermal plume. Cabrillo Power I LLC participates with other ocean dischargers in the San Diego Region in an annual regional kelp bed photographic survey.

1. Light Transmittance

The Permit specifies that “Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge.” Significant difference is defined as a statistically significant difference in the means of two distributions of sampling results at the 95% confidence level. No significant differences were found between the mean of the reference stations and the mean of each discharge station (e.g., C-10 to C-30) for light transmittance in 9 of 10 monitoring periods between Spring 2001 and Fall 2005. The receiving water report for the Fall 2004 found a significant difference between the reference stations and the mean of the discharge stations along Transect D, due to the relatively low transmittance at nearshore station D-10, which was attributed to wave activity causing sediment re-suspension.

2. Dissolved Oxygen and pH

The Permit specifies that "The dissolve oxygen concentration shall not at any time be depressed more than 10% from that which occurs, naturally, as the result of the discharge of oxygen demanding waste materials." The dissolved oxygen concentrations at the individual discharge stations were not depressed by more than 10% from the corresponding (similar depth) reference stations in the receiving water for 9 of the 10 monitoring periods between Spring 2001 and Fall 2005. In the Fall 2004 report, the dissolved oxygen was depressed more than 10% at discharge stations C-20, E-10, and E-20.

The Permit specifies that "The pH shall not be changed at any time more than 0.2 units from that which occurs naturally." The pH values were consistent with the Permit requirement for 8 of the 10 monitoring periods. In the Spring 2003 report, values for pH at individual discharge stations did not change more than 0.2 units from corresponding reference stations unless compared to reference stations A-30 and A-50. The pH measured 7.5 and 7.6 at these two reference stations, were lower than all other stations measured that period. In the Fall 2004 report, the pH values at Stations C-50, D-20, and D-30 were more than 0.2 units compared to the referenced stations.

3. Thermal Plume

As an example of the data submittal for temperature, Table F-17 presents the temperature (°F) and depth measurements, offshore Encina Power Plant for Spring 2005.

Table F-17 Temperature (°F) and depth measurements, offshore Encina Power Plant, Spring 2005

Depth (ft)	A				B				C			
	10	20	30	40	10	20	30	40	10	20	30	40
1	63.6	63.8	63.7	63.8	64.3	64.4	64.9	64.0	64.3	64.7	64.1	63.4
5	63.5	63.6	63.6	63.7	63.7	63.6	64.5	62.7	64.2	64.6	63.1	63.4
10	63.5	63.5	63.5	63.1	62.7	62.3	63.9	62.5	63.8	62.0	62.8	63.2
15		63.3	63.2	62.6		59.5	62.9	61.9		61.6	61.1	62.3
20		63.2	63.0	62.1		57.9	60.9	60.4		61.3	61.0	61.1
25			62.8	60.2			57.7	57.6			58.9	58.6
30			62.4	58.5				56.7			57.2	57.3
35				57.1				55.4				55.6
40				56.8				54.9				55.4
45				56.1				54.6				55.0
50				55.4				54.3				54.2

Table F-17 (continued) Temperature (°F) and depth measurements, offshore Encina Power Plant, Spring 2005

Depth	D				E				F			
(ft)	10	20	30	50	10	20	30	50	10	20	30	50
1	62.8	68.8	64.7	63.5	64.6	65.5	65.5	64.1	63.6	63.4	63.4	63.6
5	62.6	65.5	63.8	63.5	64.4	65.3	64.8	64.0	63.5	63.3	63.3	63.4
10	62.5	62.2	62.7	63.3	64.4	63.7	63.9	63.8	63.0	63.1	62.7	63.0
15		62.0	61.2	63.0		63.0	63.5	63.6		61.9	61.7	62.6
20		61.5	61.1	61.7		62.9	63.1	63.5		61.7	60.0	62.2
25			60.7	60.1			59.2	58.3			58.9	58.6
30			57.0	58.9			57.0	56.9			58.3	57.7
35				56.5				55.6				55.5
40				55.5				55.3				55.1
45				54.7				54.8				54.6
50												54.6

Depth	G			
(ft)	10	20	30	50
1	63.8	62.7	62.4	62.9
5	63.7	62.5	62.3	62.8
10	63.6	62.4	62.3	62.4
15		61.8	61.9	60.5
20		61.3	61.7	59.7
25			61.1	57.4
30			57.8	56.5
35				56.1
40				56.0
45				55.6
50				55.2

Kelp Bed Monitoring

The annual regional kelp bed monitoring In addition to participating in the annual regional kelp bed monitoring survey, Cabrillo Power I LLC assesses, pursuant to California Coastal Commission Permit No. A-78-75, four kelp stand study stations. In Spring 2005, mean densities of adult *Macrocystis pyrifera* ranged from 0.01 at Station NKS-1 to 0.18 plans per m^2 at Station CKS-2. The presence of adult plants had increased in recent years (2000-2004) when adults were absent or scare along all four transects. In Spring 2005, however, densities of adult plants decreased at all stations with the exception of the control site, CKS-2. A slight decrease in adult *Macrocystis pyrifera* was also observed in Spring 2004 as compared to Fall 2003.

In the Spring 2005 survey, mean densities of juvenile plants ranged from 0 at Station NKS-1 and SKS-3 to 0.05 per m^2 at Station CKS-2. From 2000 to 2003, the meanjunenile plant densities of all stations remained relatively constant during the spring survey, fluctuating between 0.02 and 0.03 plants per m^2. In 2004 the average density of juvenile plants across all stations fell to 0.003 plants per per m^2. In recent years, mean juvenile Fall plant densities surveyed had fallen from a high of 0.07 plants per m^2 in Fall 2000 to 0.01 plants per m^2 in Fall 2003. In fall 2004, however, overall mean juvenile plant densities increased to 0.045 plants per m^2, while in the Spring 2005 survey, 0.015 plants per m^2 were observed across all stations.

X. Rationale for Provisions

A. Standard Provisions

Standard Provisions, which in accordance with 40 CFR §§122.41and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D to the Order.

B. Special Provisions

1. Reopener Provisions

   This Order may be modified in accordance with the requirements set forth at 40 CFR Parts 122 and 124 to include appropriate conditions or limitations to address demonstrated effluent toxicity based on newly available information, or to implement any U.S. EPA-approved new state water quality standards applicable to effluent toxicity.

2. Special Studies and Additional Monitoring Requirements

   On June 9, 2004, U.S. EPA promulgated new requirements to minimize adverse environmental impacts associated with existing cooling water intake structures under Section 316(b) of the Clean Water Act. This regulation, commonly referred to as "316(b) Phase II", will require existing dischargers of a certain size to adopt new technologies to reduce impingement mortality and entrainment to within a targeted range, or demonstrate a reasonable alternative for compliance. The facility will be required to update existing 316(b) demonstration studies and to provide a basis for selecting a compliance strategy as BTA.

3. Best Management Practices and Pollution Prevention

   Section 402 of the Clean Water Act and U.S. EPA regulations 40 CFR 122.44 (k) authorize the requirement of best management practices, or BMPs, in NPDES permits. BMPs are measures for controlling the generation of pollutants and their release to waterways. These measures are important tools for waste minimization and pollution prevention.

   The tentative Orders require the Discharger to maintain a BMP Plan that incorporates practices to achieve the objectives and specific requirements in the permit. The BMP Plan must be revised as new practices are developed for the facility.

   The BMP Plan must be designed to prevent, or minimize the potential for, the release of toxic or hazardous pollutants, including any such pollutants from ancillary activities to waters of the United States. The BMP Plan shall be consistent with the general guidance contained in the U.S. EPA *Guidance Manual for Developing Best Management Practices (BMPs)* (EPA 833-B-93-004). The Discharger shall maintain the BMP Plan in an up-to-date condition and shall amend the BMP Plan in accordance with 40 CFR 125.100 - 125.104 whenever there is a change in facility design, construction, operation, or maintenance, which materially affects the potential for discharge from the Encina Power Station facilities of significant amounts of hazardous or toxic pollutants into waters of the United States.

XI. Public Participation

The California Regional Water Quality Control Board, San Diego Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Encina Power Station. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the posting of the item on the Regional Board web page and publication in the San Diego Union-Tribune.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on **August 2, 2006.**

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date:	**August 16, 2006**
Time:	**9:00 A.M**.
Location:	**Water Quality Control Board** **9174 Sky park Court** **San Diego, California 92123-4340**

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is www.waterboards.ca.gov/sandiego where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

TENTATIVE Order No. R9-2006-0043, the Report of Waste Discharge (RWD), related documents, comments received, and other information are on file and may be inspected at the Regional Board office located at 9174 Sky Park Court, San Diego between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (858) 467-2952.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Bob Morris at (858) 467-2962 or Eric Becker at (858) 492-1785..

XII. Endnotes

1. Samples shall be collected and analyzed for total chlorine residual at times when the concentrations of total chlorine residual in the combined discharge are greatest. On the day the samples are collected, the duration of chlorination and the time of sample collection shall be reported. The instantaneous chlorine residual limitation for intermittent discharges shall apply to this sample.

2. This sample should be taken when there is no chlorine residual resulting from chlorination of the main condensers. The 6-month and daily maximum limits for continuous chlorine discharges shall apply.

3. Sampling for general toxicity tests should be performed on days where expected inputs from in-plant waste streams are maximized or immediately subsequent to changes in the character of the discharge.

4. During chemical metal cleaning processes, toxicity testing shall be performed. Sampling shall occur at such time as to maximize the input from metal cleaning wastes. The sample shall consist of aliquots taken at least every hour that discharge of such waste occurs for a maximum of 24 hours. It is not necessary to perform toxicity testing during the discharge of Air Heater wash or Hypochlorinator wash waters.