

# *La Paloma Generating Plant*

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March 22, 2007

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La Paloma Generating Project (Docket No. 98-AFC-2C)  
California Energy Commission  
Energy Facility Siting Division  
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**Subject: Petition for Amendment – Condition of Certification S&W-4  
Class I Nonhazardous Waste UIC Wells**

Mr. Meyer,

La Paloma Generating Company, LLC, herewith submits the attached Petition for Amendment to Condition of Certification Soil & Water-4. The purpose of the amendment is to insert language into Soil & Water-4 to allow for Class I nonhazardous wastewater UIC wells and/or a zero discharge wastewater treatment system at the La Paloma Generating Plant. Accompanying this petition is supporting information and details necessary for the CEC staff analysis.

The guidance provided by the CEC staff on this matter is appreciated. Our project goal and commitment is for CEC approval of the amendment and USEPA issuance of a UIC well permit by October 2007. By this correspondence, we request that this matter be placed on the agenda to be heard at the Commission Business Meeting scheduled for May 23, 2007.

Please do not hesitate to call Mr. Zenis Walley at 661.762.6003 or me at 661.762.6047 if there are any questions, need for clarification, or request for additional support data.

Sincerely,

Nick Park  
Plant Manager  
La Paloma Generating Plant

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File 705.02.05/705.2.19

**LA PALOMA GENERATING PLANT  
LA PALOMA GENERATING COMPANY, LLC**

**PETITION FOR AMENDMENT TO  
CALIFORNIA ENERGY COMMISSION  
DECISION – DOCKET NO. 98-AFC-2  
CONDITION OF CERTIFICATION:  
SOIL&WATER-4**

*Prepared for submittal to*  
California Energy Commission  
Sacramento, California

**March 22, 2007**

<b>Section</b>	<b>Page</b>
<b>INTRODUCTION</b>	1
Description of Existing Wastewater Disposal System	1
Zero Discharge System	1
Injection Facilities and UIC Well Permit Status	2
New UIC Well Permit Schedule	2
<b>A DESCRIPTION OF PROPOSED MODIFICATION</b>	3
a. Description of Modification	3
b. New Language	3
<b>B NECESSITY OF MODIFCATION</b>	4
<b>C INFORMATION KNOW AT TIME OF CERTIFICATION PROCESS</b>	4
<b>D NEW INFORMATION</b>	4
<b>E IMPACT ANALYSIS OF MODIFICATION</b>	4
a. Applicable Conditions of Certification	4
b. Impact Analysis	5
1. Air Quality	5
2. Biological Resources	5
3. Cultural Resources and Paleontological Resources	5
4. Noise	6
5. Public Health and Worker Safety	6
6. Traffic and Transportation	7
7. Visual Resources	7

<b>Section</b>	<b>Page</b>
8. Soil and Water Resources	7
9. Other Resources	8
<b>F COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)</b>	8
<b>G AFFECTS ON THE PUBLIC</b>	8
<b>H LIST OF PROPERTY OWNERS</b>	8
<b>I EFFECTS ON NEARBY PROPERTY OWNERS, THE PUBLIC, AND PARTIES TO THE APPLICATION</b>	9
<b>ATTACHMENTS</b>	
<b>1 AREA MAP</b>	10
<b>2 PRELIMINARY BIOLOGICAL SURVEY: RESULTS REPORT</b>	11

## INTRODUCTION

La Paloma Generating Company, LLC (LPGC) is filing this petition for an amendment to the Commission Decision on the La Paloma Generating Project as part of Docket 98-AFC-2. As is inherent to Zero Discharge (ZD) system technology, the La Paloma Generating Plant (LPGP) is experiencing difficulties in adequately processing the volume of wastewater generated by the plant and has experienced mechanical and corrosion-related material failures in the system resulting in a high level of ongoing maintenance. This has caused unplanned outages for the ZD system and offsite disposal of large volumes of brine at landfills. Operation of the ZD system also results in the loss of electrical generation to the California ISO and the electrical grid due to the large parasitic electrical load required for operating the system's evaporators. Combined with high maintenance costs these factors negatively impact the economic viability of the LPGP. This amendment is necessary to 1) provide wastewater disposal options and redundancy, 2) improve economic viability by reducing maintenance costs and parasitic load, and 3) enhance the plant availability and reliability of energy supply to the California ISO and the electrical grid system. The Commission Decision allows for the use of either underground injection or the ZD system for wastewater disposal. The LPGC is proposing to utilize underground injection as the primary method of wastewater disposal and use of the ZD system as a backup disposal option.

This petition to amend the Commission Decision, Docket No. 98-AFC-2, is submitted pursuant to Section 1769 of Title 20 of the California Code of Regulations.

### **Description of Existing Wastewater Disposal System**

#### **Zero Discharge System**

The ZD system at the LPGP treats facility wastewater (primarily cooling tower blowdown) through a filtration and evaporation system. The ZD system consists of a reverse osmosis (RO) system, various chemical treatment, evaporators, a crystallizer, and a filter press. The ZD system removes dissolved and suspended solids from the wastewater, which produces purified process water for reuse and a non-hazardous filter cake requiring off-site disposal.

The ZD system frequently has been unable to handle the volume of wastewater generated by the facility, and has experienced significant ongoing mechanical and material failures. Frequent upset conditions in the ZD system have resulted from plugging and fouling of the RO system, evaporators, and crystallizer. Corrosion and erosion of piping, pumps, and evaporator ducting has also occurred due to the highly corrosive and abrasive environment of the ZD system. Excessive water content in the filter cake waste stream has required offsite disposal of large volumes of brine (approximately 285,000 gallons in 2006). Additionally, the power to operate the ZD system results in about a two megawatt parasitic load on the power plant that could otherwise be supplied to the electrical grid.

### **Injection Facilities and UIC Well Permit Status**

Under the provisions of the Commission Decision and the Class I nonhazardous Underground Injection Control (UIC) permit from the USEPA, LPGC constructed an injection well in 2000 as a disposal option for wastewater. Equipment was also installed to support injection, including pumps at the water treatment facility and an eight-inch HDP water supply pipeline to deliver wastewater to the well. The well was drilled to approximately 1,000 feet into the Upper Tulare Formation. Because of unexpected water quality conditions in the injection zone and the lack of an identifiable confining zone above the injection zone, USEPA would not allow injection until these issues could be resolved.

LPGC has subsequently identified a deeper injection zone in the Olig Formation at a depth of over 4,000 feet. The geology and water quality characteristics of this formation and the presence of a substantial confining zone (over 2,000 feet thick) above the Olig provide an injection zone that should easily address USEPA concerns with the original injection zone. LPGC has met with the USEPA and the California Division of Oil, Gas, and Geothermal Resources, and both agencies responded favorably to the proposed injection program.

LPGC expects that one to two wells will be sufficient to accept the volume of wastewater generated by the LPGP, with a third well to be used as a backup during well cleanouts and workovers. LPGC will be requesting approval of up to five wells to allow for well failures or other problems. The wells will be drilled in the same area as originally anticipated in the AFC and the Commission Decision (LPGC property immediately adjacent and to the south of the power plant – see Attachment 1). The filtration portion (multi-media filters and RO system) of the ZD system will continue to be used to pre-treat the wastewater prior to injection. This pretreatment of the wastewater along with the pretreatment of raw water will effectively remove solids that could plug the injection formation.

In addition to the existing injection equipment, new facilities will include the wells, wellpads, access roads, and injection pipelines. Depending on the injection pressure at the wellheads, one or more high pressure pumps and surge tanks may be necessary at or near the wellheads to overcome formation pressures. The size and design of this equipment will be determined once the first well is drilled and tested.

### **New UIC Well Permit Schedule**

A Class I nonhazardous UIC well permit application will be submitted to the USEPA Region 9 by the end of March 2007, and LPGC expects to receive a UIC well permit by the fourth quarter of 2007.

## A DESCRIPTION OF PROPOSED MODIFICATION

### a. Description of Modification

The requested amendment would change the language of Condition of Certification SOIL&WATER-4 of the Commission Decision to allow the use of both injection wells and the ZD system. No changes to any other conditions are required, and activities under the amendment would be conducted in compliance with the Commission Decision.

Development of the injection facilities would be consistent with the activities contemplated in the AFC and the Commission Decision, and are therefore adequately mitigated through compliance with the conditions of the Commission Decision.

### b. New Language

The following is the only proposed change to the Conditions of Certification:

**SOIL&WATER-4:** ~~Prior to completion of rough grading, t~~The project owner shall notify the Energy Commission Compliance Project Manager (CPM) which of the wastewater disposal methodologies, either injection wells and/or a zero liquid wastewater discharge system, will be used by the facility. If injection wells are the selected wastewater disposal option, the project owner shall provide a copy of the approved final Underground Injection Control Permit from the EPA for the proposed injection wells to Staff and notify the Energy Commission CPM of any changes to the permit. If the zero liquid wastewater discharge system is the selected methodology, the project owner shall submit to the CPM a description and schematic of the system. Within sixty (60) days (or within a timeframe approved by the CPM) of beginning operation of the project, the project owner shall submit to the CPM the results of Waste Extraction Test of the residual cake solid waste from the zero discharge system.

**Verification:** ~~Within sixty (60) days of certification,~~The project owner shall submit in writing a description of the selected wastewater disposal methodology to the Energy Commission CPM. If injection wells are selected, this notification shall include a copy of the approved final Underground Injection Control Permit from the EPA. The project owner shall notify the Energy Commission CPM in writing of any proposed changes to this permit, either initiated by the project owner or by the EPA. The project owner shall provide a status report on injection well construction and operation to the Energy Commission CPM in the annual compliance report. If a zero liquid discharge system is ~~the selected disposal methodology,~~ then within sixty (60) days of beginning operation of the project, or within a timeframe approved by the CPM, the project owner shall submit to the CPM the results of the Waste Extraction Test of the residual cake solid waste from the zero liquid wastewater system. A status report on construction and operation of the system, including the volume of residual cake solids generated and the landfills used for disposal, shall also be included in the annual compliance report submitted to the CPM.

## **B NECESSITY OF MODIFICATION**

The modification will allow for operational flexibility with respect to wastewater disposal by providing redundant disposal options. The Commission Decision allows for the use of either of two wastewater disposal methodologies: (1) underground injection or (2) ZD system. Initially, LPGC selected the ZD system as the disposal option at the time of project construction due to difficulties with the injection well. The flexibility to use either disposal option will greatly reduce the potential for facility curtailment due to outages of either the injection wells or the ZD system. This amendment is necessary to 1) provide wastewater disposal options and redundancy, 2) improve economic viability by reducing maintenance costs and parasitic load, and 3) enhance the plant availability and reliability of energy supply to the California ISO and the electrical grid system.

## **C INFORMATION KNOWN AT TIME OF CERTIFICATION PROCESS**

Information that forms the basis for this amendment was not known at the time of the original certification process.

## **D NEW INFORMATION**

New information, since initiation of commercial operation in 2003, based on actual operating experience has revealed that the ZD system is problematic. Sole dependence on this system, as currently required the Conditions of Certification, jeopardizes plant reliability and availability to the California ISO and electrical system. Based on this new information, the Commission Decision should be amended.

## **E IMPACT ANALYSIS OF MODIFICATION**

### **a. Applicable Conditions of Certification**

The following Conditions of Certification are applicable to the activities under the new UIC program:

AQ-C2

BIO-2, BIO-3, BIO-4, BIO-5, BIO-9, BIO-10

CUL-1, CUL-2, CUL-5, CUL-6, CUL-7, CUL-8, CUL-9, CUL-12, CUL-13, CUL-14, CUL-15

HAZ-1

PAL-1, PAL-4, PAL-5, PAL-6, PAL-7

NOISE-1, NOISE-2, NOISE-3, NOISE-8

SOIL&WATER-2, SOIL&WATER-4

VIS-3

WASTE-3, WASTE-5

TRANS-1, TRANS-2, TRANS-3



**b. Impact Analysis**

**1. Air Quality**

Air quality impacts will be limited to minor drilling equipment, vehicle, and fugitive dust emissions during drilling operations. Activities under the amendment will be conducted in compliance with the Fugitive Dust Mitigation Plan (AQ-C1).

No modifications to the Air Quality conditions in the Commission Decision will be required.

**2. Biological Resources**

The area of the proposed injection facilities (i.e. wellpads, tanks, pipelines, access roads) will be surveyed for sensitive plants and wildlife, including Spring and Summer surveys for the blunt nosed leopard lizard, in accordance with USFWS and CDFG survey protocol. The Designated Biologist and Alternate Designated Biologist conducted a reconnaissance level survey of the injection area in March 2007 (see Attachment 2). Appropriate mitigation will be implemented for the protection of sensitive species, and additional acreage will be transferred to the Center for Natural Lands Management as mitigation for permanent disturbance of sensitive species habitat as deemed necessary.

All activities will be conducted in compliance with the Biological Resources Mitigation Implementation and Monitoring Plan, as revised in May 2005. Construction activities and mitigation will be conducted with oversight by the Designated Biologist (Condition BIO-2). The Designated Biologist will prepare monthly Compliance Reports for submittal to the CEC Project Compliance Manager (CPM)(Condition BIO-3).

In addition, Worker Environmental Awareness Training (WEAT) will be required of all personnel working at the project site (Condition BIO-5). This will include LPGC employees, contractors, and subcontractors.

No modifications to the Biological Resources conditions in the Commission Decision will be required.

**3. Cultural Resources and Paleontological Resources**

The area of the proposed injection facilities will be surveyed prior to construction to identify the need to avoid or mitigate impacts to cultural and paleontological resources. All activities will be conducted in compliance with the Cultural Resources Monitoring and Mitigation Plan (CRMMP) and the Paleontological Resources Monitoring and Mitigation Plan (PRMMP). The plans may be modified as necessary based on the results of the cultural and paleontological resource surveys.

A Designated Cultural Resource Specialist and a Designated Paleontological Resource Specialist will be identified, subject to approval by the CPM (Conditions CUL-1 and

PAL-1). These individuals or their designees will be present to monitor ground disturbing activities that could impact cultural or paleontological resources. Construction activities shall be conducted in compliance with the Commission Decision, and the CRMMP and the PRMMP. The WEAT, described above, will include cultural and paleontological resources training (Conditions CUL-5 and PAL-3).

Preliminary and final Cultural Resources and Paleontological Resources reports will be prepared and submitted to the CPM for approval following completion of project construction (Conditions CUL-13, CUL-14, and PAL-7). Any cultural or paleontological resource materials encountered will be properly prepared and delivered to an appropriate repository for curatorship (Conditions CUL-12, CUL-16, and PAL-6).

No modifications to the Cultural Resources or Paleontological Resources conditions in the Commission Decision will be required.

#### **4. Noise**

Noise generated from the UIC program will primarily be associated with drilling activities. Because of the nature of drilling operations these activities are conducted on a 24-hour basis. The nearest residences are located in McKittrick, approximately 1.5 miles west of the project area. The LPGP is located in the oil production area of Kern County, and construction of the injection wells will be consistent with drilling activities that local residents are familiar with.

Noise will also be generated during road and drill pad grading, pipeline and surface equipment installation, and from project traffic. Expected noise levels during construction and operation are no different than the noise levels contemplated in the AFC and Commission Decision for the original injection program. UIC activities will be compliant with applicable Commission Decision noise conditions.

No modifications to the Noise conditions in the Commission Decision will be required.

#### **5. Public Health and Worker Safety**

The proposed amendment does not present any potential impacts related to public health or worker safety that were not contemplated by the AFC or the Commission Decision. LPGC has prepared and implemented the worker-safety related plans and procedures (Condition SAFETY-2), as well as the hazardous materials management plan (Condition HAZ-5). Activities under the amendment will be conducted in compliance with these plans and procedures, and pursuant to applicable well drilling industry standards.

No modifications to the Public Health or Worker Safety conditions in the Commission Decision will be required.

## **6. Traffic and Transportation**

No traffic or transportation related impacts will occur as a result of the amendment that were not contemplated in the AFC or the Commission Decision. Minor automobile and truck traffic will be associated with well drilling activities. Approximately 10 to 12 truck loads of drilling equipment will be required for drilling rig move-in and move-out, and automobile traffic for two shifts of four person drill crews each will occur over a two to four 4 week drilling period. Traffic during operations will be very minor, associated with occasional well testing and cleanouts.

No modifications to the Traffic and Transportation conditions in the Commission Decision will be required.

## **7. Visual Resources**

Visual impacts will primarily be those associated with drilling. The most visible feature will be the drilling rig mast that will be approximately 130 feet high. At night, the mast will be illuminated with overhead lighting to allow for safe drilling operations. The nearest visual receptors are in the town of McKittrick, 1.5 miles west of the project area, and from local traffic on Reserve and Skyline roads. Local traffic is primarily oilfield workers. The visual impacts will be similar to those associated with other drilling activities in the surrounding oil field. Once the wells are drilled, above ground facilities will be limited to wellheads, piping, and access roads. Water storage/surge tanks may be installed if deemed necessary. To mitigate their visual impact they will be painted similar to the color of the power plant. Visual impacts will be no different than those contemplated in the AFC and Commission Decision.

No modifications to Visual Resources conditions in the Commission Decision will be required.

## **8. Soil and Water Resources**

Water quality and wastewater disposal are addressed in the Soil and Water Resources section of the Commission Decision. The Commission Decision contemplates the use of either injection wells or the ZD system for disposal of wastewater, and it considered the impacts of both methods of disposal. Condition SOIL&WATER-4 required LPGC to notify the CPM of the wastewater disposal method that would be utilized for the project. At the time of construction, LPGP selected the ZD system for disposal. The proposed amendment to the Commission Decision will require modification of SOIL&WATER-4 to allow for both injection and the ZD system for disposal of wastewater.

Injection activities will be conducted in compliance with a new UIC permit issued by the USEPA and in compliance with the Commission Decision, as amended.

**9. Other Resource Areas**

Finally, other resource areas, including hazardous material management, waste management, land use, and socioeconomics, will similarly not be significantly impacted by the amendment, and therefore, no modification to the Commission Decision will be required.

**F COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)**

The proposed modifications to Condition SOIL&WATER-4 do not represent any changes to design elements or present any new environmental impacts. In addition, the new UIC program does not present any environmental impacts not already contemplated in the AFC or the Commission Decision. Therefore, the requested amendment will not affect the ability of LPGC to comply with all applicable LORS.

Depending on the size and location of the surface disturbance associated with the injection facilities, a Streambed Alteration Agreement with the CDFG and/or coverage under the General Storm Water Permit for Construction Activities may be required. These approvals will be obtained by LPGC, as necessary.

**G AFFECTS ON THE PUBLIC**

The amendment will not present any additional impacts that would have an adverse affect on the public. Adding redundancy to the wastewater disposal system enhances reliability of electric power to the grid system, thereby, resulting in a positive affect on the public.

**H LIST OF PROPERTY OWNERS**

The following is a list of property owners adjacent to the project area:

<u>APN</u>	<u>Owner</u>	<u>Address</u>
157-110-05	USA	Unknown
157-110-20	Berry Petroleum Company	5201 Truxtun Avenue, #300 Bakersfield, CA 93309-6409
157-210-05	Crimson Resource Management Corporation	410 17 <sup>th</sup> Street, #1010 Denver, CO 80202
157-220-02	Chevron USA, Inc.	P.O. Box 1392 Bakersfield, CA 93302-1392
157-220-03	Pagels Family Survivor Trust A	2031 New Brunswick Drive San Mateo, CA 94402

<u>APN</u>	<u>Owner</u>	<u>Address</u>
157-220-05	USA	Unknown
157-230-03	Chevron USA, Inc.	P.O. Box 1392 Bakersfield, CA 93302-1392
157-230-15	Chevron USA, Inc.	P.O. Box 1392 Bakersfield, CA 93302-1392
157-260-03	Chevron USA, Inc.	P.O. Box 1392 Bakersfield, CA 93302-1392
157-260-04	Zollars Family Trust	3024 Lewis Street Placerville, CA 95667-5601
157-270-01	Occidental of Elk Hills, Inc.	P.O. Box 27570 Houston, TX 77277-7570

**I EFFECTS ON NEARBY PROPERTY OWNERS, THE PUBLIC, AND PARTIES TO THE APPLICATION**

The amendment will not result in any additional impacts. As discussed, the nearest residences are 1.5 miles west of the LPGP. Therefore, there will be no adverse impacts on nearby property owners, the public, or parties in the application proceedings.

**ATTACHMENT 1**

**AREA MAP**

**ATTACHMENT 2**

**PRELIMINARY BIOLOGICAL SURVEY: RESULTS REPORT**