

Decision No. 85276

ORIGINAL

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 12)
 at The Geysers Power Plant together)
 with transmission lines and related)
 facilities.)

(Electric)

Application No. 53465
 (Filed July 19, 1972)

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Martin McDonough, Attorney at Law, for Northern California Power Agency; Hamilton Hess and Lynn M. Takaichi, for Sierra Club Geothermal Task Force, Northern California Regional Conservation Committee; George J. Taylor, Alan R. Goodley, and Kingsley Macomber, Attorney at Law, for California Air Resources Board; Donald F. X. Finn, for Geothermal Energy Institute; Marilyn Goode, for Sonoma County Tomorrow; Vane E. Suter, for Union Oil Company of California - Geothermal Division; Sherman Louis Quinlan, Jr., for Northern Sonoma County Air Pollution Control District; Donald C. Gearhart, Attorney at Law, for Union Oil Company of California; and John W. Emig, for State Department of Fish and Game; interested parties.

Vincent V. MacKenzie, Attorney at Law, and John 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 the Commission's 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 12 at The Geysers Power Plant, together with transmission lines and related facilities.

Hearings were held in San Francisco before Examiner Catey on January 30, March 12, 13, and 14, 1973 on the certificate portion of PG&E's request. Hearings were held before Examiner Gillanders at Santa Rosa on May 14, 15, and 16, 1974 and at San Francisco on August 5, 6, and 7, 1974 on the environmental impact phase. The examiner issued his Final Environmental Impact Report on August 29, 1975. Exceptions to the report were due not later than September 18, 1975. No exceptions were filed, thus the matter is ready for final decision.

PG&E's Proposal

In this proceeding PG&E seeks a certificate for a twelfth unit at The Geysers Power Plant. This unit is to consist of one turbine with a nameplate rating of 110,000 kw designed for steam at 100 pounds per square inch gauge and 355 degrees Fahrenheit, one 132,000 kva, 13,800 volt, hydrogen-cooled generator, one direct contact condenser with gas ejectors and condensate pumps, and one cooling tower, together with related facilities. The net normal capability of Unit 12 will be 106,000 kilowatts. This unit will be provided with a steam supply of not less than 2,000,000 pounds of

steam per hour at a pressure of 100 pounds per square inch gauge and a temperature of approximately 355 degrees Fahrenheit. Transformation will consist of one 132 mva, 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 location of Unit 12 is planned to be about one mile northwest of the Units 9 and 10 site on land to be provided by Union Oil Company of California (Union), Magma Power Company (Magma), and Thermal Power Company (Thermal).

Transmission Line

The transmission facilities will consist of a 230 kv double circuit tower line with one circuit strung, originating at Unit 12. The line will be 1,113 MCM, 61-strand nonspecular aluminum cable with summer normal and summer emergency capacities of 318 and 387 mva, respectively. The route selected proceeds southeasterly about 1.2 miles to a junction with the 230 kv transmission line which will connect Units 9 and 10 to the future Geysers substation.

The route of the proposed transmission line was selected by PG&E to utilize best the topography of the area to provide for the optimum blending of the line with its environment taking into account the location of the termini, Unit 12, and the tap point. The towers will be of a square base, lattice design averaging about 110 feet in height. This type of tower, along with the nonspecular conductors, will blend into the natural environment better than would single, steel pole-type structures since the latter would be more visible against the foliage of brush and tree covered hillsides.

The lands along the route of the line are presently zoned unclassified with no change in zoning contemplated. The lands are adaptable for mining, wildlife habitat, and watershed purposes. The route of the proposed transmission line will not conflict with the provisions of any adopted general plan of the county of Sonoma. There are no parks, recreation areas, scenic areas, settled areas, nor are there any known areas or objects of historical or archaeological significance within one mile of the proposed route of the transmission line.

Government Agencies

The governmental agencies from which approvals are required for Unit 12, including the transmission line, other than this Commission are the Sonoma County Building Department and the Northern Sonoma County Air Pollution Control District.

Steam Supply

By agreement of the parties, a portion of the record in the certificate proceedings for Units 7 and 8 (Application No. 51892)^{1/} was incorporated by reference into this proceeding along with the Commission's decision on Units 7 and 8 (No. 79402), 9 and 10 (No. 79403), and 11 (No. 80479).^{2/} The portion of the records so incorporated dealt in general with the steam purchase contracts between Union and PG&E and Magma-Thermal and PG&E, the steam supply situation, the ownership of lands in The Geysers area, and the plans

^{1/} Tr. pp. 37 through 230; Exhibits 8 through 16.

^{2/} Unit 11 (Application No. 53127), Exhibits 1 through 7, and Tr. pp. 11-30 and 50-82 were also incorporated by reference.

and proposals of NCPA. No new evidence on any of these matters was introduced at the hearing on Unit 11, except as indicated below, and those portions of the decision granting the certificate for Units 7 and 8 referring to those matters are pertinent here.

PG&E now purchases steam from Union and from Magma-Thermal under parallel contracts dated May 11, 1970. These contracts were introduced as Exhibits 8 and 9 in the Units 7 and 8 proceeding (Application No. 51892). PG&E's expert testified in that proceeding that in his opinion there is presently available steam to support an additional 200,000 to 300,000 kilowatts beyond Units 7 and 8. In the Unit 11 proceeding Exhibit 7 was a letter from Professor Ramey, dated June 13, 1972, in which he indicated that in his opinion the lands controlled by PG&E's steam suppliers contained sufficient steam to support at least 800 MW of capacity.

PG&E's operating experience with the first six units at The Geysers Power Plant has been, and is, satisfactory. Exploratory wells have been drilled in the areas in which it is planned to install Units 7 through 12. Under the steam purchase contracts, additional wells to supply steam to these units are to be completed 14 months prior to their commercial operating dates. Magma-Thermal and Union will indemnify PG&E if there is insufficient steam to supply Unit 12.

PG&E desires to proceed with the installation of Unit 12 to provide an additional economic source of power for its North Bay Division, 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, 1971, filed with the Commission on

March 27, 1972. PG&E proposes to finance the construction of the Unit 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, notes, or other evidences of indebtedness as the Commission shall hereafter, by proper application, authorize for that purpose. Rates to be charged are the PG&E system electric rates now in effect or as may be authorized by the Commission in the future.

Northern California Power Agency (NCPA)

As stated, a large portion of the record of the Units 7 and 8 proceeding was incorporated by reference in this proceeding. Accordingly, that part of the Units 7 and 8 decision (Decision No. 79402) dealing with the matters raised by NCPA is repeated in full:

"Northern California Power Agency (NCPA)

"Northern California Power Agency is a public agency created by agreement under the statute authorizing such action as an exercise of joint powers, under Section 6500 et seq. of the Government Code. The members of the Agency are the cities of Alameda, Biggs, Gridley, Healdsburg, Lodi, Lompoc, Palo Alto, Redding, Roseville, Santa Clara, and Ukiah, each of which owns and operates a municipal electric distribution system. The purposes of the agreement are stated in it, as follows:

'...acquiring and disposing of ownership and use of revenue producing facilities, including electric generating and transmitting facilities, and making more efficient use of the common powers of individual member public agencies comprising the NCPA to acquire, purchase, generate, transmit, distribute, sell, interchange, and pool electric energy and capacity...'

"NCPA's powers include:

'...any and all powers authorized by law to all of the parties hereto, and separately to the agency herein created, relating to the acquisition, construction, disposition, use, operation and maintenance of works for the generation and transmission of electric power and energy to such area by contract with owners of such facilities including federal and state agencies and public utilities.'

"Issues Raised in the Proceeding by NCPA

"In the view of NCPA, the following issues are presented in this proceeding:

"1. Do the contracts for geothermal steam supply on which PG&E relies give PG&E exclusive control over the entire steam supply covered by the contracts?

"2. Do those contracts give PG&E the right to prevent geothermal steam supplies from being developed at all during the lifetime of those contracts?

"3. Are the steam supplies so controlled by PG&E a significant and important part of the steam supplies available to Northern California?

"4. Is the effect of the contracts substantially to lessen competition in the development of geothermal steam, and to tend or attempt to create a monopoly, and to restrain trade in electric power generated from such steam, which electric power is a part of trade or commerce among the several states?

"5. Is the public interest, as represented by NCPA, adversely affected by those contracts?

"Position of NCPA

"NCPA contends in its brief that the answer to each of the above issues is affirmative, and that the Commission should refuse to issue the certificate requested herein until PG&E renegotiates the contracts to eliminate the objectionable exclusive features.

"NCPA states that it will be happy to participate in the negotiations to revise the present contracts, in order that PG&E may be able to construct its units under a proper contract in the public interest at the earliest date.

"Position of PG&E

"PG&E, in its brief, declares that objection raised by NCPA is neither in the general interest of the public nor is it basically fair.^{2/}

"Position of Magma-Thermal

"According to Magma-Thermal,

"If Pacific Gas and Electric Company be prevented from installing the facilities necessary to carry out the terms of said contract, it would result in the following:

- '(a) Magma-Thermal would suffer irreparable injury in the permanent and complete loss of geothermal steam sales and the proceeds therefrom, none of which could ever be recovered.
- '(b) Magma-Thermal would be deprived of its market for geothermal steam and still have the continuing obligation under the existing leases without a source of income for the sale of geothermal steam, to its irreparable loss and damage.
- '(c) The public would be forever deprived of the electric energy which would be produced from the current steam supplies produced on Magma-Thermal land.

"^{2/} To this statement PG&E in the Units 9 and 10 proceeding would add that the steam supply contracts are designed to give PG&E reasonable assurance that an adequate supply of steam is available, the provisions in the contracts of which NCPA complains are reasonably necessary to secure the development and use of the resource, and that in any event an adequate supply of steam is available to NCPA at The Geysers from lands not controlled by PG&E's steam suppliers.

- '(d) The property and contract rights of Magma-Thermal would be impaired immeasurably to its irreparable damage without due or any process of law and without any compensation.'"

In this proceeding, according to PG&E, in addition to challenging PG&E's steam supply contracts with producers at The Geysers, NCPA has charged that PG&E has violated the antitrust laws by allegedly refusing to assist NCPA to become a competitor of PG&E in generating electricity. NCPA's principal concern seems to be with PG&E's alleged unwillingness to wheel power for NCPA. PG&E submits that whatever its policy may be with regard to wheeling power, that policy is wholly irrelevant to the question of whether the public convenience and necessity call for the construction of an additional generating unit at The Geysers.

In this proceeding, according to NCPA, PG&E has attempted to limit the issue to the effect of its contracts with Union and Magma-Thermal. The sole issue raised by NCPA in its participation in the proceedings on Units 7-10, which were submitted on the same evidence, related to the effect of those contracts, but the issues are broader in this proceeding. In the proceedings on Unit 11, the element of PG&E policy against providing transmission service to NCPA, or reserve on standby, or exchanges of economy energy, was added. And in this proceeding, there is the further element of PG&E's expansion of its steam holdings to include all the proven area, in the background of a growingly severe limitation on the power sources which can be utilized consistent with other public interests.

Thus, claims NCPA, the issue here is whether PG&E's total conduct, as revealed in the record, with respect to the development of the Geysers field, is consistent with the public interest.

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 12.

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. The Geysers steam field was discovered as early as 1847. Since the early 1920s it has been known that steam could be produced from a well drilled a few hundred feet below the earth's surface.

5. Magma drilled its first steam well at The Geysers in 1955.

6. In 1958 PG&E entered into its first contract to purchase geothermal steam from Magma and from Thermal.

7. In 1967 Magma and Thermal entered into a joint venture with Earth Energy, Inc., a subsidiary of Union Oil Company, whereby each assigned to the other an undivided one-half interest in its holdings within a specified area at The Geysers, and Earth Energy became the operator of those holdings. Earth Energy later merged into Union. When the 1970 steam sale contracts were negotiated, at Union's suggestion, the area of joint venture was adopted by the parties as the area within which PG&E obtained initial exclusive rights to purchase geothermal steam produced by the joint venture. This area was referred to in the hearing held on Units 7 and 8 proceeding as the "red line area." The 1970 steam sale contracts replaced the 1958 PG&E, Magma-Thermal steam sale contract, as amended.

8. The lands leased by Union, Magma, and Thermal, which are located within the red line area at The Geysers, are the only lands covered by the contract. The Geysers area is only one of various sources of hot water and steam, either separately or combined, available for use in the production of electric energy, the availability of which has already been demonstrated in some instances and in others is in the process of exploration and development. Significant geothermal discoveries have been made at Niland (Salton Sea) and

Casa Diablo (Mammoth, Long Valley). Potentially significant geothermal areas are Surprise Valley (Lake City), Mt. Lassen area, Mono Lake area, Coso Hot Springs, Imperial Valley, Calistoga, and Clear Lake.

9. The red line area shown on Exhibit A, attached to Exhibits 8 and 9 in the hearing on Application No. 51892, encompasses approximately 113,000 acres.

10. As of the time of the hearing on Application No. 51892, Union and Magma-Thermal held leases to about 15,000 acres within that area.

11. Union and Magma-Thermal are under no obligation to PG&E to obtain additional leases to lands within the red line area. There appears to have been no significant increase in the amount of land leased by Union and Magma-Thermal since September 1970.

12. Union, the operator at The Geysers steam field for the Union-Magma-Thermal joint venture, does not contemplate, under the PG&E steam sale contracts, acquiring any additional lands.

13. The presently known geothermal steam field at The Geysers includes about 19,100 acres within which steam may reasonably be expected to be found. A large percentage of this area is not subject to the Union and Magma-Thermal contracts with PG&E and would be available.

14. Estimates of the electric generating capacity which can be supported by geothermal steam at The Geysers vary considerably. These estimates range from an admittedly conservative 800 MW up to a possible 4,800 MW or more. PG&E's consultant estimates that the lands controlled by PG&E's suppliers contain sufficient proven steam for 800 MW. His estimate is based upon actual wells drilled and producing. Thus, it appears that ample steam remains at The Geysers to meet NCPA's stated plans.

15. Union has drilled at least one productive steam well in the Clear Lake vicinity at a location which is outside of the red line area. The 1970 steam sale contracts with PG&E do not apply to steam from that well.

16. Included in available sources of geothermal steam are lands in The Geysers area which are not subject to the steam sale contract. Among these are lands, leased and held by Burmah Oil and Gas Company and Pacific Energy Corporation, with established steam production presently available for generation of electric energy. Pacific Energy Corporation is the successor in interest to Geothermal Resources International (GRI) in The Geysers area. In addition, as noted in Finding 8, there are other areas within the State with hot water and steam energy now subject to exploration and development.

17. Burmah Oil and Gas Company and GRI each has drilled several active steam wells in the vicinity of The Geysers. The present steam sale contracts with PG&E do not apply to those wells.

18. 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.

19. 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 reducing or preventing emissions of hydrogen sulfide in the generation process, although PG&E is endeavoring to develop a process which will do so.

20. 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.

21. Union and others are actively exploring for geothermal steam throughout California.

22. 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 includes nuclear and fossil fuels, hydro, and geothermal steam, available in the geographical area lying north of the Tehachapi Mountains.

23. PG&E's installations at The Geysers have been and are expected to be as follows:

<u>Unit</u>	<u>Size (Net MW)</u>	<u>Year Installed or to be Installed</u>
1	11	1960
2	13	1963
3	27	1967
4	27	1968
5	53	1971
6	53	1971
7	53	1972
8	53	1972
9	53	1973
10	53	1973
11	<u>106</u>	1974
	502	

24. Under the contracts with PG&E, The Geysers steam field has been steadily developed at a pace set by the gradually developing technology of geothermal steam production. Development of a geothermal steam field must be done with care.

25. Union has not asked PG&E whether it would install generation at a rate greater than 100 MW per year, and PG&E has made no decision in that regard.

26. Since geothermal steam appears to be a depletable resource, if there is but one pool of steam at The Geysers, use of that steam by anyone other than PG&E might affect availability of steam for PG&E's plants.

27. Most of the existing wells at The Geysers have been drilled expressly for PG&E by Union and Magma-Thermal in order to produce steam for generating units installed by PG&E. These wells would not have been drilled absent the existence of a market for their output, and the steam purchase contracts provide that market. The effect of these wells on the capacity and productivity of The Geysers field is unknown, although as previously stated geothermal steam is believed

to be a depletable resource. The development of geothermal steam resources by Union, Magma, and Thermal in the area subject to the contracts is made feasible by those contracts.

28. Development of a geothermal steam field involves risks and difficulties. In any steam purchase contract PG&E would want to have sufficient rights with respect to such development to give reasonable assurance that the steam for which it contracts will be available as needed and thereby protect its investment. The Union and Magma-Thermal contracts represent a form of contract which provides PG&E such rights. Future contracts by PG&E for geothermal steam will be the product of negotiation and may take a different form. Any such contract will come before this Commission in a future certification proceeding for authorization of a unit which will use steam purchased under such contract.

29. PG&E is interested in all types of prime energy resources which can help it in its continuing need for increased electric generation in order to satisfy the public's growing demand for electric power. It is interested in obtaining additional steam supplies at The Geysers from suppliers other than Union, Magma, and Thermal. PG&E has no preference as to who supplies the steam for its generators in meeting its continuing need for additional energy sources.

30. PG&E has been negotiating with Burmah Oil and Gas Company and Pacific Energy Corporation for additional steam supplies at The Geysers. Even if PG&E obtains contracts with these suppliers, PG&E will not control the entire Geysers field and there will be many acres in the general area left.

31. PG&E has not negotiated to acquire additional steam supplies at The Geysers other than with Signal and Pacific Energy.

32. The long-term and the exclusive dealing provisions of the steam sale contracts 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.

33. The provision of the steam sale contracts 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.

34. The long-term nature of the contracts 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.

35. The provision of the steam sale contracts that the suppliers compensate PG&E, if they sell 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.

36. The steam sale contracts assure the continued long-term availability of geothermal steam at a reasonable price for generating electric power.

37. 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.

38. If PG&E had not entered into the present contracts with Union and Magma-Thermal, the developers would have had no market for their steam, and no funds with which to continue their development of the new resource, until some speculative time in the future.

39. PG&E's obligations under the steam sale contracts 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 these contracts each time a certificate is sought and can protect the public interest in free trade, as circumstances in the future may warrant.

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

41. The cost of electric energy produced at The Geysers under the contracts is approximately equal to the average cost of electric energy now produced by PG&E at its other generating plants.

42. 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 12.

43. NCPA's plans for using geothermal steam are vague and speculative. It made no showing that it is capable of carrying out its plans to build geothermal electric generating plants.

44. PG&E's steam supplier, Union Oil Company, attempted unsuccessfully to contract with NCPA, but determined NCPA had no present or foreseeable ability to use the steam thereafter "dedicated" by contract to PG&E.

45. NCPA has been negotiating with both Burmah Oil and Gas Company and Pacific Energy Corporation and its predecessors in interest for a number of years.

46. NCPA could not utilize to capacity the steam from wells controlled by Union if it had purchased this steam, thus requiring the shutting down of wells with consequent stress and economic loss.

47. NCPA did not show that any party to the steam contract refused to sell steam to it.

48. Union and Magma-Thermal contracted with PG&E in 1970 only after Union, acting for the three suppliers, negotiated with NCPA and concluded that a timely sale contract with NCPA could not be obtained.

49. PG&E has no policy of standing in the way of negotiations between NCPA and steam suppliers, or of opposing the installation of facilities by NCPA, or of attempting to influence potential suppliers of geothermal steam not to contract with NCPA. PG&E does not have a policy of preventing NCPA from developing generation at The Geysers.

50. PG&E competes in the market for new steam reserves. In contracting for new reserves of steam PG&E seeks to assure itself of an adequate supply of geothermal steam for each new electric generating unit it plans to install.

51. NCPA is free to contract with steam suppliers at The Geysers other than Union and Magma-Thermal, for a steam supply adequate to meet its stated plans. It has already negotiated with Burmah Oil and Gas Company and Pacific Energy Corporation in an apparent effort to do so.

52. NCPA made no showing that it could use geothermal steam practicably. NCPA may be unable to use geothermal steam for generating electricity because prudent operation of the steam wells requires continuous, high-load factor operation and a minimum of shutdowns, whereas NCPA's needs would be for peaking generation and thus would require low-load factor operation.

53. At the hearing held in September 1970 on Geysers Units 7 and 8, Application No. 51892, NCPA's sole expert witness did not know that developers other than Union and Magma-Thermal had geothermal

steam holdings at The Geysers, prior to learning of them at the hearing. Since then NCPA has negotiated with Burmah Oil and Gas Company and Pacific Energy Corporation, but has not arrived at a contract with either.

54. PG&E is the only willing and able purchaser of geothermal steam at The Geysers. For reasons which NCPA chose not to disclose at the hearing, NCPA had not yet contracted for any such steam.

55. Any impact of the steam sale contracts on freedom of trade is remote and speculative.

56. 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.

57. The 1970 steam sale contracts promote the development of the technology for such use of geothermal steam.

58. 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 of PG&E.

59. Steam developers are showing great interest in The Geysers steam field. PG&E has been approached by several developers interested in producing and selling steam: Getty Oil Company, Pacific Energy Corporation, Shell Oil Company, and Burmah Oil and Gas Company.

60. PG&E is obligated to sell wholesale power to NCPA's member cities at reasonable rates which are subject to Federal Power Commission regulation.

61. PG&E is presently supplying all or part of the wholesale electric power needed by several of NCPA's member cities. The balance of the power needed by those cities is supplied by the Bureau of Reclamation.

62. NCPA has not contended that any of its member cities has experienced a power shortage or that PG&E will be unable to meet their future needs for wholesale electric power.

63. The purpose of the 1970 steam sale contracts is not anti-competitive. The restrictive provisions and lengthy term of contracts 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.

64. The 1970 steam sale contracts have 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 NCPA and others to allow such entities to generate electricity if they choose to do so.

65. The 1970 steam sale contracts do 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.

66. Considering all the evidence introduced concerning the 1970 steam sale contracts and their competitive effects, it is clear that they are consistent with the public convenience and necessity.

67. NCPA cities and all other wholesale and retail customers of PG&E will benefit from electric power generated by geothermal steam at The Geysers pursuant to PG&E's contracts with Union and Magma-Thermal and sold at reasonable, nondiscriminatory rates established by this Commission and by the Federal Power Commission.

68. NCPA has not furnished this Commission with any of its plans for acquiring generation. There is not sufficient evidence to determine whether and in what manner and under what terms and conditions NCPA is entitled to any relief from PG&E in the public interest.

69. There is no evidence that PG&E has any policy towards NCPA of refusing to deal with NCPA on reasonable terms or that any of PG&E's actions with respect to The Geysers are part of a plan to monopolize the production of electric power in northern and central California.

70. Construction of this facility without condition will not interfere with NCPA's ability to plan or construct generation facilities.

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

71. PG&E is not yet capable of meeting the air quality standards prescribed by the Northern Sonoma County Air Pollution Control District. Granting the application will have no other significant impact on the environment. In accordance with Orange County Air Pollution Control District v PUC (1971) 4 Cal 3d 945, we will condition our approval upon the approval of the Northern Sonoma County Air Pollution Control District.

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

72. The present state of the art of H₂S removal is such that the emissions of H₂S from Unit 12 will exceed the limits set by the air pollution control district. The evidence shows that when the limits are exceeded, the resulting smell is a nuisance but is not a health hazard. The air pollution control district can order a H₂S reduction unit be installed at Unit 12 which will, in most instances, control the emissions of H₂S and hold such emissions to the limits specified in their regulations.

Mitigation Measures Proposed to Minimize the Impact

73. PG&E's proposed measures to mitigate H₂S emissions are the same as those now presenting problems at Unit 11 (iron catalyst method).

Alternatives to the Proposed Action
Alternative Types of Generation

74. 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 12 were 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

75. There are no irreversible and long-term impacts of Unit 12. 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.

76. The only short-term use of the environment involved in construction and operation of the proposed transmission lines 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

77. There are no irreversible environmental effects of the proposed construction and operation of Unit 12.

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

Growth Inducing Impact of the Proposed Action

79. Construction and operation of Unit 12 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 plant. These permanent employees will presumably live in the area and to that extent there will be some growth. In addition, there may be some secondary effects resulting from the impact of the additional property taxes and new employees' salaries on the local economy.

80.a. The need to build Unit 12 in order to provide reliable electric service is a response to anticipated growth in PG&E's territory.

b. Unit 12, 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.

81. The transmission lines associated with Unit 12 are being constructed to meet expected electrical demand, not to create any increased demand.

Environmental Assessment in the Aggregate

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

83. The public safety, health, comfort, convenience, and necessity require the installation, maintenance, operation, and use of Unit 12 together with transmission lines and related facilities at The Geysers Power Plant in compliance with the terms of the geothermal steam sale agreements, and that the requested certificate be issued.

84. The proposed new project does not compete with any person, firm, or public or private corporation in the public utilities business, including particularly NCPA, 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.

85. The proposed construction of Unit 12 does not have the effect of limiting or preventing the generation by others of electricity from geothermal steam produced in The Geysers area, including particularly by NCPA.

86. PG&E is pursuing a test program on its operating units designed to minimize emissions of hydrogen sulfide. PG&E will furnish the results of these tests to the Air Resources Board and will otherwise cooperate with the Board. 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 12.

87. 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 archeological sites.

88. The features of the contracts referred to in these findings of fact which give PG&E exclusive control over the areas described in those contracts are not against the public interest, necessity, convenience, and welfare; in such respects such contracts are not in restraint of trade or commerce among the several states; they do not monopolize or attempt to monopolize a part of the trade among the several states; they do not propose a combination of acts to create and carry out restrictions in trade or commerce within this state, and do not prevent competition in manufacturing, making, transportation, sale, or purchase of electric energy in this state, and thus are not in violation of the Cartwright Act.

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 12 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 to construct and operate Unit 12 at The Geysers Power Plant together with transmission lines and related facilities all as proposed by Pacific Gas and Electric Company in this proceeding.

2. In the design and construction of Unit 12, Pacific Gas and Electric Company is authorized to make provisions for the installation of a hydrogen sulfide abatement equipment for Unit 12, which may be required by any other governmental agency having jurisdiction by law.

3. Pacific Gas and Electric Company shall file with this Commission a detailed statement of the capital cost of The Geysers Power Plant Unit 12 together with transmission lines and related facilities within one year following the date Unit 12 is placed in commercial operation.

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

5. Pacific Gas and Electric Company shall, within ninety days after the effective date of this order, file a detailed statement describing its testing, plans, and schedule for a program to reduce hydrogen sulfide emissions at The Geysers Power Plant Unit 12. Such statement shall include the agreement with Northern Sonoma County Air Pollution Control Board approving such a plant.

6. Pacific Gas and Electric Company shall, within one hundred eighty days after the effective date of this order, and quarterly thereafter, file a report describing its progress under the program required under Ordering Paragraph 5.


7. On completion of its program, but not less than one year after the effective date of this order, Pacific Gas and Electric Company shall furnish a report describing the cost and operation, or the plans therefor, for modification of Unit 12 to mitigate hydrogen

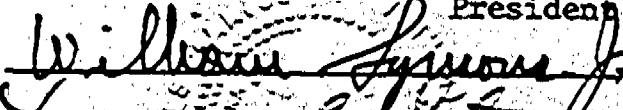

sulfide emissions resulting from the operation of this Unit. Such report should include the development of the effect from the hydrogen sulfide mitigation program upon the average cost of power of Unit 12.


The Secretary 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.

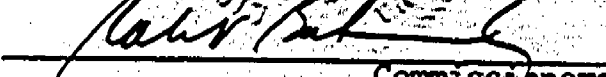
The effective date of this order shall be twenty days after the date hereof.

Dated at San Francisco, California, this 30th day of DECEMBER, 1975.



President






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 21105
 or 21152 of the Public Resources Code

Project Title

Geysers Unit No. 12 and Related Transmission Lines

State Clearinghouse Number (If submitted to State Clearinghouse)

740311131

Contact Person

William R. Johnson

Telephone Number

415-557-1487

Project Location

Geysers, Sonoma 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 12 at the Geysers Power Plant together with transmission lines and related facilities (A.53465).

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 by the Lead Agency.
☐ disapproved
2. The project ☐ will have a significant effect on the environment.
☒ will not (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
 Secretary

Title
 Date

DO NOT WRITE IN THIS SPACE