CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

FACT SHEET
APPLICATION FOR
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
AND
WASTE DISCHARGE REQUIREMENTS
TO DISCHARGE TO STATE WATERS

Permittee Name:	IID El Centro Generating Station	Public Notice No.: 7-04-27
NPDES Permit No.:	CA0104248	Board Order No.: R7-2004-0086
Mailing Address:	IID El Centro Generating Station P.O. Box 937 Imperial, CA 92251	
Location:	485 E. Villa Ave El Centro, CA 92243	
Contact Person:	Henryk A. Olstowski	
Telephone:	(760) 339-0517	

I. Status of Permit

Imperial Irrigation District, owner/operator (hereinafter referred to as the discharger), of the El Centro Generating Station submitted an application to update its Waste Discharge Requirements (WDRs) and to renew its permit to discharge wastewater under the National Pollutant Discharge Elimination System (NPDES). The application is for the wastewater treatment facility located at the address mentioned above.

II. Facility Description

Imperial Irrigation district owns the El Centro Generating Station, which is a gas and oil fired power plant in the city of El Centro. The plant has a total of 240 Megawatts (MW) and consists of two (2) steam units and one (1) combined cycle unit. The steam units are rated at 77 MW and 46 MW, and the combined cycle unit is rated at 117 MW (85 MW gas turbine and 32 MW steam turbine). All units are cooled using water circulated through unit specific cooling towers. The facility has a potential to discharge a maximum of 1.04 million gallons per day (MGD) of industrial cooling water to Central Drain No. 5, which flows into the Alamo River, which flows to the Salton Sea.

This facility provides treatment and chlorination and dechlorination process units. Cooling tower supply water is treated with corrosion inhibitors, deposit control agents, microbial control and a coagulant and flocculent. In addition chlorination is used as an oxidizing biocide and sulfuric acid is added for pH control. The effluent is dechlorinated using a disulfite based solution prior to discharge to Central Drain No. 5 via an outfall pipe.

III. Description of Discharge

The final effluent is discharged through outfall 001 to Central Drain No. 5 in the NE ¼ of Section 32, T15S, R14E, SBB&M. The discharge consists of industrial cooling tower wastewater.

IV. Receiving Water

The receiving water for Outfall OO1 is the Central Drain No. 5. The Central Drain No. 5 flows into the Alamo River, which eventually discharges to the Salton Sea.

1. The designated beneficial uses of waters in the Imperial Valley Drains are:

    a. Fresh Water Replenishment of Salton Sea (FRSH)
    b. Water Contact Recreation (REC I)[1]
    c. Non-Contact Water Recreation (REC II)
    d. Warm Water Habitat (WARM)
    e. Wildlife Habitat (WILD)
    f. Preservation of Rare, Threatened, or Endangered Species (RARE)[2]

V. Proposed Technology-Based Effluent Limitations

Regulations promulgated in 40 CFR §125.3(a)(2) require technology-based effluent limits for industrial dischargers to be placed in NPDES permits based on Best Practicable Control Technology (BPT).

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for facilities other than publicly owned treatment works [defined in Section 304(b)]. Section 301(b)(1)(A) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on best practicable control technology currently available as defined by the Environmental Protection Agency (EPA) administrator.

Based on this statutory requirement, EPA developed effluent limitation guidelines, which are specified in 40 CFR Part 423. These technology-based regulations apply to steam electric power generating point sources and identify the minimum level of effluent quality attainable by best practicable control technology currently available.

Effluent Limitation Guidelines

The hydrogen ion (pH) of the effluent shall be maintained within the limits of 6.0 to 9.0.

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

VI. Proposed Water Quality-Based Effluent Limitations (WQBEL's)

Effluent discharged from this facility could contain pollutants in sufficient quantities to affect receiving water quality. Pursuant to Section 13263, Article 4, Chapter 4 of the Porter Cologne Water Quality Control Act, the Regional Boards are required to issue Waste Discharge Requirements for discharges that could affect the quality of the State's waters. Furthermore, Federal Regulation 40 CFR 122.1 requires the issuance of NPDES permits for pollutants discharged from a point source to the waters

[1] Unauthorized Use. The only REC I usage that is known to occur is from infrequent fishing activity.
[2] Rare, endangered, or threatened wildlife exists in or utilizes some of these waterway(s). If the RARE beneficial use may be affected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered, or threatened species on a case-by-case basis upon the California Department of Fish and Game on its own initiative and/or at the request of the Regional Board; and such substantiation must be provided within a reasonable time frame as approved by the Regional Board.

of the United States. The draft discharge requirements contain specific discharge limitations for selected pollutants.

Constituents	Basis for Limitations
Total Dissolved Solids	High levels of TDS can adversely impact aquatic life. The TDS limit is from the Basin Plan of the Region.
Hydrogen Ion (pH)	Hydrogen Ion (pH) is a measure of Hydrogen Ion concentration in the water. A range specified between 6 to 9 ensures suitability of biological life. This limitation has been adopted in the Basin Plan of the Region.
Toxicity	Toxicity testing ensures that the effluent does not contain metals, chemicals, pesticides or other constituents in concentrations toxic to aquatic life.
Total Residual Chlorine	USEPA Ambient Water Quality Criteria For Chlorine, 1984
Flow	The design capacity of the treatment plant is 1.04 MGD.

The U.S. Environmental Protection Agency published the adopted California Toxics Rule (CTR) (40 CFR §131.38). The CTR promulgates new criteria for both human health protection and protection of aquatic life. New numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants are listed. In addition, the CTR contains a compliance schedule provision, which authorizes the State to issue schedules of compliance for new or revised NPDES permit limits based on the federal criteria when certain conditions are met.

The following final water quality based effluent limitations are based on monitoring results and using the California Toxic Rule and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (The calculations are shown in Attachment “A”)

Cyanide	Average Monthly Effluent Limit (µg/L) = 0.5 Maximum Daily Effluent Limit (µg/L) = 1.0
Copper	Average Monthly Effluent Limit (µg/L) = 2.39 Maximum Daily Effluent Limit (µg/L) = 4.80
Nickel	Average Monthly Effluent Limit (µg/L) = 6.71 Maximum Daily Effluent Limit (µg/L) = 13.5
Selenium	Average Monthly Effluent Limit (µg/L) = 4.09 Maximum Daily Effluent Limit (µg/L) = 8.22
Thallium	Average Monthly Effluent Limit (µg/L) = 6.3 Maximum Daily Effluent Limit (µg/L) = 12.6
Zinc	Average Monthly Effluent Limit (µg/L) = 44.8 Maximum Daily Effluent Limit (µg/L) = 90.0

The discharger is not able to consistently comply with the new effluent limitations for Cyanide, Copper, Nickel, Selenium, Thallium, and Zinc. Therefore, interim limits have been set as follows:

The governing Water Quality Objective (WQO) for cyanide is 1.0 ug/L, the saltwater aquatic life criteria contained in the CTR. Cyanide has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBELs calculated pursuant to State Implementation Policy (SIP) procedures are 0.5 µg/L monthly average and 1.0 µg/L daily maximum. The Discharger indicated in its March 22, 2004 Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for cyanide is required. The previous permit did not contain an effluent limit for cyanide, and it is not possible to statistically determine current plant performance based on eight data points. Therefore, the interim effluent limit is the Maximum Effluent Concentration (MEC), 10.0 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

The governing Water Quality Objective (WQO) for copper is 3.1 ug/L, the saltwater aquatic life criteria contained in the CTR. Copper has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBELs calculated pursuant to State Implementation Policy (SIP) procedures are 2.39 µg/L monthly average and 4.80 µg/L daily maximum. The Discharger indicated in its March 22, 2004, Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for copper is required. The previous permit did not contain an effluent limit for copper, and it is not possible to statistically determine current plant performance based on eight data points. Therefore, the interim effluent limit is the Maximum Effluent Concentration (MEC), 200.0 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

The governing Water Quality Objective (WQO) for nickel is 8.2 ug/L, the freshwater aquatic life criteria contained in the CTR. Nickel has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBEL calculated pursuant to State Implementation Policy (SIP) procedures are 6.71 µg/L monthly average and 13.5 µg/L daily maximum. The Discharger indicated in its March 22, 2004, Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for nickel is required. The previous permit did not contain an effluent limit for nickel, and it is not possible to statistically determine current plant performance based on eight data points. Therefore, the interim average monthly effluent limit is the Maximum Effluent Concentration (MEC), 12.0 µg/L. The interim maximum daily effluent limit (MDEL) is 13.5 µg/L, the MDEL calculated pursuant to the SIP. These interim effluent limits are based on the best professional judgment of Regional Board staff.

The governing Water Quality Objective (WQO) for selenium is 5.0 ug/L, the freshwater aquatic life criteria contained in the CTR. Selenium has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBELs calculated pursuant to State Implementation Policy (SIP) procedures are 4.09 µg/L monthly average and 8.22 µg/L daily maximum. The Discharger indicated in its March 22, 2004, Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for selenium is required. The previous permit did not contain an effluent limit for selenium, and it is not possible to statistically determine current plant performance based on eight data points. Therefore, the interim effluent limit is the Maximum Effluent Concentration (MEC), 66.0 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

The governing Water Quality Objective (WQO) for thallium is 6.3 ug/L, the freshwater aquatic life criteria contained in the CTR. Thallium has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBELs calculated pursuant to State Implementation Policy (SIP) procedures are 6.30 µg/L monthly average and 12.60 µg/L daily maximum. The Discharger indicated in its March 22, 2004, Feasibility Study that it is infeasible to

comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for thallium is required. The previous permit did not contain an effluent limit for thallium, and it is not possible to statistically determine current plant performance based on eight data points. Therefore, the interim effluent limit is the Maximum Effluent Concentration (MEC), 14.0 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

The governing Water Quality Objective (WQO) for zinc is 81 ug/L, the saltwater aquatic life criteria contained in the CTR. Zinc has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBEL calculated pursuant to State Implementation Policy (SIP) procedures are 44.8 µg/L monthly average and 90.0 µg/L daily maximum. The Discharger indicated in its March 22, 2004, Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for zinc is required. The previous permit did not contain an effluent limit for zinc, and it is not possible to statistically determine current plant performance based on eight data points. Therefore, the interim effluent limit is the Maximum Effluent Concentration (MEC), 240.0 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

VII. Proposed Effluent Limitations

Table 1, contained later in this Fact Sheet, summarizes the proposed effluent limitations for Outfall 001. Proposed effluent limitations are based on effluent limit guidelines, WQBL's and Colorado River Basin Plan Water Quality Standards.

VIII. Monitoring Requirements

Monitoring for those pollutants expected to be present in the Outfall OO1 will be required as shown on the proposed monitoring and reporting program and as required in the "*Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*" adopted March 2, 2000.

IX. Information Sources

While developing effluent limitations and receiving water limitations, monitoring requirements, and special conditions for the draft permit, the following information sources were used:

(1) EPA NPDES Application Forms 1 and 2A dated September 15, 2003.
(2) Code of Federal Regulations – Title 40
(3) Water Quality Control Plan (Colorado River Basin – Region 7) as amended to date.
(4) Regional Board files related to IID- El Centro Generating Station NPDES permit CA0104248.
(5) Porter-Cologne Water Quality Control Act with additions and amendments effective January 1, 2000.
(6) Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California adopted March 2, 2000.
(7) California Toxics Rule, published May 18, 2000 by U.S. EPA.
(8) National Toxics Rule (NTR), adopted by U.S. EPA on February 5, 1993.

X. Written Comments

Interested parties and agencies are invited to submit written comments on the proposed Waste Discharge Requirements and the Regional Board's Executive Officer's proposed determinations. Comments should be submitted in writing not later than June 14, 2004 to:

Executive Officer

California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

The application number shall appear on the first page of any submitted comments. All comments received by the above date will be considered in the formulation of the final determinations.

XI. Public Hearing

The Waste Discharge Requirements will be considered by the Regional Board at a public hearing to be held at the Palm Desert Civic Center Council Chambers, 73-510 Fred Waring Drive, Palm Desert, CA 92260, on July 1, 2004.

XII. Waste Discharge Requirements Appeals

Any person may petition the State Board to review the decision of the Regional Board regarding Waste Discharge Requirements. A petition must be made within 30 days of the Regional Board's hearing.

XIII. Additional Information

Persons wishing further information may write to the following address:

California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

or call the Regional Board at (760) 346-7491.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

TABLE 1
PROPOSED EFFLUENT AND RECEIVING WATER LIMITATIONS
NPDES PERMIT NO. CA0104248
BOARD ORDER NO. R7-2004-0086
IMPERIAL IRRIGATION DISTRICT, OWNER/OPERATOR
EL CENTRO GENERATING STATION

Effluent Limitations

1. Representative samples of wastewater discharged to Central Drain No. 5 from the treatment systems shall not contain constituents in excess of the limits indicated below. The discharge to the Central Drain No.5 shall be monitored at a location which is acceptable by the Regional Board's Executive Officer or his designee:

Constituent	Unit	30-Day Arithmetic Mean Discharge Rate[3]	7-Day Arithmetic Mean Discharge Rate[4]	Daily Maximum
Total Residual Chlorine	mg/L	0.01		0.02
Total Dissolved Solids	mg/L	4000		4500
Flow	mgd	-----	-----	1.04

2. The hydrogen ion (pH) of the effluent shall be maintained within the limits of 6.0 to 9.0.

3. The effluent shall not contain heavy metals, chemicals, pesticides or other constituents in concentrations toxic to aquatic life.

4. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

4. Stormwater discharges from the facility shall not cause or threaten to cause pollution, contamination, or nuisance.

5. Stormwater discharges from the facility shall not contain hazardous substances equal to or in excess of a reportable quantity listed in 40 CFR, Part 302.

6. There shall be no acute or chronic toxicity in the treatment plant effluent nor shall the treatment plant effluent cause any acute or chronic toxicity in the receiving water. All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in human, plant, animal, or indigenous aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, or bioassays of appropriate duration or other appropriate methods specified by the Regional Board.

7. Wastewater discharged to the Central Drain No. 5 shall not exceed these effluent limits. These limits are calculated based on monitoring results and using the California Toxic Rule and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of

[3] 30 Day Mean-The arithmetic mean of pollutant parameter values of samples collected in a calendar month s as specified in the Monitoring and Reporting Program.
[4] 7 Day Mean-The arithmetic mean of pollutant parameter values of samples collected in a calendar week (Sunday – Saturday) as specified in the Monitoring and Reporting Program.

California for water quality based effluent limits:

Constituent	Units	Date Effluent Limit Becomes Effective	Average Monthly Effluent Limit	Maximum Daily Effluent Limit
Copper (Interim)	µg/L	July 1, 2004	200.0	200.0
Copper (Final)	µg/L	July 1, 2009	2.39	4.8
Cyanide (Interim)	µg/L	July 1, 2004	10.0	10.0
Cyanide (Final)	µg/L	July 1, 2009	0.5	1.0
Nickel (Interim)	µg/L	July 1, 2004	12.0	13.5
Nickel (Final)	µg/L	July 1, 2009	6.71	13.5
Selenium (Interim)	µg/L	July 1, 2004	66.0	66.0
Selenium (Final)	µg/L	July 1, 2009	4.09	8.22
Thallium (Interim)	µg/L	July 1, 2004	14.0	14.0
Thallium (Final)	µg/L	July 1, 2009	6.3	12.6
Zinc (Interim)	µg/L	July 1, 2004	240.0	240.0
Zinc (Final)	µg/L	July 1, 2009	44.8	90.0

Receiving Water Limitations

1. Receiving water limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit. The discharge shall not cause the following in the Central Drain No. 5.

   a. Depress the concentration of dissolved oxygen to fall below 5.0 mg/L. When dissolved oxygen in the receiving water is already below 5.0 mg/L, the discharge shall not cause any further depression.

   b. The presence of oil, grease, floating material (liquids, solids, foam and scum) or suspended material in amounts that create a nuisance or adversely affect beneficial uses.

   c. Result in the deposition of pesticides or combination of pesticides to be detected in concentrations that adversely affect beneficial uses.

   d. Aesthetically undesirable discoloration or odors in the receiving water.

   e. A significant increase in fungi, slime, or other objectionable growth.

f. Increase turbidity that results in affecting beneficial uses.

g. The normal ambient pH to fall below 6.0 or exceed 9.0 units.

h. Impact the receiving water temperature, resulting in adversely affecting beneficial uses.

i. Result in the deposition of material that causes nuisance or adversely affects beneficial uses.

j. The chemical constituents to exceed concentrations that adversely affect beneficial uses or create nuisance.

k. Toxic pollutants to be present in the water column, sediments or biota in concentrations that adversely affect beneficial uses or that produce detrimental physiological responses in human, plant, animal, or aquatic life.

l. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause or otherwise adversely affect beneficial uses.

2. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board as required by the Federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Regional Board will revise and modify this Permit in accordance with such more stringent standards.