FACT SHEET

U.S. Environmental Protection Agency, Region 9 Draft Class I Underground Injection Control Permit # CA10710001
To La Paloma Generating Company, LLC

Location:
La Paloma Generating Company, LLC
1760 W. Skyline Road, P.O. Box 175
McKittrick, CA 93251

Permittee Contact:
Mr. Nick Park, Plant Manager
La Paloma Generating Company, LLC
1760 W. Skyline Road, P.O. Box 175
McKittrick, CA 93251
Plant phone: (661) 762-6000

Regulatory Contact:
Adam Freedman, Environmental Scientist
U.S. Environmental Protection Agency, Region 9
Ground Water Office, Mail Code WTR-9
75 Hawthorne Street
San Francisco, CA 94105-3901
Telephone: (415) 972-3845
Fax: (415) 972-3545 (include name and mail code from above)
Email: freedman.adam@epa.gov

I. Purpose of the Fact Sheet

Pursuant to the Underground Injection Control (UIC) regulations in Title 40 of the Code of Federal Regulations (CFR), §124.8, the purpose of this fact sheet is to briefly describe the principal facts and the considerations that went into preparing the draft permit. To meet these objectives, this fact sheet contains background information on the permit process, a description of the facility, a brief discussion of the permit conditions, and the reasons for these permit conditions.

II. Permit Process

Application and Review Period

The U.S. Environmental Protection Agency, Region 9 (EPA) Director has authority to issue permits for underground injection activities under 40 CFR §144.31. La Paloma Generating Company, LLC (LPGC) is applying for a UIC permit renewal (of permit #CA199000001) to operate a Class I injection well facility to dispose of non-hazardous wastewater from the La Paloma Generating Plant. EPA received an individual permit application dated March 28, 2007, for between three (3) and five (5) Class I

nonhazardous UIC wells from LPGC. In a letter to LPGC dated April 30, 2007, EPA confirmed that the application was administratively complete. Following this, EPA began the technical review. Following a thorough technical review, EPA determined that the information provided was sufficient to complete a draft UIC permit. EPA has now completed a draft Class I nonhazardous UIC permit that would authorize the construction of up to five (5) injection wells in total. The draft permit contains numerous construction, operation, maintenance, monitoring, reporting, and abandonment requirements.

Based on our review of the proposed well construction, operation standards, monitoring requirements, and the existing geologic setting, EPA believes the activities allowed under the proposed draft permit are protective of Underground Sources of Drinking Water as required under the Safe Drinking Water Act.

Public Participation

The public has thirty (30) days to review and comment on the Class I UIC draft permit (40 CFR §124.10). The draft permit and this fact sheet are available at the following locations:

Kern County Library
701 Truxtun Avenue
Bakersfield, CA 93301

U.S. Environmental Protection Agency, Region 9
Ground Water Office
Attn: Adam Freedman, Mail Code WTR-9
75 Hawthorne Street
San Francisco, CA 94105

The draft permit and fact sheet are also available at the EPA Region 9 web page:
http://www.epa.gov/region09/water/groundwater/uic-permits.html

The public comment period begins on February 3, 2008 and ends on March 4, 2008. During this period, all written comments on the draft permit can be sent, faxed, or e-mailed to Adam Freedman using the contact information listed on the first page of this fact sheet. Adam Freedman is also available by phone for any questions regarding the draft permit.

All persons, including the applicant, who object to any condition of the draft permit or EPA's decision to prepare a draft permit must raise all reasonably ascertainable issues and submit all reasonable arguments supporting their position by the close of the comment period (40 CFR §124.13). The public comment period may be reopened if this could expedite decision making (40 CFR §124.13). If requested, a public hearing may be held (40 CFR §§124.11 and 124.12).

Final Decision Making Process

After the close of the public comment period, EPA will review and consider all comments relevant to the UIC permit and application. A response to comments will be sent to the applicant and each person who has submitted written comments or requested notice of the final permit decision and posted on the EPA website. The response to comments will contain: a response to all significant comments on the draft permit; EPA's final decision; any permit conditions that are changed and the reasons for the changes; and procedures for appealing the decision. The final decision shall be to either issue or deny the permit. The final decision shall become effective no sooner than thirty (30) days after the service of the notice of decision. Within thirty (30) days after the final permit decision has been issued, any person who filed comments on the draft permit, participated in any Public Hearing on this matter, or takes issue with any changes in the draft permit, may petition the Environmental Appeals Board to review any condition of the permit decision. Commenters are referred to 40 CFR §124.19 for procedural requirements of the appeal process. If no comments request a change in the draft permit, the permit shall become effective immediately upon issuance (40 CFR §124.15).

III. Description of the Facility

The La Paloma Generating Plant (LPGP) began commercial operation in March 2003. The facility consists of a 1,022 MW combined cycle, natural gas-fired electrical power plant. The combined cycle power block consists of four combustion turbine generators, and four heat recovery steam generators. The facility area is approximately 400 acres.

LPGP currently utilizes a zero liquid discharge (ZD) system to treat and dispose of wastewater. The construction of the ZD system followed EPA's denial of authorization for LPGC to inject into the previously proposed injection zone, which EPA determined to be an underground source of drinking water (USDW). LPGP has experienced difficulties processing the large volume of wastewater generated by the facility and has experienced ongoing mechanical and corrosion-related material failures in the ZD system resulting in a high level of maintenance. These challenges have caused unplanned outages of electrical generation and prompted significant brine disposal practices at landfills.

Wastewater from the LPGP consists primarily of cooling tower blowdown from the power plant cooling process with lesser volumes of boiler and evaporative cooler blowdown, wash water, filter backwash, equipment drains, and stormwater from equipment containment areas at the generating plant. According to LPGC's proposed design, before final discharge to the UIC disposal well, wastewater will continue to pass through the filtration portion (multi-media filters and reverse osmosis system) of the ZD wastewater treatment system. The filtrate will then be pumped into the UIC disposal well. Pretreatment of both wastewater and raw water will effectively remove solids that could otherwise plug the injection zone.

LPGC has applied for a permit to allow well construction and operation at an injection rate of 2,126 barrels per day (bbl/day) in each of 5 wells or 3,543 bbl/day in each of 3

wells, resulting in an anticipated average injection rate of 10,600 barrels of wastewater per day, or 0.45 million gallons per day (mgd). The maximum anticipated injection rate is 19,400 bbl/day, or 0.81 mgd, which is estimated to occur no more than 14 days per operating year. All potential injection wells will be located on property near LPGC's facility on W. Skyline Road in McKittrick, California.

IV. Brief Summary of Specific Permit Conditions

In order to protect public health and the environment, the following conditions for injection well construction, corrective action, operation, monitoring and reporting, plugging and abandonment, and financial responsibility have been included in the La Paloma Generating Company, LLC Draft Class I UIC Permit:

Well Construction (Part II, Section A of the Draft Permit)

No injection well drilling, testing, construction, or operation may commence without prior written approval from EPA. Well design specifications include a Conductor casing (14-16 inch diameter) to approximately 40 feet below ground surface, Surface casing (9-5/8 inch diameter) from ground surface to approximately 500 ft bgs, Long String casing (7 inch diameter) from ground surface to approximately 4,400 feet below ground surface to the top of the target Miocene Olig sand injection zone of the Reef Ridge Formation, and tubing (5-inch diameter) from the surface to approximately 4,228 ft bgs. The conductor pipe, surface casing, and long string casing are all designed to be cemented to the surface. The injection apparatus additionally includes the installation of a 5.0 inch liner. Complete well schematics are included in Appendix B of the draft permit.

EPA will require logs and other tests to be conducted during drilling and construction that shall include, at a minimum, deviation checks, casing logs, and injection formation tests. Before surface, intermediate, and long string casings are set, a dual induction/spontaneous potential/gamma ray log will be run over the course of the entire open hole sequence after the well is drilled to each respective terminal depth. After each casing is set and cementing complete, a spherically focused cement bond evaluation log will be run over the course of the entire cased hole sequence. EPA will require mechanical integrity testing after completion and regularly while operating, to ensure that injection fluid is properly contained.

EPA will require injection formation information to be determined through well logs and tests and shall include a characterization of porosity, permeability, static formation pressure, and effective thickness of the injection zone. A fall-off pressure test (FOT) will be conducted six months after the start of injection and annually thereafter to determine and monitor formation characteristics. A step-rate test (SRT) will be conducted on at least one representative well before injection is authorized, to establish maximum injection pressure.

Groundwater testing at well sites will be required during construction of the wells and shall include well logs and Total Dissolved Solids (TDS) analysis of target formation

water to demonstrate either the presence and characteristics of, or the lack of, any Underground Sources of Drinking Water (USDWs). Formation water samples from the injection zone will be collected for subsequent analyses from the first injection well upon its completion to confirm that representative Olig formation water is being collected.

Corrective Action (Part II, Section B of the Draft Permit)

The applicant completed preliminary calculations of the Zone of Endangering Influence (ZEI), based on reasonable assumptions and EPA has confirmed that these appear to be within the half-mile Area of Review (AOR). After assumptions are confirmed or replaced by field test data obtained through hydrogeologic testing required under the proposed permit, the ZEI will be recalculated annually, and if the recalculated ZEI extends beyond the AOR, corrective action may be required. Corrective action may include, but is not limited to reentering, plugging, and abandoning any production or exploratory wells which penetrate the injection zone and are located within the permit's AOR.

Well Operation (Part II, Section C of the Draft Permit)

Prior to receiving authorization to inject, LPGC will conduct mechanical integrity (MI) testing, step-rate testing, injection zone parameter testing, a hazardous waste determination of the injectate, and ground water sampling. No hazardous waste may be injected into any of the proposed injection wells. Maximum allowable injectate volume and pressure limitations are subject to results of testing required under the permit. The permit requires annual mechanical integrity and pressure transient testing to ensure protection of underground sources of drinking water. Mechanical integrity must be demonstrated by means of an annular pressure test in the tubing/casing annulus, an evaluation of cement integrity in the casing/borehole annulus and sufficient results from temperature logs and radioactive tracer testing. Formation pressure data will be measured and monitored annually to ensure that pressure buildup is limited to the AOR.

The injection well will be operated so as to not initiate or propagate fractures in the injection formation. A maximum surface injection pressure (pumping pressure) will be calculated based on formation test data.

Monitoring, Record Keeping, and Reporting (Part II, Section D of the Draft Permit)

LPGC is required to continuously monitor injection rate, total injection volume, injection pressure, annular pressure, and injection fluid temperature. LPGC is required to sample the injectate on a quarterly basis to determine the following: Inorganics (Major Anions and Cations); Solids (Total Dissolved Solids and for Total Suspended Solids); General and Physical Parameters (Turbidity, pH, Conductivity, Hardness, Specific Gravity, Alkalinity, Biological Oxygen Demand (BOD), Density and Viscosity); Trace Metals; Volatile Organic Compounds (VOCs); and Semi-VOCs.

All sampling analyses must be performed at a laboratory approved by EPA. LPGC is required to maintain all operational and monitoring records, and to submit quarterly summary reports to EPA.

Well Plugging and Abandonment (Part II, Section E of the Draft Permit)

Upon determination that any injection well regulated by this permit is to be permanently abandoned, LPGC would be required to abandon the injection well according to the Plugging and Abandonment Plans in Appendix E of the draft permit. EPA reserves the right to change the manner in which a well will be plugged if the well is modified during its permitted life or if the well is not consistent with EPA requirements for construction or mechanical integrity.

Financial Responsibility (Part II, Section F of the Draft Permit

Authority to drill and construct any well will not be granted until financial resources sufficient to properly close, plug, and abandon the well amounting to $127,000 per well are posted and approved by EPA. Failure to submit the required financial demonstration could result in the termination of the permit.

Duration of Permit (Part II, Section G of the Draft Permit)

The permit and the authorization to inject would be issued for a period of up to ten (10) years unless terminated under the conditions set forth in Part III, Section B.1 of the draft permit.