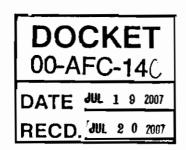
1819 Aston Avenue, Suite 105 Carlsbad, CA 92008

Direct: (760) 710-2150 Fax: (760) 710-2158

El Segundo Power II LLC

July 19, 2007

Mr. Christopher Meyer Compliance Project Manager Docket No. 00-AFC-14 California Energy Commission 1516 Ninth Street, MS-15 Sacramento, CA 95814



RE: RECLAIMED WATER USE PLAN TO SATISFY WATER RES-1 EL SEGUNDO POWER REDEVELOPMENT PROJECT DOCKET NO. 00-AFC-I4

Dear Mr. Meyer:

El Segundo Power II LLC (ESP II) is pleased to submit the enclosed Reclaimed Water Use Plan (RWUP) to satisfy Condition of Certification (COC) WATER RES-1. The RWUP presents assumptions on water demand as presented in the February 2005 Commission's Decision. We recognize that a Petition to Amend the El Segundo Power Redevelopment Project has been submitted (docketed June 19, 2007) requesting a change to the licensed power generating equipment. For the licensed plant configuration and the Petition to Amend configuration, ESP II has proposed the use of reclaim water where required and technically feasible.

If you have any questions or comments, please do not hesitate to contact me at (760) 710-2150 or George Piantka at (760) 710-2156.

Sincerely,

Christopher J. Doyle

Regional Development Engineering Manager

Enclosure:

 Reclaim Water Use Plan for the El Segundo Power Redevelopment Project, Docket # 00-AFC-14, July 19, 2007

RECLAIMED WATER USE PLAN TO SATISFY CONDITIONS OF CERTIFICATION WATER RES-1 EL SEGUNDO POWER REDEVELOPMENT PROJECT El Segundo Generating Station 301 Vista Del Mar El Segundo, California

July 19, 2007

Prepared for: El Segundo Power II LLC 301 Vista Del Mar El Segundo, California

Prepared by:



3347 Michelson Drive, Suite 200 Irvine, California 92612

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Acronyms and Abbreviations _____

AFC	Application for Certification
AFY	acre-feet per year
CCR	California Code of Regulations
CEC	California Energy Commission
COC	Condition of Certification
CPM	Compliance Project Manager
DHS	California Department of Health Services
ESGS	El Segundo Generating Station
ESPR	El Segundo Power Redevelopment Project
gpm	gallons-per-minute
LORS	Laws, Ordinances, Regulations and Standards
NPDES	National Pollutant Discharge Elimination System
P&ID	Piping and Instrumentation Diagram
RES	Resource
RWUP	Reclaimed Water Use Plan
SWRWQCB	State Water Resources Control Board
WBMWD	West Basin Municipal Water District

Executive Summary

In accordance with the California Energy Commission's (CEC) Decision on the El Segundo Power Redevelopment (ESPR or project) Project Shaw Environmental Inc. has prepared this Reclaimed Water Use Plan (RWUP) on behalf of El Segundo Power II LLC (ESP II) to satisfy Condition of Certification (Condition) Water Resources (WATER RES) -1. WATER RES-1 requires the use of reclaimed water to minimize the overall consumption of potable water at the El Segundo Generating Station (ESGS) (Figure 1, Site Location Map). During this project the reclaimed water is scheduled to be used for high-volume uses such as makeup and steam injection and will be provided by the West Basin Municipal Water District (WBMWD) at approximately 112-acre-feet-per-year (AFY). ESPR will conform to all applicable Laws, Ordinances, Regulations, and Standards (LORS), including those specified in the California Code of Regulations (CCR) Title 22.

Condition WATER RES-1 requires the project owner to use reclaimed water for all in-plant process water needs except for specifically excluded uses or where it is not feasible. This RWUP summarizes the specific processes that will utilize reclaimed water. All processes within the new generation units that require water will be using reclaimed water with the exception of those applications that were specifically excluded uses such applications that will utilize potable water include evaporation cooler makeup, drinking water, sanitary, eye wash water and shower stations, and fire suppression.

In accordance with Condition WATER RES-2 in the CEC decision, ESP II is to install a water metering device for the project. ESPR will include metering devices on the reclaimed water pipelines serving the project. These metering devices will be capable of differentiating between uses by the new generation units and the existing Units 3 and 4 to report water demand. ESP II will provide a report on the servicing, testing, and calibration of the metering devices and operation in the annual compliance report. ESP II will submit the required water use summary to the CEC Compliance Project Manager (CPM) for review as part of the Annual Compliance Report for the life of the project.

This RWUP includes a detailed revised project design (site layout), operational plan (metering and reporting), and water balance, for the use of reclaimed water for review and approval by the CPM. Condition WATER RES-1 also requires a heat balance associated with the use of reclaimed water. However, after evaluation, the project owner has determined that there is no significant heat transfer associated with the use of reclaim water which contributes to any waste stream. As such, no new heat balance is required, since the project heat balances are accurate.

¹ The estimated annual average usage of reclaim water is based on the existing February 2005 Commission Decision permitted project (i.e. 630 Mega Watts [MW] combine cycle design). The usage will be adjusted based on the proposed project modifications detailed in the Petition To Amend, Docketed June 18, 2007.

1.0 CEC Conditions of Certification

ESP II will comply with the following CEC's Conditions of Certification provided in the February 2005 Commission Decision:

WATER RES-1: The project owner will use reclaimed water for all in-plant process water needs, except for those specifically excluded uses, unless it can be demonstrated that its use is not compatible with any particular application. Specifically, exceptions from using reclaimed water include fire control water, sanitary water, potable water, and once-through cooling water². The project owner will submit a RWUP describing a detailed revised project design, operational plan, water balance, and heat balance for the use of reclaimed water for review and approval by the CPM prior to the start of any site mobilization activities for the project or any linear element. This RWUP will be consistent with all applicable LORS, including CCR Title 22 regulations.

All in-plant water needs that the project owner claims cannot be met using reclaimed water, other than those exceptions, will be identified and a discussion of the infeasibility of reclaimed water use for these needs will be included in the RWUP for review and approval by the CPM. Site mobilization activities will not be initiated until a CPM approves the RWUP.

Verification: The project owner will submit the RWUP to the CPM for review and approval 60 days prior to the start of any site mobilization activities associated with the project or any linear elements. The RWUP must be approved by the CPM before the start of site mobilization.

WATER RES-2: Only potable water from the City of El Segundo or reclaimed water from the WBMWD will be used by the project for uses other than once-through cooling. The process water supply will be reclaimed water. A backup water supply has not been included in the project design or operational plan, and the project will not operate during periods when reclaimed or potable water is not available in sufficient quantities from the primary supply sources. The project owner will report the periods of nonoperation due to unavailability of water from any source in the Annual Compliance Report.

The project owner will install onsite metering and recording devices and record on a monthly basis all water used by the ESPR, except for water used for once-through cooling, including the amount of reclaimed, and non-reclaimed water used by the project, with the source and amount of all reclaimed and non-reclaimed water identified. The annual summary will include the monthly range, monthly average, and total amounts of reclaimed and non-reclaimed water identified by amount and source used by the project in both gallons-per-minute (gpm) and acre-

² Per the Petition to Amend, docketed June 18, 2007, ESP II intends to eliminate the use of ocean water for cooling for the ESPR project if the proposed project modifications are approved.

feet. Following the first year of operation, the annual summary will also include the yearly range and yearly average of reclaimed and non-reclaimed water identified by amount and source used by the project. This information will be supplied to the CPM in the Annual Compliance Report for review and approval throughout the life of the project.

Verification: No less than 60 days prior to the start of operation of ESPR, the project owner will submit to the CPM evidence that metering devices have been installed and are operational on the pipelines serving and within the project. These metering devices will be capable of differentiating between uses of these supplies by ESPR in order to report water demand. The project owner will provide a report on the servicing, testing and calibration of the metering devices and operation in the annual compliance report. The project owner will submit the required water use summary to the CPM for review as part of the Annual Compliance Report for the life of the project.

The ESPR project will utilize reclaimed water for all but the exempted uses. The anticipated water quality of the potable and reclaimed water supplies is provided in Table 1 below.

Table 1. West Basin Municipal Water District Water Quality Data

Constituent	Potable Water (mg/L)	Reclaimed Water (mg/L)
Calcium	46	0.029
Magnesium	19	0.015
Sodium	59	5.4
Potassium	3	0.53
Alkalinity (as CaCO3)	100	15.3
Hardness (as CaCO3)	NR	0.13
Sulfate	129	NR
Chloride	60	NR
Nitrate (as N)	0	NR
Fluoride	0.20	NR
Aluminum	0.08	NR NR
Silica	NR	0.39
Total dissolved solids (TDS)	440	17.5
pH (pH unit)	8.2	7.0
Conductivity (µmho/cm)	NR	40.8

Note: 1 Data Provided by West Basin Municipal Water District, Data represents Water quality yearly averaged values reported during 2006.

The ESPR project anticipates the water demands listed in Table 2.

Table 2. Estimated Water Demand¹

Units	Maximum (gallons-per-day)		
	Reclaimed	Potable	
3 & 4	290,000	1,200,000	
New Generating Units	440,0001	144,000	
Total	730,000	1,244,000	

¹Based on the design presented in the February 2005 Commission Decision. The water demand for proposed project modifications are detailed in the Petition To Amend, docketed June 18, 2007.

2.0 Reclaimed Water Use Guidelines and Prohibitions

According to the El Segundo City Code 12-1-6(D), the City is committed to a policy of water reclamation in order to provide an alternative source of water for non-domestic use and to reduce costs of wastewater treatment and disposal. Based on a study of State of California policies on water reclamation, the following section outlines certain guidelines and prohibitions for the use of reclaimed water during the ESPR project.

Reclaimed Water Use Guidelines and Prohibitions:

- Reuse Water Quality Requirements and Limitations of this Order shall meet the most current CCR Title 22 regulations.
- Recycled water is defined in Section 13050(n) of the California Water Code as water
 which, as a result of treatment of waste, is suitable for a direct beneficial use or a
 controlled use that would not otherwise occur and is, therefore, considered a valuable
 resource.
- The treatment, storage, distribution, or reuse of recycled water shall not create a nuisance as defined in Section 13050(m) of the California Water Code.
- No recycled water shall be applied to irrigation areas during periods when soils are saturated.
- Recycled water shall not be allowed to escape from the designated use area(s) as surface flow that would either pond and/or enter waters of the state. It should be noted that on February 24, 2004, the State Water Resources Control Board (SWRWQCB) distributed a letter to all Regional Board Executive Officers addressing incidental runoff of recycled water associated with over-spray and overflow of ponds that contain recycled water during storms. This site and the proposed ESPR project does include the use recycled water for landscape irrigation.
- Spray or runoff shall not enter a dwelling or food handling facility, and shall not
 contact any drinking water fountain, unless specifically protected with a shielding
 device.
- Secondary recycled water shall not be applied so as to cause runoff or degradation of any water body or wetland.
- Recycled water shall not be applied in groundwater recharge and wellhead protection areas (so designated by local agencies).
- The use of recycled water shall not cause rising groundwater discharging to surface waters to impair surface water quality objectives or beneficial uses.

- The incidental discharge of recycled water to waters of the State shall not unreasonably affect present and anticipated beneficial uses of water, and not result in water quality less than that prescribed in water quality control plans or policies.
- No recycled water shall be discharged from treatment facilities, irrigation holding tanks, storage ponds, or other containment, other than for permitted reuse in accordance with this Order, other Board issued Waste Discharge Requirements or National Pollutant Discharge Elimination System (NPDES) permit, contingency plan in an approved Water Reuse Program (NOI report), or for discharge to a municipal sewage treatment system.
- Recycled water shall not be used as a domestic water supply.
- There shall be no cross-connection between potable water supply and piping
 containing recycled water. All users of recycled water shall provide for appropriate
 backflow protection for potable water supplies as specified in Title 17, Section 7604
 of the CCR or as specified by the California Department of Health Services (DHS).

The ESPR project will utilize reclaimed water for all but the exempt uses.

The following is a summary of processes, water source, and water quality that is planned for the permitted ESPR Project:

- Reclaim water
 - o Heat Recovery Steam Generation (HRSG) Makeup
 - HRSG Blowdown Quench Tank Makeup
 - o Power Augmentation Steam Injection
 - Blowdown Quench Tank Makeup
 - Irrigation (existing use)
- Potable (Not Reclaim)
 - Evaporative Cooler Makeup
 - Turbine Wash
 - Various Plant Uses
 - Drinking
 - o Sanitary
 - Eye Wash and Shower Stations
 - Fire Suppression

Potable water is to be used for evaporation cooler makeup because the first pass reverse osmosis water is not compatible with the evaporative cooler media.

3.0 Project Design

Condition WATER RES-1 requires the submission of a revised project design illustrating reclaimed water use as part of the overall water balance. The Site Layout (Figure 2), and schematic of water flow and maximum daily peak flow (Figure 3) together serve as the revised project design based on February 2005 Commission Decision of the increased combined cycle configuration. Equipment layout, Design and Piping and Instrumentation Diagrams (P&IDs) will be included in the ordinary project design documents submitted as part of the engineering Conditions.

4.0 Operational Plan (Monitoring and Reporting)

As required by the Conditions WATER RES-1, the use of recycled water for uses other than the specifically exempted uses in the Water Resources section of the Application For Certification (Docket 00-AFC-14) will be implemented by the use of reclaimed water from WBMWD. Reclaim and reuse of treated water from onsite activities as part of the ESPR is not planned at this time. Reclaimed water not lost through evaporation is discharged, following treatment, at discharge point 001. The proposed uses of reclaimed water at various locations are shown in Figure 2 (Schematic of Water Flow and Maximum Daily Peak Flow).

ESP II will install onsite metering and recording devices and record on a monthly basis all water used by ESPR, except water used for once-through cooling, including the amount of reclaimed and non-reclaimed water used by the project, with the source and amount of all reclaimed and non-reclaimed water identified. The annual summary will include the monthly range, monthly average, and total amounts of reclaimed and non-reclaimed water identified by amount and source used by the project in both gallons-per-minute and acre-feet. Following the first year of operation, the annual summary will also include the yearly range and yearly average of reclaimed and non-reclaimed water identified by amount and source used by the project. This information will be supplied to the CPM in the Annual Compliance Report for review and approval for the life of the project.

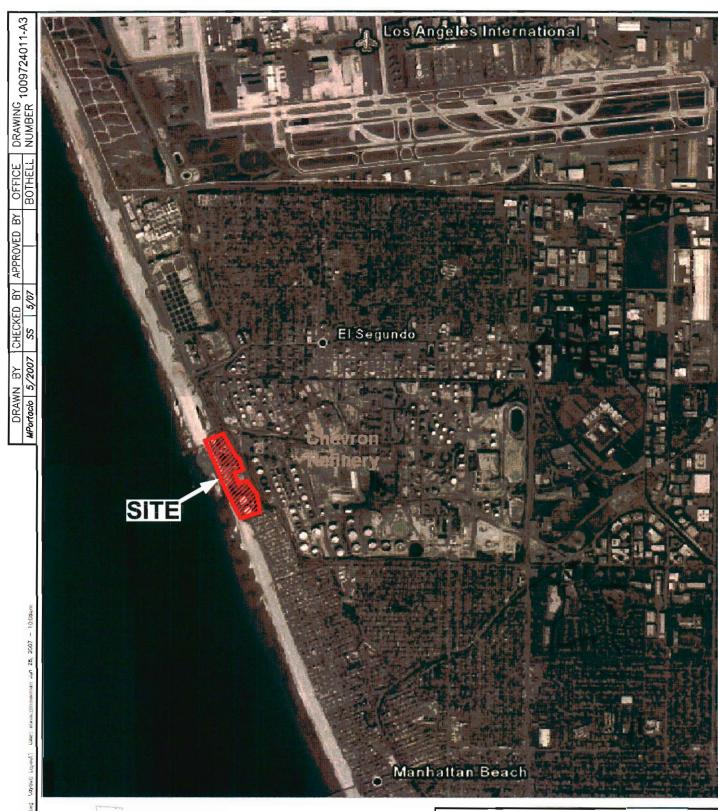
The water from the WBMWD will be supplied to the plant via a new 10-inch diameter pipeline connected at the intersection of Richmond Street and El Segundo Boulevard. The reclaimed water supply line will be distributed to the plant through various manifold connections after in plant treatment or without treatment for use as steam cycle makeup, closed loop auxiliary cooling system makeup, and steam injection to the combustion turbines. This reclaimed water use will be monitored by a flow meter installed on the line prior to any plant take offs and will record by electronic means instantaneous flow rate, and totalized flow monthly as required for reporting purposes, as described in WATER RES-2. The specifications of the metering device will be provided as part of the plant design specification package.

5.0 Future Evaluation

ESP II will continue to develop new uses for reclaimed water in the future and evaluate the feasibility of implementing new equipment for the ESPR project.

Figures

Figures





NO SCALE



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FIGURE 1 SITE LOCATION MAP

EL SEGUNDO POWER ILC

SOURCE: GOOGLE EARTH



