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ORIGINAL

Decision No. 91854 JUN 3 1980

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 18)
at The Geysers Power Plant, together)
with transmission lines and related)
facilities.)
(Electric)

Application No. 59414
(Filed January 31, 1980)

O P I N I O N

Introduction

In this proceeding Pacific Gas and Electric Company (PG&E) seeks an order of the Commission issuing to PG&E a certificate of public convenience and necessity (CPCN) under Section 1001 of the Public Utilities Code and the Commission's General Order No. 131-B declaring that the present and future public convenience and necessity require or will require the construction, installation, operation, maintenance, and use of Unit 18 at The Geysers Power Plant together with transmission lines and related facilities.

Unit 18 is subject to the jurisdiction of the California Energy Resources Conservation and Development Commission (CEC) and an application for certification (AFC) was submitted to the CEC on April 17, 1979, pursuant to Section 25540.2(a) of the Public Resources Code. Six copies of the AFC were forwarded to this Commission under cover letter dated November 9, 1979. On May 8, 1979, the CEC staff notified PG&E by letter that the AFC for Unit 18 was accepted for further processing. The CEC is the designated State lead agency for purposes of preparation and approval of the environmental impact report pursuant to Public Resources Code Section 25519(c) and the California Environmental Quality Act (CEQA). Rule 17.1 of the California Public

Utilities Commission's Rules of Practice and Procedure for implementation of CEQA is therefore not applicable.

On May 7, 1980, the CEC issued its decision granting the AFC for Geysers Unit 18, and so PG&E must now obtain from the Commission a CPCN to allow construction of the proposed project.

PG&E's Proposal

In this proceeding, PG&E seeks a CPCN for Unit 18 at The Geysers Power Plant, which is to consist of a two-cylinder, four-flow steam-turbine with a nominal gross rating of 120,000 kW at a steam flow of about 2,000,000 pounds per hour, a steam pressure of 100 pounds per square inch (gage), a steam temperature of approximately 337 degrees Fahrenheit and a turbine back-pressure of approximately 3 inches of mercury (absolute). The generator will be a 137,800 kVA, 13,800 volt, hydrogen-cooled, three-phase, synchronous unit. Other major components include a surface condenser with steam jet ejectors; condensate pumps; a mechanically-induced draft, cross-flow cooling tower; noncondensable gas removal equipment, a Stretford hydrogen sulfide abatement system, and other appurtenant and related facilities. If necessary to meet applicable air quality standards, PG&E will install secondary H₂S abatement equipment. The net normal capacity of Unit 18 will be approximately 110,000 kW. Transformation will consist of one 137,000 kVA, 13.8-230 kV, three-phase oil and air-cooled main transformer.

Contracts for major equipment have been or will be awarded on the basis of competitive bids. Field installation of equipment and construction work will be performed by contractors also selected after competitive bidding.

The Unit 18 addition to The Geysers Power Plant is located in eastern Sonoma County in the north half of Section 33, Township 11, North, Range 8 West, Mt. Diablo Base and Meridian. The Socrates Mine fill disposal area, where PG&E proposes to dispose of approximately 120,000 cubic yards of excavated material, is located in the southeast

quarter of Section 32 and the southwest quarter of Section 33, Township 11 North, Range 8 West, Mt. Diablo Base and Meridian. The Unit 18 site which covers approximately five acres is on the crest of a knoll on the east bank of Big Sulphur Creek at an elevation of approximately 2,800 feet above sea level.

Transmission Lines

The switchyard will step up the voltage from the 13.8 kV generator level to the 230 kV level necessary for economical power transmission.

Unit 18 will be connected to the Geysers transmission system by a short line approximately 4,000 feet in length. The proposed route of this 230 kV transmission line runs westerly from the Unit 18 site and joins the existing 230 kV transmission line linking Units 9 and 10 with Castle Rock Junction. The line will consist of 1,113 KCM, nonspecular aluminum conductors, strung on five, single circuit, square-base, lattice steel towers averaging about 80 feet in height.

Steam Supply

Geothermal steam for Unit 18 will come from a proven geothermal steam field developed by Union Oil Company (Union) on certain of its properties in Lake and Sonoma Counties in which Union has rights to develop geothermal steam. PG&E entered into an agreement dated May 11, 1970, to purchase geothermal steam from Union on terms substantially similar to PG&E's agreements with its other steam suppliers in the Geysers area, and previously determined by the Commission:^{1/} to have no anticompetitive effect in the relevant market; to not foreclose competition in any measurable share of the relevant market; that more than sufficient energy sources, including geothermal

^{1/} 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.

steam, remain available to allow other applicants to generate electricity if they choose to do so; that the 1970 steam sale contracts do not unreasonably foreclose competitors from Geysers steam field (recently confirmed by Notice of Intent filings before the CEC by the California Department of Water Resources for its proposed Bottle Rock and South Geysers projects and by the Northern California Power Agency for its proposed Geothermal Projects Nos. 1 and 2, all in 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.

Our review of the Union contract relevant to Unit 18 leads us to the same determinations.

Based on experience with existing wells and test data from wells already drilled by Union for Unit 18, Union's steam reserves appear to be sufficient to supply Unit 18 over its expected life of 30 to 35 years. The CEC in its Order on Availability of Commercial Resource, issued June 21, 1979, in Docket No. 79-AFC-3 determined that PG&E has reasonably demonstrated that the site proposed for Geysers Unit 18 is capable of providing geothermal resources in commercial quantities.

PG&E desires to proceed with the installation of Unit 18 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.

Cost of the Proposed Unit

A letter dated April 15, 1980 from William H. Edwards of PG&E to Administrative Law Judge (ALJ) Cline of the Commission with revised Exhibits F-1, F-2, and F-3 attached has been received in evidence as Exhibit 1 in this proceeding.

The estimated cost of the generating unit and step-up transformers is \$70,224,000. Cost of the transmission line is

estimated to be \$282,700. These estimates reflect projected material and labor price escalation through the completion date of the project.

Revised Exhibit F-2 which is a part of Exhibit 1 shows the estimated total generating cost per kWh from Unit 18 based on the capital cost estimate and the projected levelized steam payment over the unit's 30-year life. At an 80 percent capacity factor, the cost in 1982 levelized dollars of power from Unit 18, including both the capacity and energy components, is estimated to be 59 mills per kWh at the bus-bar.

Revised Exhibit F-3 which is a part of Exhibit 1 shows estimated year-by-year cost of Geysers Unit 18 for a 30-year period.

Exhibit F-4 attached to the application shows the estimated costs of gas turbines considered as the only possible alternative source of capacity to Geysers Unit 18. There are no other sources of firm generation available that can be installed within the time frame of Geysers Unit 18 considering the time required for normal regulatory review and plant construction. Gas turbine units, however, have the shortest lead time of any commercially available generating technology and could, if normal licensing requirements were shortened, be installed by October 1982. The cost of power from such units, however, is significantly higher than the estimated costs of Geysers Unit 18. A comparison of the year-by-year costs of the gas turbine alternative to Geysers Unit 18 for a 30-year period is shown in revised Exhibit F-3.

Financial Considerations

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, 1978, filed with the Commission. PG&E proposes to finance the construction of Unit 18 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 evidence of indebtedness as the Commission shall hereafter, by proper application, authorize for that purpose.

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

Matters Determined by the CEC

Public Utilities Code Section 1001 requires the Commission as part of its certification process to consider the following factors: (a) community values, (b) recreational and park areas, (c) historical and aesthetic values, and (d) influence on environment. In 1974, Section 1001 was amended to provide that:

"With respect to any thermal powerplant or electrical transmission line for which a certificate is required pursuant to the provisions of Division 15 (commencing with Section 25000) of the Public Resources Code, no certificate shall be granted pursuant to this section without such other certificate having been obtained first, and the decision granting such other certificate shall be conclusive as to all matters determined thereby and shall take the place of the requirement for consideration by the commission of factors (a), (b), (c), and (d) specified in this section."

On May 7, 1980 the CEC issued its decision granting PG&E's AFC for Geysers Unit 18 subject to certain conditions. A copy of this decision is received in evidence as Exhibit 2.

On page 4 of the decision the CEC found:

"1. The additional capacity to be added by Geysers Unit 18 is needed to meet anticipated growth in demand for electricity, retirement of older facilities, potential losses from the expiration of contracts for power from the Pacific Northwest, and oil and gas reduction policies shown in the forecast of service area electric power demands adopted pursuant to Public Resources Code section 25309."

Site Q, PG&E's selected site, survived the selection process.

On page 8 of the decision the CEC found:

"10. If the mitigation measures enumerated herein (see Biology) are undertaken by PG&E, Site Q

is a feasible, environmentally acceptable site, and there are no more feasible, less environmentally damaging alternative sites than Site Q."

Regarding the cultural resources the CEC on page 14 of the decision found:

"19. Constructive activity on Unit 18 will not adversely affect any identified archaeological, ethnographic, paleontological, or historical resources."

With regard to safety and reliability the CEC on pages 16-18 of the decision made the following findings:

"A. Geotechnical

"30. Seismic hazards at the Geysers Unit 18 site are adequately represented by Keith Feibusch Associates, Engineer's Report No. 01-3170-1067.

"31. There are no geologic constraints to the construction of the power plant and appurtenant facilities.

"B. Structural Engineering

"32. The design of Unit 18 for critical structures and components will be adequate to achieve performance criteria requiring that structures and components withstand a seismic event having a 10 percent probability of being exceeded during the plant design life using the combined sources response spectrum set forth in Keith Feibusch Associates, Engineer's Report No. 01-3170-1067, with minor damage and no structural collapse.

"33. The design of Unit 18 for structures and components not designated 'critical' will be adequate to achieve the Applicant's performance criteria.

"34. Although a final determination of compliance with applicable laws and standards cannot be made until after the preparation of final design plans and calculations which occurs after the AFC, the Applicant's design of Unit 18 will likely comply with applicable laws and standards with respect to structural engineering.

"C. Reliability

"35. Design and construction of the facility in accordance with applicable design criteria (see Structural Engineering) will ensure an availability factor of 90 percent or greater and a capacity factor of 80 percent or greater at plant maturity.

"D. Civil Engineering

"36. Applicant's engineering designs are in accordance with accepted engineering practices and comply with all applicable laws and standards.

"E. Safety

"37. Applicant will implement measures (see Appendix A) which will reduce the hazards due (a) to fire occurring at the plant site, (b) to the handling and storage of hazardous, toxic, and flammable materials, and (c) the exposure of workers to accidents and to high levels of H₂S gas.

"F. Solid Waste Management

"38. The Applicant will store, handle, and dispose of hazardous and non-hazardous solid wastes in compliance with applicable laws and standards."

The CEC findings regarding transmission line health, safety, and nuisance on page 19 of the decision are as follows:

- "41. The proposed transmission line will not pose a significant safety or health hazard or be a significant nuisance to the public.
- "42. The Applicant will comply with California Public Utilities Commission (CPUC) General Order 95 (GO-95) which sets forth minimal safety and reliability related construction standards.
- "43. The proposed transmission line will comply with all noise, fire protection, grounding, radio and navigation interference laws and standards."

On page 19 of the decision the CEC found as follows:

"B. Development Rights

- "45. The Applicant will construct and operate Unit 18 power plant and related facilities in a manner that will protect public health and safety, and therefore, does not require the applicant to acquire, by grant or contract, the right to prohibit development of privately owned lands in the areas surrounding the facilities in order to protect public health and safety, pursuant to Public Resources Code section 25528."

With respect to the Environmental Impact Report on pages 20 and 21 of the decision the CEC found as follows:

- "48. During the proceedings, changes or alternatives have been required in, or incorporated into, the proposed facility which mitigate or avoid the significant environmental effects of the facility identified in the Final Environmental Impact Report or the findings and conclusions set forth in the Decision. There are no specific economic, social, or other considerations which make infeasible the mitigation measures identified in the Final Environmental Impact Report or the findings and conclusions. The

project, by itself, will not result in significant adverse impacts if mitigated as provided herein.

- "49. The Final Environmental Impact Report is certified to have been prepared in compliance with the California Environmental Quality Act and all applicable state and Commission guidelines. The Final Environmental Impact Report has been considered in adopting this Decision."

Ordering Paragraph No. 1 on page 22 of the CEC decision reads as follows:

- "1. The Application for Certification for Pacific Gas and Electric Company's Geysers Unit 18 is granted, subject to the condition that the Company shall implement all mitigation and verification measures enumerated in this Decision, the stipulations in the record, Appendix A, and The Geysers Unit 18 Monitoring and Compliance Report. This Decision is effective upon filing with the Commission Secretary."

Thus, the CEC, in granting the AFC, has conclusively resolved the issues of electric load, sales, safety, reliability, and environmental impact which this Commission in the past has examined before granting a CPCN pursuant to Public Utilities Code Section 1001. Those issues as well as factors (a), (b), (c), and (d), cited above, will not be reconsidered by the Commission since the CEC has addressed those matters in granting a certificate pursuant to Division 15, Public Resources Code Section 25000, et seq.

Additional Support for Authorization

PG&E's operating experience with the existing units at The Geysers Power Plant has been and continues to be satisfactory. Union has proven geothermal steam reserves in the area of the proposed unit and has indemnification obligations to PG&E if there is insufficient steam to supply Unit 18.

The installation of Unit 18 will provide an additional economic source of baseload power for PG&E's system, will promote the conservation of petroleum fuels through utilization of geothermal steam, will be consistent with both state and federal energy policy, and will comply with the terms of the geothermal steam purchase agreement with Union.

The proposed project will 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 plant operates. The construction and operation of Unit 18 are required to meet projected area electric demands and energy requirements and to help decrease the dependence on oil. ✓

Findings of Fact

1. PG&E seeks for Unit 18 at The Geysers Power Plant, together with transmission lines and related facilities, a CPCN from the Commission under Section 1001 of the Public Utilities Code and General Order No. 131-B.

2. Unit 18 is proposed to have a net normal capability of 110 megawatts.

3. Transmission associated with Unit 18 would be 4,000 feet of 230 kV overhead conductor on lattice towers joining the existing 230 kV transmission line linking Units 9 and 10 with Castle Rock.

4. The CEC on May 7, 1980 approved PG&E's AFC for Unit 18.
5. PG&E has a contract to purchase geothermal steam developed by Union.
6. The CEC certified the final Environmental Impact Report on May 7, 1980.
7. The CEC, in granting PG&E's AFC for Unit 18, has addressed and conclusively resolved the issues of need, reliability, safety, and environmental impact.
8. The steam supply agreement between PG&E and Union is substantially similar to PG&E's agreements with its other steam suppliers in the Geysers area which have previously been held by the Commission to be reasonable, not to be anticompetitive or monopolistic in the relevant market, and not to foreclose opportunities for other parties to develop geothermal steam resources at the Geysers steam field and, therefore, the Unit 18 agreement is deemed appropriate.
9. PG&E has the ability to finance Geysers Unit 18 and the impact of it on the overall financial requirements is minimal.
10. Electric power proposed to be generated by Geysers Unit 18 would be at lower cost than other new baseload generation.
11. PG&E is responsible for obtaining all other legally required permits and approvals necessary for construction and operation of Unit 18.
12. Geysers Unit 18 will provide an additional economic source of baseload power for PG&E's system.
13. Geothermal generation is a preferred source of providing current generation needs.

14. Public convenience and necessity require the operation of a 110 megawatt geothermal electric generating facility at Geysers Unit 18 together with appurtenant transmission lines.

15. A public hearing is not necessary.

Conclusions of Law

1. PG&E's proposed Unit 18 at The Geysers Power Plant together with transmission lines and related facilities should be granted a CPCN under Section 1001 of the Public Utilities Code, subject to the conditions specified in the decision issued May 7, 1980 by the CEC in Docket No. 79-AFC-3 granting PG&E's AFC of Geysers Unit 18.

2. Because of the public need to place Geysers Unit 18 into operation as soon as possible, the effective date of this order should be the date of issuance.

O R D E R

IT IS ORDERED that:

1. A certificate of public convenience and necessity under Section 1001 of the Public Utilities Code is granted to Pacific Gas and Electric Company (PG&E) to construct and operate Unit 18 at The Geysers Power Plant together with transmission lines and related facilities as finally proposed by PG&E in this proceeding on the condition that the unit is constructed as described in PG&E's application to this Commission, and its Application for Certification (AFC) to the California Energy Resources Conservation and Development Commission (CEC), except where changes are required by competent authority and subject to the conditions specified in the decision issued May 7, 1980 by the CEC in Docket No. 79-AFC-3 granting PG&E's AFC of Geysers Unit 18.

2. PG&E shall file with this Commission a detailed statement of the capital cost of The Geysers Power Plant Unit 18, together with transmission lines and related facilities, within one year following the date Unit 18 is placed in commercial operation.

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

The effective date of this order is the date hereof.

Dated JUN 3 1980, at San Francisco, California.

John E. Bryson
President
Deborah L. Stevenson
Robert W. Howell

Lawrence J. Quinn
Commissioners

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