

ORIGINAL

Decision No. 91856 JUN 3 1985

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application
of PACIFIC LIGHTING SERVICE
COMPANY, SOUTHERN CALIFORNIA GAS
COMPANY, and PACIFIC GAS AND
ELECTRIC COMPANY for a Certificate
under Section 1001 of the Public
Utilities Code, that the Public
Convenience and Necessity Require
the Acquisition and Operation of an
Underground Storage Reservoir and
the Construction, Operation and
Maintenance of Wells, Compressor
and Dehydration Plants, and Related
Facilities for Underground Storage
of Natural Gas in the Ten Section
Field, Kern County, and the Approval
of a Transportation and Exchange
Agreement.

Application No. 58905
(Accepted September 6, 1979)

Malcolm H. Furbush, Robert Ohlbach, Daniel
Gibson, and Joseph S. Englert, Jr.,
Attorneys at Law, for Pacific Gas and
Electric Company; Leslie Lobaugh and
Robert Keeler, Attorneys at Law, for
Pacific Lighting Service Company and
Southern California Gas Company; and
Dan Najjar, Attorney at Law, for Southern
California Gas Company; applicants.

Larry R. Cope, H. Robert Barnes, Charles
Kocher, and John R. Bury, Attorneys at Law,
for Southern California Edison Company;
Barton M. Mverson, Attorney at Law, for
San Diego Gas & Electric Company; and
Henry F. Lippitt, 2nd, Attorney at Law, for
California Gas Producers Association;
interested parties.

Richard D. Rosenberg, Attorney at Law, and
Bill Y. Lee, for the Commission staff.

O P I N I O N

By this application Pacific Lighting Service Company (PLS), Southern California Gas Company (SoCal), and Pacific Gas and Electric Company (PG&E), public utility corporations, seek a certificate pursuant to Section 1001 of the Public Utilities Code declaring that the present and future public convenience and necessity require and will require the acquisition and operation of an underground natural gas storage reservoir and the construction, operation, and maintenance of wells, gathering pipeline, compressor plant, gas treatment and dehydration plant, and related facilities for the storage of natural gas in the Ten Section Field (Field) in Kern County. Further, applicants seek approval of a Gas Transportation and Exchange Agreement dated May 23, 1979.

Hearing

After notice and publication, five days of public hearing were held before Administrative Law Judge J. J. Doran in Los Angeles on March 11, 12, April 1, 2, and in Bakersfield on March 18, 1980. The matter was submitted on April 2, 1980. Our staff filed the Final Environmental Impact Report (EIR) on May 19, 1980. Such Final EIR is part of the record in this proceeding.

Applicants presented seven witnesses to support their application. Seven public witnesses appeared supporting the application. The Commission staff presented three witnesses who were supportive of the project and who evaluated the environmental impact of the project.

Project Uses

In this proceeding, applicants testified that they propose to convert a nearly depleted oil field to a gas storage field. The existing oil field is located 12 miles southwest of Bakersfield in Kern County, California.

Further, PG&E and PLS have installed a 34-inch pipeline approximately 8.8 miles long to connect PLS's and PG&E's existing pipeline systems in order to enhance intertie facilities.^{1/} This pipeline, which bisects the Field, will also be utilized to transport gas between the transmission pipeline networks of PG&E and SoCal and the storage field.

Applicants propose to install gas turbine compressor equipment and to recover waste heat for the cogeneration of electricity. Further, they propose cogeneration with gas turbines to improve the energy efficiency of the project and achieve greater reduction in NOX emissions. This proposal will reduce NOX emissions from the compressors to well below existing standards. Furthermore, the addition of the cogeneration equipment will increase the thermal efficiency of the proposed equipment by approximately 50 percent. Under current analysis, the projected additional average costs over the life of the project for the electric cogeneration will be recovered through the projected revenues from the sale of the electricity. The cogeneration aspects of the project are expected to be cost effective and are consistent with our policy on cogeneration.

It is estimated that the proposed 7 megawatts of cogeneration will produce 25.7 million kilowatt-hours (kWh) annually at an estimated average cost of 5.7 cents per kWh. The cost is based on the additional facilities and fuel needed to add cogeneration to the project. Applicants propose selling the electricity to PG&E at a price to be negotiated in order to recover the generation costs. Further, applicants estimate that approximately 5.6 million barrels of oil can be produced during the

^{1/} Authorized by Decision No. 89177 dated July 31, 1979.

life of the project. The revenues from the sale of this oil production will be credited to the Gas Cost Adjustment Clause balancing accounts of the utilities.

Field Storage Uses

Applicants testified that the main purpose for the Field is to increase extreme peak-hour and extreme peak-day supply deliverability to their systems. Added benefits of the Field include upgrading the level of service to Priority (P) 3 and P4 customers, assisting to mitigate the potential adverse impacts to customers that could result in the event of interruption of supply and reinforcing the present storage cycle volume capability necessary to meet seasonal demands. The staff testified that the increased storage capacity would provide the possibility of acquiring and maintaining additional short-term increments of gas supply which, in the absence of such additional storage capacity, could otherwise be lost to California. This objective is consistent with Commission policy to acquire the maximum quantities of reasonably priced natural gas available to California in order to avoid an increased dependence on imported oil and, if possible, reduce such existing dependence to the lowest level.

The joint development of the Field will make peaking and seasonal storage available at minimum cost to PLS, SoCal, and PG&E. Because the extreme peak-day requirements of the distribution utilities have historically not coincided, the single field will permit a better coverage of peaking requirements for the systems at a reduced capital investment.

Gas Supplies

SoCal has been experiencing a decline in the gas supply available from its traditional sources. Therefore, less primary supply is available to meet extreme peak-hour and extreme peak-day requirements.

PG&E is also encountering current limitations on its sources of gas supply. PG&E has not had curtailment of its Canadian gas; however, its supplier's export licenses are scheduled to begin to expire commencing in 1985.

Gas supplies are generally received by SoCal and PG&E on a nearly uniform basis year-round; however, there are substantial seasonal variations in usage. High priority users have a relatively high demand during the winter period. This type of change in demand is most satisfactorily met by underground storage.

Requirements

SoCal and PG&E gas distribution systems have been designed to provide uninterrupted service to highest priority customers. To maintain this capability, the PG&E and SoCal systems must be able to meet extreme peak-hour and extreme peak-day load requirements of each system's highest priority customers. The withdrawal of natural gas stored in underground reservoirs is an accepted means to meet extreme peak-load requirements. The evidence shows that PLS and SoCal presently own and operate six reservoirs having an extreme peak-hour daily rate deliverability of 4,400 MMcf. This deliverability, plus line pack and primary supply, will be insufficient to meet SoCal's future extreme peak-hour daily rate requirements.

The evidence also shows that PG&E owns and operates underground storage facilities with peak deliverability of 1,280 MMcf per day. PG&E also has a contractual arrangement to store gas in a producer-owned oil field which provides a withdrawal rate of 150 MMcfd. A third PG&E gas storage facility will (upon completion in 1980) have a deliverability of 230 MMcfd. Conventional gas supply and underground storage withdrawal will be insufficient to meet PG&E's abnormal peak-day demand by the 1985-86 winter season.

Additional deliverability from storage is necessary to satisfy future extreme peak-hour and peak-day requirements of applicants' highest priority customers. The project can provide increased deliverability for protection of P1 and P2A customers on an extreme peak-day, including continuing growth of high priority customer demand.

Field Facilities

The proposed Field project involves using most of the 160 existing wells on the site and some new wells may have to be drilled. During Stage I, 96 existing wells are proposed to be converted for storage use. An additional 11 wells are proposed to be used for observation. During Stage II, 26 additional wells may be converted for storage use.

About April 1981, 4,000 horsepower of leased compression equipment will be installed to inject gas into a limited number of wells through temporary piping. These facilities will be removed after permanent compressors and field piping become available. In Stage I, 6,000 horsepower of permanent compression equipment, field piping, gas dehydration equipment, and oil production equipment will be installed and completed by April 1982. In Stage II, an additional 14,000 horsepower of compression equipment and additional field piping and gas dehydration equipment will be installed and completed in 1984.

During the injection phase of the project, natural gas will be injected through existing wells into Zones I and II of the Field. Applicants' evidence shows that up to 81 Bcf of cushion and working gas can be injected for storage if the pressure in Zone I is raised to the original bottom hole discovery pressure of 3,525 psia. It is estimated that Zone II will ultimately provide an additional 16 Bcf of storage. The total storage capacity,

cushion and working volumes, is estimated to be 97 Bcf, and the working volume is 50 Bcf.

The estimated cost of the project in 1984 (based upon 1979 dollars) is \$195.5 million consisting of \$34.1 million acquisition costs, \$56.1 million cushion gas, and \$105.3 million other construction costs. The estimated expense of operation will be \$5.7 million in 1985. Oil revenues in 1985 are estimated to be \$47 million and will be reflected in the Gas Cost Adjustment Clause balancing account.

PG&E and PLS propose to finance conventionally the storage facilities as additions to their present gas transmission systems with general corporation funds. Temporary financing for PLS's obligations in this project will be obtained from its parent company, Pacific Lighting Corporation. The estimated total annual cost of the project, as measured by the above expenses, and the fixed charges to service the underground storage field capital less the oil revenues divided by the ultimate statewide sales in the neighborhood of 1.5 Bcf sales at the time of project completion are reasonable.

Project Agreements

Testimony was presented showing that PLS and PG&E each propose to purchase an undivided one-half interest in the Field and to hold their interest as tenants in common. PLS and PG&E each propose to commence their individual usage of the project in a time frame different from that of the other to suit their individual system operations and needs. The Field will be developed in two separate stages, and PLS and PG&E request authorization for both stages. Stage I will entail all work necessary to expand the storage facility to operate for the primary use of PLS and its customer, SoCal. Stage II will entail all work necessary to allow the storage facility to operate for the common use of PLS and PG&E.

Agreements have been made between PLS, Shell Oil Company (Shell), and Tenneco West, Inc. (Tenneco) providing for the acquisition of the right to use the Field land surface and the purchase of certain storage zones, hydrocarbons in place, wells, and certain other facilities now installed at the Field. The Field has been producing oil and gas since 1936. Because of declining pressure the Field is now virtually unproductive.

The storage field and related facilities will be operated by SoCal for PLS and PG&E pursuant to the Operating Agreement between PLS, PG&E, and SoCal. The PG&E, PLS, and SoCal Gas Transportation and Exchange Agreement will allow PLS and SoCal gas to be transported to and from the Field by the existing PLS and SoCal gas transmission systems and by utilizing capacity available in PG&E's existing pipeline. PG&E has agreed to utilize its existing mainline 300 gas transmission system on a best-efforts basis to transport and exchange PLS and SoCal gas.

Stage I of the project is estimated to be completed in April 1982 and is expected to provide additional extreme peak-hour deliverability by the winter of 1982-83 in the amount of 500 MMcfd. After the winter of 1983-84 and upon completion of Stage II in 1984, this amount of deliverability will be increased to 1,000 MMcfd. The compressor plant will be capable of cycling 50 Bcf of working gas per year.

The project will consist of wells, compressor plant, treatment and dehydration plant, field piping, and other related facilities.

Staff Testimony

The staff recommends the certification of the Field facilities as recommended by applicants. The staff concludes that there is a need for additional load equating capacity on both the

PG&E and SoCal systems and that the proposed Field is ideally situated to provide such capacity.

Although the staff's position as to the exact timing of SoCal's need for the Field for extreme peak-hour and extreme peak-day protection differs from SoCal's, there is no disagreement between applicants and the staff or any party concerning the timing of the need for the project in light of the multitude of purposes this project can serve. The staff has specifically recommended that the project be approved in the manner, design, time frame, and schedule requested by applicants.

Environment

A comprehensive record on environmental matters was developed in this proceeding through issuance by the staff of a Draft EIR, consultation with public agencies, and public hearings, all of which are elements in the EIR process which culminated in the issuance of the Final EIR.

The staff conducted an independent review of the environmental impact of the proposed project which is represented by the Final EIR. We have carefully considered the evidence on environmental matters contained in the Final EIR and make findings pursuant to Section 21081 of the Public Resources Code.

The Field is now a virtually abandoned oil field and development of a gas storage facility there will not result in a significant land use change or environmental impact on the immediate vicinity of the field. Construction of the project will require conversion of the majority of the existing oil wells to gas reservoir use, including piping, new gas compressor plant, treatment plant electric generation, and wastewater treatment. The maximum ground disturbance would be 200 acres of the 2,471-acre area of the entire Field. The Field's present owner, Tenneco, will retain all surface ownership and the right to use the remaining surface area of the Field.

Ground clearing for construction will destroy some of the native grass vegetation and scrub wildlife habitat. Two rare animal species are believed to inhabit the site but have not been seen. Although any habitat loss diminishes the area of native land remaining in the San Joaquin Valley, the loss from the project is small relative to the greater loss caused by agricultural conversion of the site by others. Some mitigation by revegetation along pipeways is feasible. The project will cause no alteration of surface drainage, hydrology, or surface water quality. Because the project involves adaptation of an existing oil field, there will be minimal land use change. There are no sensitive land uses surrounding the site at present. Noise levels at the perimeter of the site are not estimated to be noticeable by passing traffic. The gas field structures will be visible from public roads at a distance which will prevent an unusual or adverse impact. The major facilities are remote from areas of public access and will be operated so as to cause no risk to public safety. There are no known cultural resources present which would be adversely affected by the project.

Both construction and operation will cause minor stimulation of local employment and no substantive demand for public services. The project will contribute significantly to local property tax revenues. There will be no population growth induced in this location. The project objective is to improve gas supply reliability for high priority customers. As such, it will not promote growth in the State of California because it will not provide a major new source of fuel.

The project is subject to regulation by the California Department of Oil and Gas which, among others, is responsible for ensuring that storage and withdrawal operations and wastewater injection will have negligible impact on geology or groundwater

quality. Project operation includes seasonal injection and withdrawal of natural gas and production of crude oil and natural gas liquids. Project operation will be powered by gas turbine engines with electric power cogeneration utilizing waste heat.

The gas turbine exhaust is the major source of air pollutant emissions from the project. Nitrogen oxides are the principal pollutants of concern and will add to the pollution burden of the San Joaquin Valley air basin. Use of gas turbines with cogeneration reduces the emissions rate far below that of alternative prime mover systems. The emissions rate will comply with existing applicable emissions standards of the appropriate environmental control agencies from which applicants will obtain permits to construct and operate the project. The air pollutant emissions are not estimated to cause any ambient air quality standard to be exceeded. The gas turbine operation requires annual fuel consumption of 750,000 Mcf and will slightly diminish the overall gas supply. However, there will be offsetting increased oil and natural gas liquid production from the Field.

Applicants' objectives for improved service to higher priority customers require a scale of gas storage facility that can only be met by an underground gas storage reservoir. There are no feasible economical alternatives which can meet the large annual cycle volume requirements. Applicants selected the Field after considering nearly 200 candidate sites for a new underground storage facility. The environmental review indicates that no alternative location appears to offer an environmental advantage over the Field site for the project. ✓

Environment-Mitigation

Mitigation for potential land use, noise, aesthetic, and public safety impacts is easily accomplished by centralizing gas processing facilities away from public roadways.

The only irreversible environmental impacts are: (1) the possible destruction of some portions of the populations of two rare species^{1/} if they are present on the site and (2) the consumption of natural resources, primarily the combustion of natural gas for fuel.

Some of the impact on wildlife and vegetation will be reduced by requiring that applicants plan the location and time of construction to minimize impacts on wildlife and include plans to maximize revegetation on the land within applicants' control.

The project originally was proposed to use piston-type internal combustion engines which would emit large quantities of air pollutants. Adoption of the modified design to use combustion turbine engines as prime movers will result in the lowest feasible emissions rate for the project. Gas turbines have higher fuel consumption compared with other prime movers. This is somewhat offset by the use of waste heat for electric cogeneration and by increased petroleum production from the Field.

Environment-Overall

The public safety, health, comfort, convenience, and necessity require the installation, maintenance, operation, and use of the Field, together with related facilities. The project should not, on balance, have a significant detrimental effect on the environment. The project does not compete with any person, firm, or public or private corporation in the public utilities business for furnishing or supplying gas service to the public in or adjacent to the territory in which the project shall be located.

^{1/} The kit fox and the leopard lizard.

We have reviewed the record, the Final EIR, the comments filed, and find that granting the application will not produce an unreasonable burden on natural resources, aesthetics of the area in which the proposed facilities are to be located, public health and safety, air and water quality in the vicinity, or parks, recreational and scenic areas, or historic sites and buildings, or archaeological sites.

Public Witnesses

The public witnesses included the mayor of Bakersfield, a member of the Kern County Board of Supervisors, and representatives testifying for the Kern County Board of Trade and for the Kern County Farm Bureau. The public witnesses urged that the project be approved.

No party to the proceeding opposed the project.

Governmental Agencies

Construction permits are required from the Kern County Planning Commission, the Kern County Air Pollution Control District, the U.S. Environmental Protection Agency, and the State Division of Oil and Gas.

Date of Permit

It is of extreme importance that the decision in this matter be issued in a time frame to allow applicants to acquire the necessary interests in the field and close escrow not later than July 31, 1980. If the Shell and Tenneco contracts are allowed to expire, as they do on July 31, 1980, applicants will be required to pay a \$750,000 fee to extend the Shell contract option and to renegotiate the Tenneco contract with no assurance that the same favorable terms can be preserved. It is the opinion of the parties that any renegotiation of the Tenneco agreement would require a material

increase in the consideration paid to Tenneco. Under the present agreement, Tenneco would receive \$13.5 million for the property rights. At the time of filing the application, oil produced from the Field was \$5.83 per barrel. The price at the time of hearing was \$27.42.

Findings of Fact

1. Applicants require this gas storage facility at the Field to ensure that they will be able to supply their high priority customers during an extreme peak-day during the winter, to increase extreme peak-hour supply deliverability, and to meet high priority customer annual cycle volume requirements. Applicants require the gas storage facility to upgrade the level of service to P3 and P4 customers, to assist in mitigating potential adverse impacts to their customers that could result in the event of interruption of supply, and to provide the possibility of acquiring or maintaining short-term increments of gas supply.

2. SoCal and PG&E peak demands have historically not coincided. Sharing the Field reduces the total facilities the applicants would need.

3. Sharing the Field will reduce applicants' costs and the costs to their ratepayers.

4. The Field is crossed by an existing gas transmission line which makes it very well suited for PG&E's and SoCal's common use and for integration of the systems due to the strategic location of the Field.

5. The Field will enhance the opportunity for the spot purchase and storage of natural gas.

6. Gas supplies are received by SoCal and PG&E on a nearly uniform basis year-round, but there are substantial seasonal variations in usage. The use by high priority customers is markedly peaked during the winter season.

7. Traditional gas supplies available to applicants have declined and are projected to continue to decline.

8. The Field presents a satisfactory means of meeting extreme peak-hour and peak-day demands under conditions of continuing decline of traditional sources of flowing gas supply, together with continuing growth of high priority customer demand.

9. The project, as modified to include the installation of cogeneration at the Field, is consistent with our policy and is economically feasible.

10. The electricity produced by the proposed cogeneration, and not consumed onsite, will be sold only to PG&E. Cogeneration will principally occur during the summer season when PG&E's demand for electricity is highest.

11. Development and utilization of the Field for gas storage purposes will increase the production of crude oil and natural gas liquids.

12. Revenues from the sale of crude oil and natural gas liquids will be credited to the purchased gas adjustment clause balancing account and will reduce the cost of gas.

13. Applicants have purchased or will purchase all necessary land and mineral rights in order to construct, operate, and maintain this gas storage facility at the Field.

14. The Field is now a virtually abandoned oil field and development of a gas storage field there will not result in a significant land use change or environmental impact in the immediate vicinity of the field.

15. The maximum ground disturbance would be 200 acres of the 2,471-acre area of the entire Field.

16. Ground clearing for construction will destroy some native grass. Some mitigation by revegetation on land within applicants' control is feasible and will be required hereafter.

17. Clearing will destroy scrub wildlife habitat. Two rare species are believed to inhabit the site but have not been seen. Some mitigation by planning the location and time of construction is feasible and will be required hereafter.

18. The project will improve gas supply reliability for high priority customers, will not be a major new source of fuel, and will not promote population growth.

19. Gas injection will be by gas turbine engines with electric cogeneration utilizing waste heat.

20. Nitrogen oxides from gas turbine exhaust are the principal pollutants and they will be added to the San Joaquin Valley air basin.

21. The emission rate will comply with existing emission standards, will be far below that of alternative prime mover systems, and will not cause any ambient air quality standard to be exceeded.

22. The gas turbines will require annual fuel consumption of 750,000 Mcf; however, there will be offsetting increased oil and natural gas liquid production.

23. The proposed project is essential to meet the future public convenience and necessity.

24. There are no feasible alternatives to the project.

25. The proposed project will have a significant effect upon the environment; however, such effect is far outweighed by the beneficial impacts of the project. ✓

Conclusions of Law

1. The Commission certifies that the Final EIR has been completed in compliance with the California Environmental Quality Act and the Guidelines. We have reviewed and considered the information contained in the EIR in reaching this decision. The Notice of Determination for the project is attached as Appendix A to this decision.

2. Potential environmental impacts have been or will be adequately mitigated by project design, proposed construction and operation methods, modifications of the project during this proceeding, and by conditions imposed in this opinion.

3. Any remaining environmental impacts are outweighed by the beneficial effects of the project.

4. The action taken herein should not be considered as indicative of amounts to be included in future proceedings for the purpose of determining just and reasonable rates.

5. We conclude, pursuant to Section 1001 of the Public Utilities Code, that the present and future public convenience and necessity require and will require the acquisition and operation of the Ten Section Gas Storage Project as proposed by applicants. Public convenience and necessity also require authorization of the PG&E, PLS, and SoCal Gas Transportation and Exchange Agreement associated therewith.

6. To provide the opportunity to close escrow before purchase contracts expire on July 31, 1980, this order should become effective the date hereof.

O R D E R

IT IS ORDERED that:

1. A certificate of public convenience and necessity is granted to Pacific Lighting Service Company (PLS), Southern California Gas Company (SoCal), and Pacific Gas and Electric Company (PG&E) to acquire, construct, operate, and maintain an underground natural gas storage reservoir, together with related facilities, at Ten Section Field, Kern County, as proposed by PLS, SoCal, and PG&E in this proceeding subject to the mitigation measures recommended in the Final Environmental Impact Report and in this opinion.

2. PLS, SoCal, and PG&E are authorized to carry out the terms and conditions of the Gas Transportation and Exchange Agreement dated May 23, 1979.

3. PLS, SoCal, and PG&E shall file with this Commission a detailed statement of the capital cost of the Ten Section Underground Gas Storage Project, together with related facilities, within one year following the date it is placed in commercial operation.

4. The authorization granted this decision shall expire if not exercised within two years from the date hereof.

5. The Executive Director of the Commission is directed to file a Notice of Determination for the project as set forth in Appendix A to this decision with the Secretary of Resources.

The effective date of this order is the date hereof.

Dated JUN 3 1980, at San Francisco, California.

John E. Bryan
President

Richard W. Smith

Terrence M. Smith
Commissioners

Commissioner Claire T. Dedrick, being necessarily absent, did not participate in the disposition of this proceeding.

NOTICE OF DETERMINATION

TO: Secretary for Resources
1416 Ninth Street, Room 1312
Sacramento, California 95814

FROM: California Public
Utilities Commission
350 McAllister Street
San Francisco, Calif. 94102

SUBJECT: Filing of Notice of Determination in compliance with
Section 21108 or 21152 of the Public Resources Code.

Project Title Ten Section Field Underground Natural Gas Storage Facility

State Clearinghouse Number (If submitted to State Clearinghouse)
SCH #79091907

Contact Person Bill Yuen Lee Telephone Number (415) 557-1748

Project Location
10 miles southwest of Bakersfield

Project Description
Natural gas compression and underground storage, withdrawal, cleaning and shipping, with associated production of liquid hydrocarbons.

This is to advise that the California Public Utilities Commission as lead agency has made the following determination regarding the above described project:

1. The project has been approved by the Lead Agency.
 disapproved
2. The project will have a significant effect on the environment.
 will not
3. An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
 A Negative Declaration was prepared for this project pursuant to the provisions of CEQA. A copy of the Negative Declaration is attached.

Date Received for Filing _____

JOSEPH E. BODOVITZ
Executive Director

cc: Gale Enstead
County Clerk, Kern County
1415 Truxtun Avenue
Bakersfield, CA 93301

Date _____