FACT SHEET

U.S. Environmental Protection Agency, Region 9

Draft Class I Underground Injection Control Permit # CA10600001

To Panoche Energy Center, Company LLC

Location:

Panoche Energy Center, LLC
43883 W. Panoche Road
Firebaugh, CA 93622

Permittee Contact: Gary Chandler, President; Panoche Energy Center, LLC; 2542 Singletree Lane; South Jordan, Utah 84095

Regulatory Contact:
George Robin, Engineer
U.S. Environmental Protection Agency Region 9; Ground Water Office, Mail Code WTR-9; 75 Hawthorne Street San Francisco, CA 94105-3901; Telephone: (415) 972-3532; Fax: (415) 947-3545 (include name and mail code from above); Email: robin.george@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. Panoche Energy Center, LLC (Panoche) is applying for a UIC permit # **CA10600001** to operate a Class I injection well facility to dispose of non-hazardous wastewater from the Panoche Generating Plant. EPA received an individual permit application dated September 14, 2006, for up to six (6) Class I Nonhazardous UIC wells from Panoche. In a letter to Panoche dated October 20, 2006, 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 six (6) 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:

California Division of Oil, Gas, and Geothermal Resources
District 5 Office
466 N. Fifth Street
Coalinga, CA 93210-1793

Fresno County Public Library
2420 Mariposa Street
Fresno, California 93721

Fresno County Branch Libraries:

1315 O Street
Firebaugh, CA 93622

15081 West Kearney Plaza
Kerman, CA 93630

1246 Belmont Avenue
Mendota, CA 93640

8781 Main Street
San Joaquin, CA 93660

5831 S. Juanche
Tranquillity, CA 93668

U.S. Environmental Protection Agency
Region 9 Library
75 Hawthorne Street
San Francisco, CA 94105

The Draft Permit and Fact Sheet are also available online at:
http://www.epa.gov/region09/water/groundwater/uic-permits.html

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

The public comment period begins on March 16, 2008 and ends on April 15, 2008. During this period, all written comments on the draft permit can be sent, faxed, or e-mailed to George Robin using the contact information listed on the first page of this fact sheet. George Robin is also available by phone for any questions regarding the draft permit.

A request for a public hearing may be made during the 30-day comment period. It should be in writing and should state the nature of the issues proposed to be raised at the hearing. A public hearing will be held only if significant interest is shown (40 CFR §§124.11 and 124.12).

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 shall automatically be extended to the close of any public hearing on this permit, and may also be reopened if such reopening could expedite decision making (40 CFR §§124.12 and 124.14).

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

Panoche plans to construct a 400 megawatt simple-cycle power plant in an unincorporated area of western Fresno County. The facility site will be located on a 12.8 acre site within a 128 acre parcel. The site is approximately 12 miles southwest of the city of Mendota, 16 miles south-southwest of the city of Firebaugh and approximately 2 miles east of Interstate 5, adjacent to the existing Pacific Gas & Electric's Panoche Substation.

Panoche proposes to dispose of the cooling water and other wastewaters associated with plant operations by installing up to six (6) deep injection wells at the facility. The wastewater to be injected is limited to cooling tower blowdown, reverse osmosis (RO) system rejects, evaporative cooler blowdown, combustion turbine generator (CTG) intercooler condensation and water effluent from the oil-water separator derived solely from this Panoche Energy power plant. If approved, injection will be authorized into one of two zones depending on the water quality encountered within the zones during drilling. Under Plan A, the injection zone will be the Eocene to upper Cretaceous age Domengine, Laguna Seca, and Moreno Formations below the Kreyenhagen Shale Formation (the confining zone). Under Plan B, the injection zone will be the Upper Cretaceous age D1 and D2 sand members of the Panoche Formation below the Marca and Tierra Loma Shale members of the Moreno Formation (the confining zone). Injection will be for the purpose of disposal of the previously described industrial nonhazardous wastewater fluids produced solely from this Panoche Energy power plant facility in Fresno County.

The maximum injection rate produced by the plant and distributed to the number of wells drilled and constructed by Panoche is expected to be approximately 18,214 barrels or 0.765 million gallons per day. The average rate produced by the plant is expected to be 13,500 barrels or 0.567 million gallons per day. The maximum authorized surface injection pressure will be determined by conducting a Step Rate Test to determine eighty (80) per cent of the geologic formation's fracture pressure as measured from coordinating bottom hole pressure recorders with surface pressure recorders.

The depths of the wells will be determined by the water quality encountered within the zones after drilling to a total depth of 5,600 ft. (Plan A) or to 7,900 ft. (Plan B).

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 Panoche Energy Center Company, LLC Draft Class I Nonhazardous UIC Permit No. CA10600001:

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

Drilling, work-over, and plugging procedures must comply with the California Division of Oil, Gas, and Geothermal Resource's ("CDOGGR") "Onshore Well Regulations" of

the California Code of Regulations, found in Title 14, Natural Resources, Division 2, Department of Conservation, Chapter 4, Article 3, Section 1722-1723**.**

No injection well drilling, testing, construction, or operation may commence without prior written approval from EPA. Well design specifications include a Conductor casing (16 in ABA cemented to surface) to approximately 80 feet below ground surface (bgs), Surface casing (10-3/4 in, 40.5 lb, J-55, STC) from ground surface to approximately 1,600 ft bgs cemented to surface, Long String casing (7-5/8 in, 26.4 lb, K-55, LTC) from ground surface to approximately 4,800 ft (Plan A) or 7,200 ft (Plan B for deeper injection intervals) cemented to surface, Slotted Liner (5 in, 15 lb, K-55, LTC) 5,600 ft (Plan A) or 7,900 ft (Plan B) cemented to surface, and tubing (5 in, 15 lb, K-55, LTC) Tie-back String at 4,750 ft at Top of Slotted Liner (Plan A) or at 7,150 ft at Top of Slotted Liner (Plan B). 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 and long string casings are set, a dual induction/spontaneous potential/gamma ray/caliper 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 tool which enables the evaluation of the bond between cement and casing as well as of the bond between cement and formation 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 transient test (FOT) shall be run in the representative well determined by EPA after a radial flow regime has been established, typically 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 injection zone formation water to demonstrate either the presence and characteristics of, or the lack of, any Underground Sources of Drinking Water (USDWs).

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

Panoche 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). No corrective action plan is currently required, since no known wells located within the AOR penetrate the proposed zones of injection. 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, Panoche will conduct mechanical integrity testing (MIT), SRT, 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 MIT and FOT to ensure protection of USDWs. 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)

Panoche is required to continuously monitor injection rate, total cumulative injection volume, injection pressure, annular pressure, and injection fluid temperature. Panoche 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. Panoche 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, Panoche would be required to abandon the injection well according to the Plugging and Abandonment Plans in Appendix F 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 $169,500 per each 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.