BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION
OF THE STATE OF CALIFORNIA

DOCKET
05-AFC-1
DATE NOV 15 2006
RECD. NOV 15 2006

IN THE MATTER OF:

APPLICATION FOR CERTIFICATION FOR THE
PASTORIA ENERGY FACILITY
160 MW EXPANSION
BY CALPINE CORPORATION

DOCKET NO. 05-AFC-1
[Data Adequate 7/13/05]

## ERRATA TO THE PRESIDING MEMBER'S PROPOSED DECISION

Based on comments submitted by the parties following publication of the Presiding Member's Proposed Decision (PMPD), we have incorporated the following errata and clarifications into the PMPD. These errata and clarifications do not change the substantive findings or conclusions contained in the PMPD.

# INTRODUCTION

### Page 9: revise last paragraph

After reviewing the evidentiary record, including stipulated testimony and exhibits, the Committee published the Presiding Member's Proposed Decision (PMPD) on June 8, 2006, and scheduled a Committee Conference on June 26, 2006, to discuss comments on the PMPD. The Conference was rescheduled and held on July 6, 2006. The 30-day comment period on the PMPD ended~~s~~ July 7, 2006. ~~The Commission hearing to consider the PMPD is scheduled at the business meeting on July 19, 2006~~. At the July 6, 2006, Committee Conference, Applicant requested a continuance of the certification process pending revision of the proposed air quality offset package. On October 18, 2006, the Committee issued an Order directing the parties to file status reports on the pending offset package. On October 20, 2006, Applicant filed a status report stating that the

offset package would not be changed and requesting that the PMPD be finalized. On _____, 2006, the Committee issued a list of errata based on the parties' comments on the PMPD. The Energy Commission considered the matter on _____, 2006, and adopted the PMPD including the list of errata, as the final decision certifying the PEFE.

## FACILITY DESIGN

**Page 46: 2nd paragraph, revise to read:**

The Energy Commission is the Chief Building Official (CBO) for energy facilities certified by the Commission. We may delegate CBO authority to local building officials, or to a third party engineering consultant, to carry out design review and construction inspections. When a CBO has been identified, duties are delegated to local authorities, the Commission requires a Memorandum of Understanding with the delegated CBO to assign the roles and responsibilities described in Conditions of Certification **GEN-1** through **GEN-8**. The Project Owner shall pay permit fees and other costs of reviews and inspections in accordance with CBSC requirements. (Ex. 100, p. 5.1-4.)"

**Page 47: replace 1st complete paragraph:**

Major structures, systems and equipment are defined as those structures and associated components or equipment that are necessary for power production and are costly or time consuming to repair or replace, that are used for the storage, containment, or handling of hazardous or toxic materials, or may become potential health and safety hazards if not constructed according to the applicable engineering LORS. (Ex. 1, Vol. I, §§ 3.0, 4.1.2.) Condition **GEN-2** lists the major structures and equipment included in the initial engineering design for the Project.

## POWER PLANT EFFICIENCY

**Page 72: Insert the following text after the 1st paragraph:**

Staff asserts that grid operators cannot rely on stored energy to maintain grid balance. Rather, grid operators require generating plants to provide power as demanded at any moment. Some plants are dispatched on advance schedules but other plants must be available to ramp-up instantaneously on short notice. Plants that are already on-line running at partial load can be controlled moment-by-moment via the grid controller's Automatic Generation Control, or AGC. Staff argues that simple cycle peaking plants are well-suited to this type of service. (Ex. 101, p. 3; Ex. 100, pp. 5.3-1 through 5.3-7).

According to Staff, the simple cycle PEFE is designed to provide the services expected from a peaker. Staff defines "peaker" as a generating unit that is operated to meet maximum (peak) demand or to fill emergency requirements. The PEFE offers operational flexibility, including short start-up and shutdown times and fast ramping capability, not available from less flexible combined cycle plants. (Ex. 100, p. 5.3-4). Combined cycle plants commonly require an hour or more to start up from a cold shutdown. Once running, they require hours or even days to shutdown. A combined cycle plant that is frequently cycled on and off exhibits a lower overall fuel efficiency rate than the optimum efficiency achieved when the unit is operating at or near full load. While the PEFE would operate (at full load) at fuel efficiency levels lower than a combined cycle plant at full load, the market for electrical energy would determine when the project operates. (*Ibid.*)

Staff asserts that fuel typically accounts for over two-thirds of the total operating costs of a fossil-fired power plant. (Ex. 100, p. 5.3-5.) To motivate energy suppliers to build and operate peakers, grid operators offer premium prices for the services these plants provide. When there is no need for peaking power, the

relative inefficiency of simple cycle peakers creates an inherent economic constraint. In Staff's view, however, if demand for energy should require constant and continuous peaking power availability, the market could support peaking operation at higher than historical capacity factors. Under such circumstances, Staff believes the immediate availability of peakers at the margin to meet a high level of demand would not be a wasteful use of fuel. (Ex. 101, Supplemental Testimony of Baker & Walters.)

Staff provided data to show how the market works to limit energy production from less efficient peaking plants. Staff's Table 1, below, compares the historical operational profiles of peakers with combined cycle plants. Table 1 lists all the non-cogeneration[1] simple cycle gas turbine peakers in California larger than 40 MW, and displays the capacity factors and equivalent operating hours these plants actually achieved in calendar year 2004. (Ex. 101, Supplemental Testimony of Baker & Walters, p. 2.)

**Staff's Table 1**
**Capacity Factors of California Peakers Over 40 MW (Non-Cogeneration)**
**Calendar Year 2004**

| **Facility Name** | **Generating Capacity (MW)** | **Capacity Factor (%)** | Equivalent Hours |
|---|---|---|---|
| Potrero Power | 156 | 3.5 | **306** |
| Grayson (City of Glendale) | 49.3 | 8.0 | **697** |
| Harbor (City of Los Angeles) | 282 | 14.5 | **1266** |
| Oakland Power Plant | 223.5 | 1.1 | **95** |
| Almond Power Plant (Turlock Irrigation District) | 49.5 | 12.7 | **1110** |
| Roseville (NCPA) | 50.4 | 0.25 | **22** |
| Lake (City of Burbank) | 70 | 7.3 | **636** |
| Pittsburg Power Plant | 74 | 31.9 | **2794** |
| Vaca Dixon No. 1 | 49.5 | 1.1 | **93** |
| Panoche No. 2 | 49.5 | 1.0 | **90** |
| Border | 49.5 | 2.2 | **194** |

[1] Cogeneration power plants are typically dispatched to satisfy cogeneration energy needs; the power is sold at whatever price is available. This is exhibited in high capacity factors for cogeneration plants, commonly ranging from 60 to 100 percent.

| Facility Name | Generating Capacity (MW) | Capacity Factor (%) | Equivalent Hours |
|---|---|---|---|
| El Cajon No. 6 | 48.7 | 4.1 | **360** |
| Enterprise No. 7 | 49 | 2.4 | **207** |
| Indigo Energy Facility | 149.7 | 5.8 | **505** |
| Larkspur Energy Facility | 99.8 | 4.3 | **373** |
| Creed Energy Center | 47 | 2.4 | **214** |
| Lambie Energy Center | 47 | 3.8 | **331** |
| Goose Haven Energy Center | 47 | 2.6 | **230** |
| Hanford Energy Park Peaker | 92.2 | 1.2 | **105** |
| Los Esteros C.E.F. | 180 | 17.1 | **1498** |
| Henrietta Peaker | 98 | 1.3 | **112** |
| Gilroy Peaker | 135 | 5.9 | **521** |
| King City Peaking | 47.3 | 4.9 | **433** |
| Yuba City Energy Center | 47.3 | 4.3 | **377** |
| Feather River Energy Center | 47 | 4.0 | **351** |
| Panoche Peaker | 49.9 | 0.5 | **41** |
| Gates Peaker | 46.5 | 1.8 | **155** |
| Tracy Peaker | 168.8 | 0.8 | **67** |
| Century Generating Facility | 44.8 | 1.2 | **104** |
| Drews Generating Facility | 44.8 | 1.3 | **114** |
| Agua Mansa Power Plant | 60.5 | 4.6 | **401** |
| Riverview Energy Center | 47 | 4.2 | **365** |
| Springs Generating Station (City of Riverside) | 40 | 0.4 | 37 |

Ex 101, Source: EIA Annual Electric Generator Report, 2004.

Table 1 shows that California's large peakers operated at low capacity factors in 2004. When occasional major disruptions occurred, an immediate production of peaking power was required to avoid widespread grid outages. Staff concedes that such disruptions are costly[2] Staff believes, however, that the availability of sufficient peaking power is necessary to prevent grid outages. (Ex. 101, p.3.)

**Page 72: Revise 2nd paragraph:**

Calpine opposes any restriction on its operating hours since limiting the ability of the PEFE to respond to demand would advance its economic competitors and

[2] A partial statewide outage on August 10, 1996, cost California more than a billion dollars in lost business. (EPRI Electricity Technology Roadmap, 1999 Summary and Synthesis, CI-112677-V1, July 1999, p. 21.) Staff notes that this figure would have been far larger had the outage not occurred on a Saturday. (Ex. 101, p. 3.)

result in the dispatch of less efficient generators with higher emissions per megawatt hour. (Ex. 21, p. 5.) According to Calpine, there are few times when the PEFE may be called upon to operate 8,760 hrs/yr, such as an energy crisis, a natural disaster, or an extended unplanned outage on a transmission system. To alleviate concerns about unrestricted operation, Calpine proposed a Condition of Certification that would have allowed the PEFE to operate without limit for two consecutive years. After two years of year-round operation, the Project Owner would have been required to ~~file an application to~~ convert the Project to a combined cycle facility. (*Id.* at p. 6.) ~~However, we believe two years of year-round operation exceeds the ability of the Commission to successfully monitor the efficient use of non-renewable fuel.~~

**Page 72: Add new text following the 2nd paragraph:**

The Commission previously addressed the issue of whether potential operation of a simple cycle facility at 8,760 hours per year would constitute a wasteful and inefficient use of energy. In our 2004 Decision on the Modesto Irrigation District Electric Generating Station (Ripon), we determined that actual energy production, rather than the number of operating hours is the key factor in fuel consumption. (Ripon Decision (P800-04-05) Docket No. 3-SPPE-1, at p. 18.) We imposed a condition in Ripon that requires conversion to combined cycle if the peaker operates at 760,000 MW hours/year for two years. Calpine's proposal for Condition **EFFIC-1** in this case was based on the Ripon limitation.

At the PMPD Conference, Calpine withdrew its proposed Condition **EFFIC-1** and Staff concurred. (7/6/06 RT, p. 21 et seq.; p. 39.) Counsel for Calpine argued that the Project could convert to a combined cycle facility in the future if the market requires additional baseload capacity but Project financing could be affected if the Energy Commission imposes a condition requiring conversion. (*Id.* at p. 26 et seq.) Both parties also requested that the Committee delete its version of Condition **EFFIC-1** from the PMPD, which would have required the Project Owner to provide quarterly reports on peaker operations and to convert to

combined cycle if peaker operations exceeded 75 percent capacity over two consecutive quarters. (*Id.* at p. 22.)

As we expressed in Ripon, the Commission is concerned about the future availability of natural gas and the efficient consumption of a non-renewable fuel. Staff's testimony confirms that the electricity market generally works to curtail full time peaker operation. Given that future electricity demand cannot be predicted with certainty, however, we believe that monitoring PEFE's peaker operation is consistent with our policy to ensure the efficient use of energy resources.

**Pages 72 and 73: Delete last two lines on Page 72 and revise 1st paragraph on Page 73:**

~~The evidence establishes that the Project's fuel consumption will not adversely affect existing natural gas supplies and that additional supply capacity over the life of the Project will not be needed.~~ According to Applicant, the PEFE is not expected to begin operation until 2011. ~~However, the record is speculative on the issue of whether unrestricted operation of PEFE would result in wasteful or inefficient fuel consumption due to the volatility of future gas supplies. According to Applicant, the PEFE is not expected to begin operation until 2011. The parties assert that economics will deter the PEFE from operating year-round but there is no method other than conditioning the Project to evaluate this assumption~~. Since we don't have a crystal ball to predict the energy market in 2011, we conclude that the Project Owner should maintain records of the Project's fuel use to evaluate the frequency of its peaking operations. ~~have adopted Condition of Certification **EFFIC-1**, below, to ensure the PEFE does not result in wasteful or inefficient fuel consumption~~.

**Page 73: add new text after 1st paragraph:**

Condition **AQ-56,** as required by the Air District, directs the Project Owner to keep records of the "hourly quantity of fuel used and gross three-hour operating

load" for the PEFE. Since this fuel use/energy production reporting requirement is incorporated into the Conditions of Certification, we have deleted both Calpine's and the Committee's versions of Condition **EFFIC-1** in this case.

**Page 73:** Delete Findings and Conclusions No. 5, and renumber accordingly.

**Page 74**: Delete Condition **EFFIC-1**.

## AIR QUALITY

**Pages 102, 103: Tables 2 and 3**

These two tables are outdated. The one-hour Federal ozone standard value shown on Table 2 (at page 102) should be deleted and replaced with "---", and the federal one hour ozone standard designation shown in Table 3 (at page 103) should be revised from "extreme nonattainment" to "no attainment status". The PMPD (at page 119) correctly describes the current federal ozone standard attainment status.

Additionally, the state 8-hour attainment status designation on Table 3 (at page 103) should be "not formally designated". Add a footnote to stating "this is a new ambient air quality standard and that formal attainment status designation has not yet been completed."

**Page 118: Revised Appendix A Redline/Strikeout Table**

Incorporate the non-redline/strikeout version of the Appendix A table as shown in Staff's AQ testimony instead of the redline/strikeout version currently shown. The inclusion of the redline/strikeout version of this table in the PMPD is confusing.

Additionally, the footnote "b." for this table was not shown as provided in Staff's Addendum to the FSA. The last sentence shown in footnote "a." should be separated as footnote "b.", and "Note:" should be corrected to "Note(s).

**Page 119: PM10 Interpollutant Offset Discussion**

Add the following underlined text to the third sentence of the first paragraph on this page:

> "Calpine subsequently revised its offset proposal to meet the USEPA recommended ratio <u>and this change is reflected in the amount of NOx ERCs shown in the Appendix A table</u>. (Exs. 5Y and 5Z.)"

This addition, along with the recommended change to the Appendix A table on page 118, clarifies the interpollutant offset requirements and the project's compliance with those requirements.

**Page 131: AQ-8**

In the third line of the verification of Condition **AQ-8** "five day" should be corrected to five day<u>s</u>". This corrects a typographical error that was in the FSA.

**Page 132: AQ-11**

Reference to "**AQ-6** to **AQ-17**" in the verification of Condition **AQ-11** should be revised to "**AQ-6** to **AQ-1<u>6</u>**". This corrects a typographical error that was in the FSA.

**Page 144 : Appendix A Table**

Footnote "b." for this table was not shown as provided in Staff's Addendum to the FSA. The last sentence shown in footnote "a." should be separated as footnote "b.", and "Note:" should be corrected to "Note(s).

**Page A-3: PMPD Appendix A (LORS)**

USEPA reviewed the PMPD and had one comment on the LORS section in **Appendix A** of the PMPD (not the AQ section Appendix A table). The USEPA's

comment addresses a sentence that did not provide the final status of the PM10 interpollutant offset calculation resolution between USEPA and the Air District. Elsewhere in the PMPD the interpollutant offset calculation resolution was described correctly. The last sentence of the first paragraph on page A-3 of Appendix A should be deleted and revised as follows:

~~The USEPA has not completed their review of this particular comment response; therefore, there is a potential that this offset ratio LORS interpretation issue may be continued by the USEPA.~~

"After further discussion between the USEPA and the District, the District revised the PM10 interpollutant offset ratio calculation methodology for this project to satisfy the USEPA and resolve this LORS interpretation issue."

## PUBLIC HEALTH

**Page 155: revise 2nd sentence, 1st full paragraph, as follows:**

The Condition requires the Project Owner to prepare and implement a Cooling Water Management Plan consistent with either Staff's "Cooling Water Management Program Guidelines" or the Cooling Technology Institute's (CTI's) recommendations to minimize the potential for bacterial growth in cooling water

**Page 155: add new paragraph before 2nd full paragraph and revise 1st sentence, 2nd full paragraph as follows:**

At the Committee Conference on the PMPD, the parties agreed to revise the language of Condition **PUBLIC HEALTH-1** to be consistent with Public Health conditions in current siting cases. We have incorporated that stipulated language in **PUBLIC HEALTH-I** for this case.

Both Staff's and the CTI's Guidelines~~Condition **PUBLIC HEALTH-1** specifically~~ require~~s~~ the Project Owner to implement a biocide and anti-biofilm agent monitoring program to ensure that: (1) proper levels of biocide and other agents are maintained in cooling tower water at all times; (2) periodic measurements of Legionella levels are conducted; and (3) periodic cleaning is performed to remove bio-film buildup.

**Page 158: replace Condition Public Health 1 with the following text as requested by the parties:**

**PUBLIC HEALTH-1** The Project Owner shall develop and implement a Cooling Water Management Plan to ensure that the potential for bacterial growth in cooling water is kept to a minimum. The Plan shall be consistent with either the Energy Commission Staff's "Cooling Water Management Program" guidelines or with the Cooling Technology Institute's "Best Practices for Control of Legionella" guidelines but, in either case, the Plan shall include sampling and testing for the presence of Legionella bacteria at least every six months. After two years of PEFE operations, the Project Owner may request the Compliance Project Manager (CPM) to re-evaluate and revise the Legionella bacteria testing requirement if good cause is shown.

**Verification:** At least 60 days prior to the commencement of cooling tower operations for the PEFE unit, the Cooling Water Management Plan shall be provided to the CPM for review and approval.

## WASTE

**Page 193: 2nd paragraph, under WASTE-5, add title as follows:**
**Verification:**

## CULTURAL RESOURCES

**Page 226: Last Sentence on the page**
We have adopted Conditions of Certification **CUL-1** through ~~**CUL-12**~~ **CUL-13**

**Page 228: Findings and Conclusions, #6.**

**6.** The Project Owner will implement a Cultural Resources Monitoring and Mitigation Plan (CRMMP) to protect known and unknown resources, including avoidance, physical demarcation and protection, worker education, archeological monitoring, Native American monitoring, authority of monitor to halt construction, and the filing of a cultural resources report~~, and significance review.~~ including significance conclusions and completed mitigation.

**Page 229: Findings and Conclusions, #7, revise to read:**

7. ~~The potential for cumulative impacts to cultural resources is insignificant.~~
There are no cumulative impacts to cultural resources.

**Conditions of Certification**

**Page 232 CUL-3**, A. Add the following sentence at the end of paragraph A. The previously approved research design for PEF shall be appended to the PEFE CRMMP.

## SOCIOECONOMICS

**Page 268: 3rd paragraph, lines 4 and 5, revise to read:**

Some workers will locate in Bakersfield, Delano and other areas of Kern County such as Arvin, Taft, Wasco, and possibly in Southern California."

**Page 269: 1st paragraph, lines 3 and 4, revise to match Exhibit 100, p. 4.8-7:**

The Project will generate first year property tax revenues of approximately $2.1 million per year.

**Page 269: 1st paragraph, revise last line to match Exhibit 100, p. 4.8-7:**

Total capital cost of the Project ~~including payroll~~ is estimated at $70 million.

**Page 270: 2nd paragraph, add from Exhibit 100, p. 4.8-2:**

Staff has reviewed the Census 2000 information that shows the minority population by census block is 65.15 percent which is greater than staff's threshold of greater than fifty percent within a six-mile radius of the proposed PEFE.

**Page 272: FINDINGS AND CONCLUSIONS, Number 7, revise for clarity to match Exhibit 100, p. 4.8-7:**

The PEFE will generate first year property tax revenues of approximately $2.1 million per year. The project life is a minimum of 30 years.

**Page 272: Number 9, delete the following to match Exhibit 100, p. 4.8-7:**

Total capital cost of the Project ~~including payroll~~ is estimated at $70 million.

**Page 272: Number 10, add the following to match Exhibit 100, p. 4.8-2, final paragraph text:**

The minority population of the local area is greater than fifty percent of the affected area's general population at 65.15%. The low income population is below the fifty percent threshold at 15.33%.

## COMMITTEE ORDER

The errata and clarifications listed above are hereby adopted by the Committee and incorporated into the PMPD for consideration by the full Commission.

By Order of the Committee.

Dated November 15, 2006, at Sacramento, California.

JAMES D. BOYD
Vice Chair and Presiding Member
Pastoria Energy Facility Expansion AFC Committee

**Proof of Service List (Revised on 11/15/06) filed with Original Document. Mailed from Sacramento on 11/15/06).**

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION
OF THE STATE OF CALIFORNIA

| IN THE MATTER OF: | DOCKET NO. 05-AFC-1 |
|---|---|
| APPLICATION FOR CERTIFICATION FOR THE PASTORIA ENERGY FACILITY (PEF) 160 MW EXPANSION BY CALPINE CORPORATION | PROOF OF SERVICE LIST [REVISED 11/15/06] |

**INSTRUCTIONS: All parties shall 1) send an original signed document plus 12 copies OR 2) mail one original signed copy AND e-mail the document to the web address below, AND 3) all parties shall also send a printed OR electronic copy of the documents that shall include a proof of service declaration to each of the individuals on the proof of service:**

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CALIFORNIA ENERGY COMMISSION
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* * * *

In addition to the documents sent to the Commission Docket Unit, also send individual copies of any documents to:

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## DECLARATION OF SERVICE

I, Maggie Read, declare that on November 15, 2006, I deposited copies of the attached *Errata to the Presiding Member's Proposed Decision*, in the United States mail at Sacramento, CA with first class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above. Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210.

I declare under penalty of perjury that the foregoing is true and correct.

*[signature]*