HIGH DESERT
POWER PROJECT LLC
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PETITION FOR MODIFICATION TO USE RECLAIMED WATER

Submitted by the High Desert Power Project
To Modify
CEC Docket No. 97-AFC-1

For Submittal to:

California Energy Commission
Energy Facilities Siting and Environmental Protection Division
1516 9th Street
Sacramento, California 95814-5512

August 12, 2008

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1.0 INTRODUCTION

High Desert Power Project, LLC ("HDPP") hereby requests California Energy Commission ("CEC") to remove the CEC prohibition on the use of reclaimed water at the HDPP facility located in the City of Victorville which is the subject of the CEC Certification number 97-AFC-1 (the "Facility"). The reclaimed water will allow HDPP to reduce the amount of State Water Project ("SWP") water used and consumed at the Facility, allowing other beneficial use of this valuable surface water source. Historically, the CEC staff has strongly recommended the use of reclaimed water at power plants when it is available, including use at the Facility (see Attachment A).

The CEC adopted a Water Policy in the 2003 Integrated Energy Policy Report that requires developers of new power plants to use alternative water supply sources and alternative technologies unless they prove to be environmentally undesirable or economically unsound.[1] HDPP's proposal to use reclaimed water at the Facility is in concert with this policy. The use of reclaimed water is in line with the goals and strategic objectives of the State of California.

The portion of reclaimed water used by the Facility will depend on the quantity and quality of reclaimed water available to the Facility and the capacity for its Zero Liquid Discharge ("ZLD") system to process reclaimed water. HDPP is seeking to obtain a supply of reclaimed water from the City of Victorville. In the future, reclaimed water could replace SWP water entirely for cooling and other industrial purposes. Every acre-foot of reclaimed water used would reduce the amount of SWP water required annually, potentially up to a 100% reduction.

This petition (this "Petition") requests amendments to two Conditions of Certification ("COC") as follows:

> **SOIL&WATER-1** (S&W-1) currently prohibits the use of reclaimed water at HDPP and requires modification to allow the use of reclaimed water.
>
> **SOIL&WATER-4d** (S&W-4d), revised by the CEC on July 19, 2006, specifies the amount of water to be injected into the aquifer banking system ("ABS"). The use of reclaimed water will reduce HDPP's need for SWP water allowing for proportionate reduction in the ABS banking requirement.

[1] Letter to Ramiro Garcia of Constellation Energy from Stephen Munro of CEC dated January 9, 2006. (see Attachment A)

If this Petition is approved, the Facility plans to use reclaimed water produced from local municipal and industrial sources treated to applicable CCR Title 22 standards. HDPP expects that the reclaimed water supply would be reliable and that any interruption would be infrequent and brief in duration, and would be backed up with SWP water (primary backup) and banked aquifer water (secondary backup) in the event of interruption.

HDPP plans to build facilities within the Facility fence line to receive and utilize reclaimed water. These facilities may initially be temporary facilities until HDPP has tested the capacity for its ZLD system to process reclaimed water. Permanent facilities within the Facility fenceline will be constructed based on the results of the evaluation. The facilities to be constructed that are described in this paragraph above are referred to herein as the "Water Facilities." Reclaimed water will be delivered to the Facility fence line via pipeline.

This Petition meets all the requirements for approval under applicable California regulations. 20 CCR § 1769(a)(1)(A-I). The Petition contains the requisite description of the water supply supplement and its historical context. The proposed modifications and the Water Facilities have been evaluated for compliance with all CEC COCs and applicable laws, ordinances, regulations and standards (LORS), and for potential impacts to the environment and the public. With the exception of S&W-1 and revised S&W-4(d), all COCs and applicable LORS would be met and, as the information submitted with this request indicates, there would be no significant impacts as a result of implementing the proposal.

2.0 DESCRIPTION OF PROPOSED RECLAIMED WATER SYSTEM

Delivery of Reclaimed Water and Use by HDPP

Currently, SWP water is the primary source of industrial water supply for HDPP. HDPP's annual usage was designed for up to 4,000 acre-feet/yr; however, actual historical use has been on the order of 3,000 acre-feet/yr based on dispatch. HDPP expects the dispatch of the Facility to increase with the growing demand for electricity in Southern California with a corresponding increase in water demand above 3,000 acre-feet/yr.

Initially, reclaimed water will be piped directly into the Facility's cooling tower and will be used for cooling purposes only. In the future, reclaimed water may be used for other industrial purposes besides cooling subject to the appropriate treatment standards in CCR Title 22.

The quantity of reclaimed water for initial usage in the cooling tower cannot be precisely determined at this time because it will be based on the specific conductivity (which is an indicator of Total Dissolved Solids) of the SWP water as well as the specific conductivity and silica content of the reclaimed water needed to achieve an acceptable blend. Without further treatment of the reclaimed water, HDPP anticipates that the specific conductivity of the reclaimed water will be approximately 25% to 40% higher than average SWP water; consequently, an increase in cooling tower blowdown will be required to meet the PM_{10} air emissions permit conditions. Cooling tower blowdown is ultimately limited by the capacity of the ZLD treatment system. Thus, the maximum amount of reclaimed water that may be used as make-up water to the cooling tower will initially be limited due to water chemistry limitations, but could reach 100% in the future if additional treatment of the reclaimed water is implemented prior to delivery to the Facility. Furthermore, reclaimed water could entirely replace SWP water for all other industrial uses in the future depending on other process water quality considerations.

HDPP will install an additional reclaimed water treatment system at the Facility to provide another barrier against any bacteria and viruses that may be present. A medium-pressure UV reactor will be installed in the piping. The system will consist of several UV light sources that travel across the cross section of the pipe with fully automatic operation. A quartz cleaning system will maintain the effectiveness of the light source. The treatment will kill microorganisms that are present in the water without producing harmful by-products.

3.0 POTENTIAL ENVIRONMENTAL IMPACTS

The Water Facilities have been evaluated for potential impacts to soil & water, biological resources, and air quality. Since Water Facilities would be located within the already-disturbed plant site footprint, no known cultural/paleontological resources would be affected. Similarly, the addition of the Water Facilities will not affect the other technical areas analyzed in the Commission Decision including air quality, hazardous materials handling, public health, noise, socioeconomics, land use, visual resources, and traffic and transportation.

3.1 SOIL & WATER

Use of reclaimed water at the Facility will not have a negative impact on soil or water. Agreements are in-place between the California Department of Fish and Game ("CDFG") and the local wastewater treatment plant regarding the amount of water that must be discharged into

the Mojave River. Only excess reclaimed water above this amount available within the Victorville community will be provided to the Facility.

Additionally, use of reclaimed water by the Facility would reduce the amount of SWP water consumed by the Facility and allows this water to be placed in service for other beneficial uses.

3.2 BIOLOGICAL RESOURCES

The Water Facilities would be located within the already-disturbed plant site footprint and therefore no sensitive species habitat would be affected.

In addition, construction of the Water Facilities would not impact any U.S. Fish and Wildlife Service, CDFG, or U.S. Army Corps of Engineers jurisdictional waters (e.g., desert washes). Therefore, implementation of the proposal would not cause any additional disturbance to biological resources. The HDPP Biological Resources Mitigation Implementation and Monitoring Plan ("BRMIMP") would be fully implemented, including the presence of monitors as appropriate, to ensure that any biological resources located on adjacent lands are protected and to prevent animals from entering construction areas.

3.3 AIR QUALITY

The Facility will continue to comply with the Mojave Desert Air Quality Management District ("MDAQMD") permit conditions for the cooling tower (MDAQMD Permit No. B005278). The permit limits the maximum hourly PM_{10} emission rate to 1.2 pounds per hour. The permit also requires the measurement of the blow-down water quality and a calculation of the resulting mass emission rate. The Facility will continue to comply with the existing permit conditions.

4.0 COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS AND STANDARDS ("LORS")

The Water Facilities would be constructed following appropriate design criteria. Implementation of the proposal would not trigger the applicability of any new LORS and would in no way impact HDPP's ability to comply with all applicable LORS listed in Appendix A of the Final Commission Decision.

Only reclaimed water that meets or exceeds the requirements for use of recycled water as set forth in CCR Title 22, Division 4, Chapter 3, Article 1, Section 60301.230, and CCR Title 22, Division 4, Chapter 3, Article 3, Sections 60306 and 60307 (pertaining to use for cooling water and other industrial purposes) will be delivered to and used at the Facility. The Facility will use

reclaimed water only for cooling water and other industrial purposes and the reclaimed water used will meet the specified treatment standards.

The implementation of this project requires changes to COC S&W-1. Specifically, the proposed changes are as follows, with new text shown underlined and deleted text shown as ~~strikethrough~~:

SOIL&WATER-1 The only water used for project operation (except for domestic purposes) shall be State Water Project (SWP) water obtained by the project owner consistent with the provisions of the Mojave Water Agency's (MWA) Ordinance 9 and/or reclaimed water.

a. Whenever SWP water is available to be purchased from MWA and/or reclaimed water is available, the project owner shall use direct delivery of such water for project operation.

c. If there is no water available to be purchased from the MWA or there is no reclaimed water available, and there is no banked water available to the project, as determined pursuant to SOIL&WATER-5, no groundwater shall be pumped, and the project shall not operate.

~~d. The project shall not use treated water from the Victor Valley Wastewater Authority.~~

In addition, this Petition requests a change to the revised COC S&W-4(d) which dictates the amount of water to be injected. The current ABS requirement was based on three years of SWP water usage at 4,000 acre-feet/yr plus 1,000 acre-feet. With the use of reclaimed water, the amount of SWP water that will be used by the Facility will be reduced. Therefore, HDPP requests the Commission to modify COC S&W-4(d) to reduce the amount of water required to be injected by the percentage of reclaimed water used at HDPP, up to a 100% reduction if reclaimed water completely replaces SWP water in the future.

Specifically, the proposed changes to revised S&W-4d are as follows, with the new text shown underlined and deleted text shown as ~~strikethrough~~:

SOIL&WATER-4 Injection Schedule:

d. The project shall install and implement a pre-injection reverse osmosis treatment system within one (1) year if any water banking milestone is not met as defined in the following table. If reclaimed water is used at the project, each Calculated Water Bank Reserve amount in the following table shall be reduced by a percentage, equal to the projected percentage of reclaimed water usage by the project to total water usage by the project, up to 100% reduction if 100% reclaimed water usage is projected to be used by the project; provided that such projected percentage will be determined by the Commission based upon

the availability and capability of the project to utilize reclaimed water as demonstrated by HDPP after HDPP has tested and evaluated the usage of reclaimed water at the project; and provided, further, no such reduction shall apply until such determination has been made.

The above conditions are also included by reference in the Incidental Take Permit issued CDFG. Therefore, as a parallel effort, HDPP is requesting a change to that permit to incorporate the use of reclaimed water.

5.0 LIST OF PROPERTY OWNERS

The Water Facilities would be constructed at the Facility site which is under the ownership of the United States Air Force, leased to Southern California Logistics Airport Authority and subleased to HDPP. Implementation of the proposal would have no other impacts to property owners, the public or other parties in the CEC application proceedings.

See Table 1 below for property owners that surround the Facility.

Table 1
List of Property Owners

NAME	ADDRESS	TYPE OF BUSINESS
A-1 Recycling	18675 Perimeter Road Victorville, CA 92394	Aircraft Deconstruction
Apple Aero	18308 Readiness Street Victorville, CA 92394	General Aviation Aircraft Repair
Dynadrill, Inc.	13050 Aerospace Drive Victorville, CA 92394	Drilling
Flannery Company	13123 Aerospace Drive Victorville, CA 92394	Book Distributor
G.B. & L.	13117 Aerospace Drive Victorville, CA 92394	Trucking
General Electric	18000 Phantom Victorville, CA 92394	Aircraft Repair
K & S Metal Products & Repair	13600 Phantom Street Victorville, CA 92394	FAA Certified Repair/ Manufacturing Station
KLM Industries	13063 Mustang Road Victorville, CA 92394	Trucking Company
Kleinfelder, Inc.	18374 Phantom Road Victorville, CA 92394	Environmental Engineers
May Manufacturing	13198 Mustang Street Victorville, CA 92394	Spa Manufacturer
Mercy Air Services	18500 Readiness Street Victorville, CA 92394	Emergency Helicopter Service

Table 1
List of Property Owners

NAME	ADDRESS	TYPE OF BUSINESS
Nestle Waters North American Inc.	13456 Fighting Falcon St. Victorville, CA 92394	Bottled Water Distributor
Pasha Group	13236 Mustang Victorville, CA 92394	Freight Forwarding
Southern California Aviation	18384 Readiness Street Victorville, CA 92394	Aircraft Maintenance, Storage & Sales
Stoody	18475 Finance Street Victorville, CA 92394	Welding Supply Wholesale House
Grumpy Golfer (Westwinds Golf Course)	18003 Westwinds Road Victorville, CA 92394	Restaurant
Victorville Aerospace, LLC	13010 Aerospace Drive Victorville, CA 92394	Aircraft Maintenance
West Coast Aerospace	13059 Aerospace Drive Victorville, CA 92394	Thread Roll Die, Thread Manufacturer
Westwinds Golf Course	18003 Westwinds Road Victorville, CA 92394	Recreation / Golf
World of Leisure	13504 Phantom Street Victorville, CA 92394	Luxury Pool Table Manufacturer
World Service West	18590 Readiness Street Victorville, CA 92394	FBO & Security Services
Federal Prison Employment Federal Bureau of Prisons	13289 Air Expressway Victorville, CA 92394	Prison

6.0 Potential Effects on Property Owners, Public and Parties in the Application Proceedings

Implementation of the proposal would have no other impacts to the property owners, the public or other parties in the CEC application proceedings.

7.0 Summary of Request

In summary, this Petition requests the approval of the proposed changes to COCs S&W-1 and revised S&W-4(d) to permit the Facility to use reclaimed water for cooling and other industrial purposes pursuant to the appropriate treatment standards in CCR Title 22. The approval of the use of reclaimed water at the Facility is consistent with the CEC staff recommended use of reclaimed water when it is available.

Attachment A

Reference Letter

STATE OF CALIFORNIA —THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

January 9, 2006

Mr. Ramiro Garcia, Environmental. Director - Western. Region
Constellation Energy
95 Enterprise, Suite 300
Aliso Viejo, CA 92656

Dear Mr. Garcia:

RESPONSE TO YOUR REQUEST FOR SUPPORT FOR USE OF RECLAIMED WATER - HIGH DESERT POWER PROJECT, SOILS & WATER-1 (97-AFC-2C)

This is in response to your letter of December 15, 2005, requesting support for a change to condition of certification S&W-1 to allow the use of reclaimed water for cooling at the High Desert Power Plant (HDPP).

Energy Commission staff strongly recommends the use of reclaimed water for power plant cooling when it is available and environmentally desirable. In the *2005 Environmental Performance Report Of California's Electrical Generation System*, Energy Commission staff reported that power plants developed since 1996 are using fresh water more efficiently due to increasing uses of recycled water for cooling, more efficient cooling technologies, and zero-liquid discharge systems. Between 1996 and 2004, 22 percent of the new electric capacity brought on-line used reclaimed water for cooling, while 52 percent of the electric capacity currently under construction, permitted, or in licensing review will use reclaimed water. Additionally, in response to concerns about the use of fresh water for power plant cooling, the Energy Commission adopted a Water Policy in the *2003 Integrated Energy Policy Report* that requires developers of new power plants to use alternative water supply sources and alternative cooling technologies unless they prove to be environmentally undesirable or economically unsound.

While it is not possible to anticipate the Energy Commission's decision on a future amendment petition with certainty, the record clearly demonstrates the Energy Commission's past support for the use of reclaimed water for power plant cooling purposes as an alternative to potable water and groundwater. In making a decision on any future request, the Commissioners would consider the use of reclaimed water at the HDPP facility, taking into account factors specific to HDPP and the locality. We note that there have been expressions of support from the City Manager of Victorville, a representative of the City of Barstow, the Director of the Mojave Water Agency, and a Victor Valley Waste Water Reclamation Authority representative. We are certain that the Commissioners will take their views into account, as well as the recommendation of the California Department of Fish and Game (CDFG), since the current prohibition against the use of reclaimed water in the HDPP Decision is primarily a result of CDFG's recommendation during the original proceedings.

We hope this information will be helpful to you and look forward to the receipt of your amendment petition requesting authorization to use reclaimed water. When you are ready to submit a petition, we will be happy to advise you of the information you will need to include. If you have any questions, please call me at 916-654-3936.

Sincerely,

STEPHEN D. MUNRO
Compliance Project Manager
Systems Assessment and
Facilities Siting Division

cc: Tom Bilhorn, CDFG
Becky Jones, CDFG