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ORIGINAL

Decision No. 86661

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the matter of the application of PACIFIC GAS AND ELECTRIC COMPANY for a certificate of public convenience and necessity to construct, install, operate, maintain, and use Unit 13 at The Geysers Power Plant together with transmission lines and related facilities.

Application No. 54750
(Filed March 22, 1974)

(Electric)

Kermit R. Kubitz, Attorney at Law, for Pacific Gas and Electric Company, applicant.

John M. Heffernan, for Interested Citizens of Southern Lake County; and Ed Dilling, for himself; protestants.

Hamilton Hess, for the Sierra Club; Donald F. X. Finn, for the Geothermal Energy Institute; Nevins D. Young, Attorney at Law, for Burmah Oil & Gas Company; Warren A. Smith, for Union Oil Company of California; Ted E. Wilmsen, for Magma Power Company; J. Verne Baker, for Redbud Audubon Society; and George J. Taylor, for State of California, Air Resources Board; interested parties.

William J. Jennings, Attorney at Law, and John L. Dutcher, for the Commission staff.

O P I N I O N

Applicant's Request

In this proceeding Pacific Gas and Electric Company (PG&E) seeks an order of the Commission issuing to it a certificate under Section 1001 of the Public Utilities Code of the State of California and Commission General Order No. 131 declaring that the safety,

health, comfort, and convenience of the public and the present and future public convenience and necessity require or will require the construction, installation, operation, and maintenance of Unit 13 at The Geysers Power Plant, together with transmission lines and related facilities.

Hearings were held in Lakeport before Examiner Gillanders on November 4, 5, 6, 7, 1975, January 13, 14, 15, 16, 1976, and February 24, 25, 26, 1976. A final day of hearing was held at Lakeport before Examiner Gilman on June 21, 1976. Examiner Gillanders issued his Final Environmental Impact Report on August 18, 1976. Exceptions to the report were filed on September 7, 1976 and a reply on September 22, 1976.

PG&E's Proposal

In this proceeding PG&E seeks a certificate for a thirteenth unit at The Geysers Power Plant. This unit is to consist of one turbine with a gross rating of 140,000 kw designed for steam at 100 pounds per square inch gauge and 338.3 degrees Fahrenheit, one 155,300 kva, 13,800 volt, hydrogen-cooled generator, one surface condenser with gas ejectors and condensate pumps, and one cooling tower, together with related facilities. This unit will be provided with a steam supply of not less than 2,614,500 pounds per hour. Transformation will consist of one 155,300 kva, 13.8-230 kv. 3-phase transformer.

Major equipment will be purchased after competitive bidding. Field installation of equipment and other work will be done by prime contractors selected on the basis of competitive bids.

The proposed Unit 13 site is located on the eastern side of the Mayacamas Mountains in the lower southwestern portion of Lake County near the Lake-Sonoma County boundary. The site is in a sheltered valley, designated for purposes of the application as "Hidden Valley," and is about 1.7 miles west of the community of Anderson Springs and approximately six miles from Middletown.

Transmission Line

The proposed route of the 230 kv transmission line required for Unit 13 runs westerly from the unit and joins the existing 230 kv transmission line that connects Units 9 and 10 to PG&E's Fulton Substation. The line will be approximately 2.1 miles long and will consist of 1,113,000 CM, 61 strand non-specular aluminum conductors strung on approximately 12 double circuit, square-base, lattice steel towers averaging about 110 feet in height. Unit 13 will require the stringing of only one circuit.

The lands along the route of the line in Lake County are presently not zoned. The lands along the route in Sonoma County are zoned agricultural. There are no parks, recreation areas, historical areas, or scenic areas within one mile of the proposed route of the transmission line. The line does pass within one mile of Camp Verdant Vales - a settled area and within one mile of Birdsong Meadows - an area of archaeological significance.

Government Agencies

The governmental agencies from which approvals are required for Unit 13, including the transmission line, other than this Commission are the Lake County Building Department and the Lake County Air Pollution Control District.

Steam Supply

Geothermal steam to be used in Unit 13 will come from a proven geothermal steam field originally developed by Signal Oil and Gas Company^{1/} on certain of its properties in Lake and Sonoma Counties. PG&E will purchase this steam from Burmah in accordance with the terms of an agreement (Exhibit 14) which is substantially similar to PG&E's 1970 agreements with its other geothermal steam suppliers.

Because the limits of the steam reservoir in the area of The Geysers have not yet been established, it is not known how many

^{1/} Now owned by Burmah Oil & Gas Company.

units ultimately can be constructed at The Geysers. However, based on experience and performance of wells supplying steam for the existing units, the proven steam reserves appear to be sufficient for Unit 13.

We have consistently held in our decisions^{2/} that the 1970 steam sale contracts have had no anticompetitive effect in the relevant market; that the contracts do not foreclose competition in any measurable share of the relevant market; that more than sufficient energy sources, including geothermal steam, remain available to others to allow them to generate electricity if they choose to do so; that the 1970 steam sale contracts do not unreasonably foreclose competitors from The Geysers steam field; and that PG&E's contractual rights over this portion of The Geysers steam field do not constitute monopoly power in the relevant market. No party has raised anticompetitive issues in this proceeding, but because such issues have been raised in prior Geysers' applications, we have, on our own motion, considered the possibility of antitrust aspects of the steam contract.

Our review of the Burmah contract leads us to the same conclusions.

PG&E desires to proceed with the installation of Unit 13 to provide an additional economic source of power for its system to promote the conservation of fossil fuels through utilization of geothermal steam, and to comply with the terms of the geothermal steam sale agreements.

The financial ability of PG&E to construct and operate the proposed unit is shown in PG&E's Annual Report to the Commission for the year ended December 31, 1972, filed with the Commission and incorporated herein by reference. PG&E proposes to finance the construction of Unit 13 by using, to the extent available, its working capital, moneys in reserve, funds not required for immediate use, and the proceeds of the issue and sale of such stocks, bonds,

^{2/} Decision No. 85276 dated December 30, 1975 in Application No. 53465 contains detailed discussion, findings of fact, and conclusions of law regarding the 1970 steam sales contracts.

notes, or other evidences of indebtedness as the Commission shall hereafter, by proper application, authorize for that purpose.

Rates to be charged for service to be rendered by means of the construction proposed herein are the PG&E system electric rates now in effect or as may be authorized by the Commission in the future.

Environmental Matters

A comprehensive record on environmental matters was developed in this proceeding through public hearings, preparation of a Draft EIR by our staff, consultation with public agencies, and presentation of expert testimony and exhibits by various parties, all of which are elements in the EIR process culminating in the issuance of the Final EIR.

This decision includes, pursuant to Rule 17.1 of our Rules of Practice and Procedure, a series of findings based on the Final EIR's coverage of (a) the environmental impact of the proposed action, (b) any adverse environmental effects which cannot be avoided if the proposal is implemented, (c) mitigation measures proposed to minimize the impact, (d) alternatives to the proposed action, (e) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, (f) any irreversible environmental changes which would be involved in the proposed action should it be implemented, and (g) the growth-inducing impact of the action.

Findings of Fact

1. Undisputed evidence demonstrates the need for the new electric generation to be provided by Geysers Unit 13.
2. PG&E is a publicly regulated utility engaged inter alia, in the generation, transmission, and distribution of electric power in northern and central California. PG&E generates electric power in hydroelectric plants, nuclear plants, fossil fuel plants, and geothermal plants.

3. Development of the available supplies of geothermal steam which are known to be of practical value for the generation of electric power is in the best interest of the State.

4. Geothermal steam has some advantages as a power source for electric generation over other forms of energy:

- a. Its use produces a minimal adverse effect on the environment, as no combustion exists by which combustion by-products may be released into the atmosphere.
- b. The power plants are proving to be highly reliable since need for a boiler system is eliminated.
- c. Its use conserves other forms of natural resource energy, especially fossil fuels.

5. Geothermal steam has some disadvantages as a power source for electric generation in comparison with other forms of energy:

- a. The technology for use of the steam and for estimation of steam reserves is still in the pioneering stage, and thus risks associated with making large capital expenditures in order to use the steam are greater than those associated with constructing more conventional power plants.
- b. Shutting down steam wells can damage the wells. Thus, it is best not to use geothermal plants for peaking (low-load factor) operation, and such plants are better used for base load (high-load factor) operation.
- c. Since geothermal steam can only be transmitted economically for a maximum of about one to one and one-half miles, and the generating plants have no boilers which can be converted to other energy fuels, the plants are especially vulnerable in the event a local steam supply fails.
- d. In generating electricity at The Geysers certain noncondensable gases which are contained in the steam are released into the atmosphere, thereby adding to noncondensable gas emissions in the area which

result either naturally or through steam well production. One of these gases is hydrogen sulfide, the odor of which is found disagreeable by many persons. As yet there is no proven process for preventing emissions of hydrogen sulfide in the generation process, although PG&E is endeavoring to develop a process which will do so.

6. Production of geothermal steam is still a developing technology. After years of actual production at The Geysers, it is still not known whether such production is from one field or more than one field. There are conflicting data on this point.

7. The geothermal steam resources at The Geysers are themselves relatively small and unimportant compared to the total available sources for generating electricity in the relevant market, which include nuclear and fossil fuels, hydro, and geothermal steam, available in the geographical area lying north of the Tehachapi Mountains.

8. The long-term and the exclusive dealing provisions of the steam sale contract are reasonable and in the public interest. They are necessary to assure a reliable supply of steam for the full life of the generation and transmission equipment installed to utilize it, and thus give PG&E an opportunity to recover the investment made in pioneering the development and use of geothermal steam as a source of energy for electric power generation.

9. The provision of the steam sale contract that, in the event PG&E does not exercise its right to purchase steam within a specified length of time, the steam supplier can sell the steam to others or use it itself for "process, chemical, or manufacturing purposes" does not preclude sale or use of the steam for generating electricity.

10. The long-term nature of the contract is not unreasonable in view of the large investment required to construct the generating

plants and necessary transmission lines and the continuing need of the public for electric power.

11. The provision of the steam sale contract that the supplier compensate PG&E, if it sells steam to others and thereafter steam supplies for PG&E plants are reduced, is not unreasonable in view of the large investment required to construct the generating plants and necessary transmission lines, the need of the public for a reliable, long-term source of electric power, and the newness of the technology of production of geothermal steam.

12. The steam sale contract assures the continued long-term availability of geothermal steam at a reasonable price for generating electric power.

13. Development of the ability to use geothermal steam for electric power production at The Geysers might not have been possible if PG&E had not participated in the pioneering by constructing generating plants.

14. If PG&E had not entered into the present contract with Burmah, the developer would have had no market for its steam, and no funds with which to continue its development of the new resource, until some speculative time in the future.

15. PG&E's obligations under the steam sale contract to construct generating plants and purchase steam are conditioned upon its obtaining certificates of public convenience and necessity from this Commission. This Commission has the jurisdiction and authority to consider any possible anticompetitive effects of the contract each time a certificate is sought and can protect the public interest as circumstances in the future may warrant.

16. The steam sale contracts commit PG&E to operate geothermal steam plants at a high-load factor (i.e., base-load operation).

17. The cost of steam for the electric energy produced at The Geysers is based on a complex formula that reflects PG&E's weighted average costs of fossil and nuclear fuel from the preceding year.
18. PG&E load forecasts demonstrate that PG&E will have a retail and wholesale market for the electric power which will be produced at The Geysers Unit 13.
19. Presently, PG&E is the only willing and able purchaser of geothermal steam at The Geysers.
20. Any impact of the steam sale contracts on freedom of trade is remote and speculative.
21. It is in the public interest to encourage the development of the technology for the use of geothermal steam for the production of electric power.
22. PG&E's present steam sale contracts promote the development of the technology for such use of geothermal steam.
23. PG&E does not have the power to exclude other potential users of geothermal steam from wells at The Geysers which are not under contract to PG&E.
24. The purpose of the existing steam sale contract is not anticompetitive. The restrictive provisions and lengthy term of the contract were and are necessitated by the unique characteristics of geothermal steam, the present state of knowledge of geothermal steam production, and the need of PG&E as a public utility to obtain reliable power sources for its generators.
25. The existing steam sale contract has had no anticompetitive effect in the relevant market. The contracts do not foreclose competition in any measurable share of the relevant market. More than sufficient energy sources, including geothermal steam, remain available to others to allow such entities to generate electricity if they choose to do so.

26. The existing steam sale contract does not unreasonably foreclose competitors from The Geysers steam field. PG&E's contractual rights over this portion of The Geysers field do not constitute monopoly power in the relevant market.

27. Considering the evidence introduced concerning the steam sale contract and its competitive effects, it is clear that it is consistent with the public convenience and necessity.

The Commission has carefully considered the evidence on environmental matters contained in the Final EIR, and makes the following findings pursuant to Rule 17.1(j)(3) of its Rules of Practice and Procedure:

Environmental Impact of the Proposed Action

PG&E claims that it is now capable of meeting the air quality standards prescribed by the Lake County Air Pollution Control District as such standards apply to Unit 13. Based on his evaluation of the record the examiner, as stated in the Final EIR, noted that:

"6. The Stretford process is an effective hydrogen sulfide abatement system now practicable for installation on Unit 13. If installed, as proposed, emissions of H₂S from the unit will meet the requirements set forth in the California ambient air-quality standard."

In its exceptions the Sierra Club, based on its calculations, claims that Finding No. 6 is unsupported by the record and thus takes exception to the conclusion that the construction and operation of Unit 13 "would have no significant impact on the environment". It claims that a certificate of public convenience and necessity to construct and operate Unit 13 should not be granted by the Public Utilities Commission of the State of California until "(1) it has been determined with reasonable certitude that state ambient H₂S standards would not be violated at the proposed site and in the community of Anderson Springs by the cumulative levels of H₂S which

would result from the addition of emissions from Unit 13 to present ambient levels, and (2) the abatement of H₂S during steam bypass conditions can be effected."

PG&E in its reply points out that the question of H₂S emissions from Unit 13 meeting California ambient air quality standards was discussed in detail at the Unit 13 hearings. According to PG&E the information presented by the Sierra Club in its exceptions is not new and is, in fact, based upon information that was corrected by PG&E in Exhibit 5.

According to PG&E, the evidence clearly shows that the previous values (those used by the Sierra Club in its exceptions) were based on the average in the present Sonoma County field and that actual measurements in the wells designated to supply steam to Unit 13 indicate a lower H₂S concentration. PG&E claims, therefore, that the analysis presented by the Sierra Club assumes H₂S emissions that are two or more times higher than what is expected to occur.

According to PG&E its witnesses testified during the hearing that based upon their knowledge the State ambient air quality standards for hydrogen sulfide will be met in Anderson Springs except under some very unusual weather conditions and that Mr. Tucker of the Lake County Air Pollution Control District testified, in introducing initial-authority-to-construct conditions, that meeting these conditions will protect the people of Lake County from air pollution from Unit 13. In essence, according to PG&E Mr. Tucker said that PG&E would not obtain an authority to construct unless air quality standards are met, for which Lake County APCD had dual responsibility with this Commission.

28. We have reviewed the record, the Final EIR, the exceptions, and reply thereto and find that granting the application will have no significant impact on the environment due to H₂S emissions.

Any Adverse Environmental Effects Which Cannot
Be Avoided if the Proposal is Implemented

29. If the construction is done as proposed, there will be a loss of wildlife habitat.

Mitigation Measures Proposed to Minimize the Impact

It is the position of the California Department of Fish and Game that there will still remain an area of wildlife habitat which will be lost at each site from covering by buildings and pavement. For mitigation of this loss, it recommended that the collective amount of the area for the power plant be determined, and an equivalent area be purchased or reserved and maintained for wildlife until such time as the power plant site is restored to original condition. The examiner in his Final EIR concluded that replacement wildlife habitat should be provided. Union and Magma Power Company filed exceptions to the conclusion. Union claims there is no evidence to support this conclusion. Magma claims the conclusion should be deleted in light of its discriminatory nature. PG&E did not comment nor reply.

The record shows that PG&E did not purchase any land for its installations at The Geysers. The record also shows that the steam suppliers do not purchase land.

All land is leased from the property owners. Between the units and its associated steam supply fields over 700 acres are leased. Surely PG&E can arrange for another 7 acres of leased ground that can be devoted to wildlife habitat for as long as the units and their associated steam fields exist. We will order PG&E to make lease arrangements for the equivalent area covered by Unit 13; we expect PG&E to work with the Department of Fish and Game in determining suitable replacement sites.

30. PG&E shall provide suitable replacement sites for wildlife habitat of at least seven acres.

Alternatives to the Proposed Action
Alternative Types of Generation

31. In the event of "no Project" as an alternative, PG&E would attempt to generate sufficient power for its system needs by utilizing other resources on its system. In this event, its system would consume substantially greater quantities of fuel oil than it would if Unit 13 was in operation. This would result in an increased amount of air pollutants discharged into the atmosphere at some other locations in California.

Relationship Between Local Short-Term Uses
Of Man's Environment and the Maintenance
And Enhancement of Long-Term Productivity

32. There are no irreversible and long-term impacts of Unit 13. Short-term effects would be the impact on air quality and the temporary effects resulting from plant construction. Balanced against these environmental effects are PG&E's obligation to provide needed electric energy in its service territory and the adverse impacts, both social and environmental, of any failure to do so.

33. The only short-term use of the environment involved in construction and operation of the proposed transmission line is in the use of land in the transmission line corridors. Balanced against this short-term use are the energy needs of PG&E's customers in the northern California area.

Irreversible Environmental Changes Which
Would be Involved if the Proposed Action
Should be Implemented

34. There are no irreversible environmental effects of the proposed construction and operation of Unit 13.

35. There are no irreversible environmental changes involved in the construction and operation of PG&E's proposed transmission line.

Growth Inducing Impact of the Proposed Action

36. Construction and operation of Unit 13 will have some minimal growth inducing impact resulting from the addition of construction employees during construction of the unit and some permanent employees for operation of the plants. These permanent employees will presumably live in the area and to that extent there will be some growth. In addition, there will be some secondary effects resulting from the impact of the additional property taxes and new employees' salaries on the local economy.

37.a. The need to build Unit 13 in order to provide reliable electric service is a response to anticipated growth in PG&E's territory.

b. Unit 13, as a generating resource in an integrated system, can affect growth in PG&E's service territory to some extent in the sense that reliable electric service is a factor. However, growth causation obviously involves more direct factors such as zoning and the attractions of climate and economic opportunity.

c. Without additional generating capacity, reliable electric service could not be maintained, even for present customers, as new customers are added and sufficient load growth occurs. In that event PG&E would not meet one of its fundamental public utility obligations.

38. The transmission line associated with Unit 13 is being constructed to meet expected electrical demand, not to create any increased demand.

Environmental Assessment in the Aggregate

39. In summary, the project should not, on balance, have a significant effect on the environment.

40. The public safety, health, comfort, convenience, and necessity require the installation, maintenance, operation, and use of Unit 13 together with transmission lines and related facilities at The Geysers Power Plant in compliance with the terms of the geothermal steam sale agreements.

41. The proposed new project does not compete with any person, firm, or public or private corporation in the public utilities business, for furnishing or supplying electric service to the public in or adjacent to the territory in which PG&E's geothermal steam electric generating unit operates.

42. The proposed construction of Unit 13 does not have the effect of limiting or preventing the generation by others of electricity from geothermal steam produced in The Geysers area.

43. As a matter of law, PG&E must comply with applicable air quality regulations lawfully adopted. Thus, there is no need to delay the issuance of a certificate of public convenience and necessity for Unit 13.

44. The construction of the proposed facility:

- a. Is reasonably required to meet area demands for present and/or future reliable and economic electric service; and
- b. 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.

45. The features of the contract referred to in these findings of fact which give PG&E exclusive control over the areas described in the contract are not against the public interest, necessity, convenience, and welfare.

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

The Notice of Determination for the project is attached as Appendix A to this decision, and the Commission certifies that the Final EIR has been completed in compliance with CEQA and the Guidelines and that it has reviewed and considered the information contained in the EIR.

Based on the foregoing findings the Commission concludes that the Unit 13 generation and transmission project should be authorized in the manner and to the extent set forth in the following order.

O R D E R

IT IS ORDERED that:

1. A certificate of public convenience and necessity is granted to Pacific Gas and Electric Company (PG&E) to construct and operate Unit 13 at The Geysers Power Plant together with transmission lines and related facilities as finally proposed by PG&E in this proceeding and as conditioned by the following:
 - a. The unit being constructed as described in PG&E's final testimony, except where changes are required by competent authority;
 - b. Berms and/or other containment being provided at the unit to handle condensate spills;
 - c. Replacement wildlife habitat being provided.

2. In the design and construction of Unit 13, PG&E is authorized to make provisions for the installation of hydrogen sulfide abatement equipment for the units which may be required by any other governmental agency having jurisdiction by law.

3. PG&E shall file with this Commission a detailed statement of the capital cost of The Geysers Power Plant Unit 13, together with transmission lines and related facilities, within one year following the date Unit 13 is placed in commercial operation.

4. The authorization granted shall expire if not exercised within three years from the effective date hereof.

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

The effective date of this order shall be twenty days after the date hereof.

Dated at San Francisco, California, this 23rd day of NOVEMBER, 1976.

[Signature]
 President
William A. ...
James L. ...
[Signature]
[Signature]
 Commissioners

APPENDIX A
NOTICE OF DETERMINATION

TO: Secretary for Resources
1416 Ninth Street, Room 1311
Sacramento, California 95814

FROM: (Lead Agency)

California Public Utilities
Commission
350 McAllister Street

San Francisco, CA 94102

County Clerk
County of _____

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

Project Title

Geysers Unit No. 13 and Related Transmission Lines

State Clearinghouse Number (If submitted to State Clearinghouse)

75090821

Contact Person

William R. Johnson

Telephone Number

415-557-1487

Project Location

Geysers, Lake County

Project Description. Application by Pacific Gas and Electric Company to California Public Utilities Commission for a certificate to construct, install, operate, maintain, and use Unit 13 at the Geysers Power Plant, together with transmission lines and related facilities (A.54750).

This is to advise that the California Public Utilities Commission
(Lead Agency)

has made the following determinations regarding the above described project:

1. The project has been approved disapproved by the Lead Agency.
2. The project will will not have a significant effect on the environment. (See Decision No. _____ attached.)
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

Signature William R. Johnson
Executive Director

Title