STATE OF CALIFORNIA

Energy Resources Conservation
and Development Commission

In the Matter of:	)	
	)	Docket No. 97-AFC-1C
Application for Certification for the High Desert Power Project	)	
	)	
	)	

HIGH DESERT POWER PROJECT COMMENTS
ON SEPTEMBER, 2009
REVISED STAFF ANALYSIS

October 20, 2009

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SECTION I
GENERAL COMMENTS

High Desert Power Project, LLC ("HDPP") submits these comments on the Revised Staff Analysis of Proposed Modifications to Remove the Prohibition of the Use of Recycled Water for Project Operations dated September 30, 2009 (the "Staff Analysis").

The High Desert power project (the "Facility") was originally certified by the Energy Commission in May 2000 to use State Water Project ("SWP") water as its sole source of industrial water supply. In fact, as originally certified, the HDPP was prohibited from using reclaimed water[1]. Since 2007, the availability of SWP water has become less reliable. Consequently, HDPP began the regulatory approval process to incorporate use of some quantity of reclaimed water into its cooling tower operations at the Facility.

In this Petition, HDPP is proposing modifications to several Conditions of Certification for the Facility in order to permit the use of reclaimed water by the Facility. Specifically, HDPP is requesting the following:

(1) Removal of the prohibition on using reclaimed water as set forth in Soil&Water-1.

(2) Authorization to interconnect to the City of Victorville's[2] existing reclaimed water system, via a new underground water pipeline approximately 1,700 feet long that will run along the perimeter of the Facility site.

(3) Modification of the aquifer banking requirements in Soil&Water-4 to reflect reclaimed water use.

Because of reclaimed water quality limitations, the Facility will likely need to blend this reclaimed water with its other SWP water supply. HDPP expects to be able to use up to 1,000 ac-ft/yr of reclaimed water, approximately one third of current water usage. This usage of reclaimed water, which HDPP is voluntarily undertaking, will have environmental benefits by reducing the demand for SWP water.

Additional usage of reclaimed water at the Facility beyond the 1,000 ac–ft/yr contemplated by this Petition would likely require the construction of substantial additional water treatment facilities. While HDPP is studying the feasibility of this

[1] The terms "reclaimed" and "recycled" are used interchangeably to maintain consistency with previously submitted documents and with reference to applicable state regulations.

[2] HDPP currently expects that the Victorville Water District ("VWD"), a county water district and subsidiary of the City of Victorville ("City"), will construct and own this pipeline and supply reclaimed water to the Facility rather than the City. The City and the VWD will determine whether the VWD or the City is the appropriate party.

increased use, such studies are not complete and HDPP has not proposed construction of such additional facilities in this Petition.

Nevertheless, HDPP's proposal to use up to 1,000 ac-ft/yr of reclaimed water is clearly in the public interest because it would allow HDPP to: (i) promptly increase the availability and reliability of the water supplies for the Facility, and (ii) reduce the Facility's consumption of SWP water. Also, HDPP's proposal to modify the aquifer banking requirements is appropriate because the banking milestones are unrealistic given reduced reliability of SWP water and are less important given the reclaimed water supplies proposed to be used by the Facility in this Petition.

Notwithstanding the clear environmental and reliability benefits of HDPP's proposal, the Staff Analysis proposes some additional, potentially onerous requirements on HDPP as conditions to implementing HDPP's proposal in this Petition.

First, it appears that the Staff Analysis seeks to give the Energy Commission the right to require HDPP to construct additional facilities necessary for the Facility to use 100% reclaimed water for cooling purposes (*see* Staff Analysis proposed SOIL&WATER-1(e) and (f) and Staff Analysis proposed Verification to SOIL&WATER-1). This recommendation should be rejected by the Energy Commission for three reasons.

(1) The Facility is currently certified to use SWP water and the license does not require (indeed, currently forbids) the use of reclaimed water. The Facility was constructed and is operated in accordance with and in reliance on that certificate (including tens of millions of dollars spent on facilities to process SWP water). The Energy Commission simply does not have the authority to unilaterally amend the terms of the Facility certificate without the project owner's consent.

(2) Even assuming that the Energy Commission had the authority to require an existing facility licensed to use SWP water to convert to 100% use of reclaimed water, it may not be feasible to do so in this case. HDPP is studying the feasibility of using up to 100% reclaimed water by adding additional treatment facilities, but such studies are not complete. While HDPP may well propose to construct such facilities after completion of this analysis, this decision cannot be made quickly or lightly. Such a conversion will involve substantial additional capital costs; may increase operating costs; may degrade Facility performance (output and heat rate); will likely require additional outages to implement the conversion; and has the risk of creating new operating problems. HDPP will also consider the effectiveness of the initial phase of reclaimed water usage proposed in the current Petition in increasing water supply reliability at the Facility and will need to assess whether it has the funds or access to financing markets to make such a substantial new investment. While HDPP will need to seek Energy Commission approval if it proposes these new facilities, HDPP should not be required to propose or build facilities it determines are not feasible because HDPP

is in the best position to make these feasibility determinations and will bear the direct consequences of them.

(3) It should be noted that when representatives of HDPP met with Energy Commission Staff in Sacramento in January 2009 to discuss the Petition, Staff requested that HDPP specifically limit the Petition to the proposal described herein and not to include and to keep separate a possible second phase involving additional treatment facilities for potential conversion to up to 100% reclaimed water.

While the Energy Commission may have the authority to undertake a rulemaking to consider conversion of all licensed facilities in California to recycled water, it is particularly inappropriate to impose these conditions unilaterally upon HDPP in the context of this Petition where HDPP has proposed on its own initiative to use as much reclaimed water as it can feasibly utilize, a proposal widely acknowledged by the Staff at the January 2009 meeting as "win-win" for everyone involved. HDPP's specific comments to the proposed condition are set forth in Section II below in the comments to S&W-1.[3]

Second, the Staff Analysis proposes to add a new condition to require HDPP to bank all available SWP water in excess of Facility needs to replace the current banking milestones. HDPP is agreeable to such a new condition but it must be written to comport with Facility equipment capabilities and water injection permit requirements. HDPP's specific comments to the proposed condition are set forth in Section II below in the comments to S&W-4.

Third, the Staff Analysis proposes to add some new information requirements. HDPP is generally agreeable to these new conditions but proposes some minor changes to make them factually accurate and to avoid undue delays in implementation of the commencement of use of reclaimed water. HDPP's specific comments to the proposed conditions are set forth in Section II below in the comments to S&W-20 and S&W-21.

Finally, in Section III below, HDPP makes some comments, corrections and clarifications on other portions of the Staff Analysis.

[3] HDPP understands that the Staff Analysis references to conversion to 100% reclaimed water use are not intended to require the Facility to give up its access to SWP water or its banked water supplies. However, the language of the Staff Analysis is not clear in this regard. An absolute requirement that the Facility use 100% reclaimed water and to give up its other water sources could substantially impair the reliability of the Facility. Every water supply, including reclaimed water, is subject to periodic interruptions, both scheduled and unscheduled so that backup supply is needed for routine maintenance or emergencies. Thus, in any event, Staff Analysis recommendations regarding conversion to 100% reclaimed water should not be interpreted to require HDPP to give up its other water supply sources.

SECTION II
COMMENTS TO MODIFICATIONS TO CONDITIONS OF CERTIFICATION

HDPP's proposed additions to the modifications to the Conditions of Certification presented in the Staff Analysis are shown below in **bold double underline** and proposed deletions are shown in ~~double 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 appropriately treated recycled waste water.

a. Whenever SWP water is available to be purchased from ~~MWA~~ the city of Victorville, or recycled waste water is available, the project owner shall use direct delivery of such water for project operation.

b. Whenever water is not available to be purchased from the ~~MWA~~ city of Victorville the project owner may use SWP water banked in the ~~seven~~ four HDPP wells ~~identified in Figure Number 1 of the Addendum Number 1 to the "Evaluation of Alternative Water Supplies for the High Desert Power Project: (Bookman-Edmonston 1998)~~ as long as the amount of water used does not exceed the amount of water determined to be available to the project pursuant to SOIL&WATER-5.

c. If there is no SWP water available to be purchased from the ~~MWA~~ city of Victorville, and 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. At the project owner's discretion, dry cooling may be used instead, if an amendment to the Commission's decision allowing dry cooling is approved.

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

e. The project's water supply facilities shall be appropriately sized ~~and utilized~~ to meet project needs. **The project shall** ~~and to~~ make maximum use of recycled waste water for power plant cooling needs given current equipment capabilities **and permit conditions.** ~~Prior to use of recycled waste water the project owner will provide the CPM with details of the recycled water pipeline and connections, a copy of an agreement with VVWRA or other suppliers that will deliver recycled waste water, and any other information necessary to amend the project for the proposed recycled waste water use.~~

f. The project owner shall continue with the feasibility study **evaluating the use of 100 percent recycled water** ~~and developing the design for eventual conversion to 100 percent recycled water use~~ for evaporative cooling purposes, ~~by the 4th quarter of 2012. The intent of this conversion is to eliminate fresh water use for power plant cooling consistent with Energy Commission water policy and California Water Code, section 13550. The project owner shall submit a petition to amend the project because of the changes that would be needed to convert to 100 percent recycled water.~~ The feasibility study shall be completed by the project owner and submitted to the CPM no later than December 31, 2011.

Verification: The project owner shall provide final design drawings of the project's water supply facilities to the CPM, for review and approval, thirty (30) days before commencing project construction.

The project owner shall provide a biannual report on the progress being made on the **feasibility study** ~~project design~~ for use of 100 percent recycled water for power plant cooling. The report shall include information related to ~~design and specifications for~~ project modifications **that may be needed** ~~and any adjustments or changes in the schedule~~ for ~~converting~~ **using up** to 100 percent recycled water, ~~use.~~ The first report shall be due six months after adoption of this condition of certification. ~~If the schedule for implementation of 100 percent recycled water use goes beyond the 2nd quarter of 2013, the CPM may require the owner to provide an analysis demonstrating why the necessary plant modifications can or cannot be made in a more timely manner. This analysis may be brought to the Energy Commission for consideration and further determination of what action the owner should take to make the facility modifications to 100 percent recycled water use.~~

Verifying compliance with other elements of Condition SOIL&WATER-1 shall be accomplished in accordance with the provisions of the Verifications for Conditions 2, 3, ~~and~~ 6, 20, and 21 as appropriate.

Reasons for HDPP proposed changes to SOIL&WATER-1:

- HDPP added reference in SOIL&WATER-1(e) to reflect the fact that the Facility will begin use of recycled water by blending with its other supplies and can only do so in volumes and at rates compatible with equipment capabilities and permit conditions. Equipment capabilities include the effect of recycled water usage on the long term operations, maintenance, and reliability of the Facility, in accordance with good operating practices.

- HDPP deleted the language pertaining to eventual conversion to 100% recycled water in SOIL&WATER-1(f) and in the Verification for the reasons set forth in Section I General Comments.

- HDPP deleted the language in SOIL&WATER-1(f) because Energy Commission water policy and California Water Code section 13550 do not appear to be relevant LORS (laws, ordinances, regulations, and standards) that pertain to the Facility. Specifically, a requirement to eliminate fresh water for power plant cooling at an existing Facility that has been licensed for this use is not required by Energy Commission water policy. The State Water Resources Control Board and the Energy Commission have no regulations or policy mandates requiring a licensed power plant to convert to 100% reclaimed water for cooling purposes simply because it is available.[4] Furthermore, California Water Code section 13550 promotes the use of recycled water in lieu of potable water for industrial purposes where certain conditions are met. Section 13550 does not apply to the Facility because the Facility does not use potable water for industrial purposes. SWP water is not potable water. Simply put, potable water is water that is free of pathogens and impurities and is safe to drink. SWP water is not suitable for consumption without extensive treatment. Consequently, this provision of the California Water Code is not a LORS that is applicable to the Facility.

- HDPP deleted references in the Condition and the Verification to design and specifications because these are items typically prepared after a feasibility study when a determination has been made to proceed with a project.

- HDPP modified references to conversion to 100% reclaimed water to clarify that use of reclaimed water is not intended to have the Facility give up access to its other water supplies for backup or blending as applicable.

SOIL&WATER-4 Injection Schedule:

a. The project owner shall inject one thousand (1000) acre-feet of SWP water within twelve (12) months of the commencement of the project's commercial operation.

b. By the end of four years and two months from the start of commercial operation, the project owner shall install and begin operation of a pre-injection ultraviolet (UV) disinfection system.

c. By the end of the fifth year of commercial operation, the project shall submit a report to the CPM demonstrating that HDPP has maintained an average THM concentration level consistent with the WDR permit requirements.

[4] *see* The Integrated Energy Policy Report. California Energy Commission, Dec 2003.

d. After the end of the fifth year of commercial operation, the project owner shall~~: (i)~~ inject SWP water when it is available in excess of volumes needed to operate the project **up to a cumulative quantity of 13,000 acre feet, subject to equipment capabilities and permit requirements**. The amount of water available to HDPP for extraction is equal to Injection minus Extraction minus Dissipation minus 1000 acre-feet, as defined in SOIL&WATER-6.

~~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.~~

~~Table of Milestones for Calculated Water Bank Reserve (1)~~

~~Water Banking Year~~	~~Anniversary Date (2)~~	~~End of Year Milestones (3)~~	~~Contingency Plan: Criteria for Installation of Reverse Osmosis~~
~~8~~	~~April 21, 2011~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve < 2,500 ac-ft~~
~~9~~	~~April 21, 2012~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve < 5,400 ac-ft~~
~~10~~	~~April 21, 2013~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve < 8,300 ac-ft~~
~~11~~	~~April 21, 2014~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve < 9,200 ac-ft~~
~~12~~	~~April 21, 2015~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve < 10,100 ac-ft~~
~~13~~	~~April 21, 2016~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve < 11,000 ac-ft~~
~~14~~	~~April 21, 2017~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve < 12,000 ac-ft~~
~~15~~	~~April 21, 2018~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve < 13,500 ac-ft~~

~~(1) Calculated Water Bank Reserve = Injection minus Extraction minus Dissipation. (Amount of water available to HDPP is equal to Injection minus Extraction minus Dissipation minus 1000 acre-feet, as defined in SOIL&WATER-6.)~~

~~(2) Start of Commercial Operation: April 22, 2003.~~

~~(3) Milestones are designed to determine if injection falls significantly behind schedule.~~

~~e. No later than the end of the fifteenth (15) year of commercial operation, the amount of water injected minus the amount of banked groundwater used for project operation, minus the~~

~~amount of dissipated groundwater shall meet or exceed thirteen thousand (13,000) acre-feet.~~

~~f. After the requirement of section e has been satisfied and until three (3) years prior to project closure, the project owner shall replace banked groundwater used for project operation as soon as SWP water is available for sale by MWA. The project owner may choose to delay replacement of a limited quantity of banked groundwater used for project operations during aqueduct outages until the cumulative amount of groundwater withdrawn from the bank reaches one thousand (1,000) acre-feet.~~

~~Once the limit of one thousand (1,000) acre feet has been reached, the project owner shall replace banked groundwater used for project operation during aqueduct outages as soon as SWP water is available for sale by MWA.~~

Verification: The project owner shall submit an installation and operation report describing the pre-injection ultraviolet disinfection (UV) by the end of the fourth year of commercial operation. The project owner shall submit a UV performance report by the fifth year of commercial operation. Forecasted estimates of SWP water to be injected shall be included in the quarterly Aquifer Storage and Recovery Well Report. For other related items, see the verification to Condition 5. See also the verification to Condition 12.

Reasons for HDPP proposed changes to SOIL&WATER-4:

- HDPP is agreeable to the new condition proposed by the Staff Analysis as SOIL&WATER-4(d). HDPP has modified this condition slightly because the ability of the Facility to inject SWP water is affected by equipment capabilities and permit requirements, as described in more detail on pp. 11-12 below.

SOIL&WATER-20 The project owner shall provide the CPM two copies of the executed Recycled Water Purchase Agreement (agreement) with the ~~City of Victorville (City)~~ **Victorville Water District (VWD) and/or City of Victorville (City)** for the long-term supply (20 – 25 years) and delivery of tertiary treated recycled water to the HDPP. The HDPP shall not connect to the City's recycled water pipeline without the final agreement in place. The project owner shall comply with the requirements of Title 22 and Title 17 of the California Code of Regulations and section 13523 of the California Water Code.

Verification: ~~No later than 60~~ **At least 30** days prior to the connection to the **City** ~~the connection to the VVWRA recycled water pipeline,~~ recycled water pipeline, the project owner shall submit two copies of the executed agreement for the long-term supply and delivery of tertiary treated recycled water to the HDPP.

The agreement shall specify a maximum delivery rate of 4000 gpm and shall specify all terms and costs for the delivery ~~and use~~ of recycled water ~~by~~ **to** the HDPP.

~~No later than 60~~ **At least 30** days prior to connection to the City's recycled water pipeline~~, connection to the City's recycled water pipeline,~~ the project owner shall submit to the CPM a copy of the Engineering Report and Cross Connection inspection and approval report from the California Department of Public Health and all water reuse requirements issued by the ~~Los Angeles~~ **Lahontan** Regional Water Quality Control Board.

Reasons for HDPP proposed changes to SOIL&WATER-20:

- HDPP believes that 60 days is too long to wait to begin using reclaimed water given the nature of complying with each requirement by simply submitting the appropriate documents to the CPM as presented in the Condition and in the Verification. Consequently, HDPP proposes to reduce this delay to a more reasonable time period of 30 days.

- Other proposed changes to SOIL&WATER-20 are designed to correct or clarify the meaning of the item.

SOIL&WATER-21 Prior to use of recycled water during operation of the HDPP, the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record in gallons per day the volume of recycled water used by the HDPP. The metering devices shall be operational for the life of the project, and an annual summary of daily water use shall be submitted to the CPM in the annual compliance report.

Verification: At least ~~30~~ **10** days prior to use of recycled water for HDPP operation, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the recycled water line serving the project. The project owner shall provide a report on the servicing, testing, and calibration of the metering devices in the annual compliance report.

Reasons for HDPP proposed changes to SOIL&WATER-21:

- HDPP believes that 30 days is too long to wait to begin using reclaimed water given the nature of the Verification requirement by simply submitting the appropriate evidence to the CPM. Consequently, HDPP proposes to reduce this delay to a more reasonable time period of 10 days.

SECTION III
COMMENTS TO OTHER PORTIONS OF STAFF ANALYSIS

HDPP'S proposed additions to the Staff's comments are shown in **bold single underline** and proposed deletions are shown in ~~single strikethrough~~.

COVER MEMO, page 1.

The Facility does not use potable water for industrial purposes and the SWP water delivered to the Facility is not potable. Consequently, the two references on page 1 to "potable" should be deleted.

As discussed in Section I General Comments, HDPP is proposing to continue assessing the feasibility of using reclaimed water as its primary supply through an initial period of testing and evaluation. Consequently, the following change should be made to the language on page 1 to clarify this point:

- Eliminate water banking milestones because of infeasibility of achieving the milestones **while continuing to allow use of** ~~and the goal of converting project cooling to 100 percent recycled water, with potable~~ State Water Project water and banked groundwater as backup.

STAFF ANALYSIS

Project Description and Background, pages 2 and 3.

The Staff Analysis incorrectly refers to the date of the Petition as "August 4, 2008." The correct date is August 12, 2008.

Analysis, page 3.

The Staff Analysis incorrectly refers to the location of the 1700-foot pipeline as being within the HDPP property. The proposed pipeline will be located on land owned by the U.S. Air Force and leased to the Southern California Logistics Airport Authority (i.e., the City of Victorville) along the perimeter but outside of the HDPP site. The pipeline will enter the HDPP site at the west property boundary for a short traverse to the cooling tower basin. Consequently, the following change on p. 3 should be made to correct the record:

2. The use of tertiary treated recycled water for cooling purposes and its potential to adversely affect soil and water resources from its production, delivery (via a proposed new 1700-foot pipeline ~~within~~ **along the perimeter of** the HDPP property), use, and discharge.

Recycled Water Analysis, page 5.

The Staff Analysis states that the maximum rate of recycled water use at HDPP will be 6,000 gallons per minute, which is incorrect. The correct maximum rate of use is expected to be 4,000 gallons per minute.

Recycled Water Use Laws, page 6.

The Staff Analysis incorrectly refers to the engineering report (i.e., the Title 22 Engineering Report) as 'draft'. The Title 22 Engineering report, referenced as "HDPP 2009d" in the Staff Analysis, is not a draft report; it is a final report.

Recycled Wastewater, page 6.

The Staff Analysis incorrectly refers to the engineering report (i.e., the Title 22 Engineering Report) as 'draft'. The Title 22 Engineering report, referenced as "HDPP 2009d" in the Staff Analysis, is not a draft report; it is a final report.

Modification to Aquifer Banking Requirements, page 7.

HDPP agrees with the Staff Analysis that it is unrealistic to hold HDPP to the annual banking milestone schedule as detailed in Soil&Water-4. However, HDPP believes that it is also unrealistic for the Staff to advocate HDPP's use of the full 8,000 ac-ft allotment of SWP water in any year for operational and banking purposes to reach the cumulative volume (13,000 ac-ft) because the amount of SWP water available for banking by the Facility is affected by several factors:

(1) The allocation of SWP water delivered to the Mojave Water Agency ("MWA") in any year determines the amount of SWP water that may in turn be delivered to the Facility in that year. In any year when MWA receives less water than its aggregate contractual obligations to its customers, the Facility can expect to have less than 8,000 ac-ft/yr available for its use, as has recently been the case. For example, HDPP's allotment from the MWA was 3,200 ac-ft in 2008, and will be 2,706 ac-ft in 2009.

(2) At full operating capacity, the maximum throughput of the injection well system is limited to about 2,500 ac-ft/yr.

(3) Heat is required to treat SWP water to permitted levels for injection. When the Facility is not generating electricity, it does not generate heat and consequently cannot treat and inject SWP water.

(4) The total dissolved solids ("TDS") concentration of SWP water must meet permitted limits in order to be injected. The TDS concentration in SWP water varies throughout the year.

Consequently, even if the Facility were to operate at full capacity using 4,000 ac-ft of water in a year, it is not possible to bank another 4,000 ac-ft of water in that year to consume the full 8,000 ac-ft allocation. However, as noted above, HDPP is agreeable to a proposed condition requiring aquifer banking of available SWP water in excess of operational demand for aquifer banking to meet the cumulative volume of 13,000 ac-ft, subject to equipment capabilities and permit requirements.