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DOCKET
09-AFC-3
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March 8, 2010

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Mr. Craig Hoffman
Project Manager
California Energy Commission
1516 Ninth Street, MS 15
Sacramento, CA 95814-5512

Subject: Mariposa Energy Project (09-AFC-03)
Rajesh Dighe Data Response Set 1, Responses to Rajesh Dighe Data Requests 1 through 4

Dear Mr. Hoffman:

Attached please find one hard copy and one electronic copy on CD-ROM of the Mariposa Energy Project's Rajesh Dighe Data Responses Set 1. This Data Response Set was prepared in response to Mr. Rajesh Dighe's Data Requests 1 through 4 for the Application of Certification for the Mariposa Energy Project (MEP) (09-AFC-03) dated February 8, 2010.

If you have any questions about this matter, please contact me at (916) 286-0348.

Sincerely,

CH2M HILL

Doug Urry
AFC Project Manager

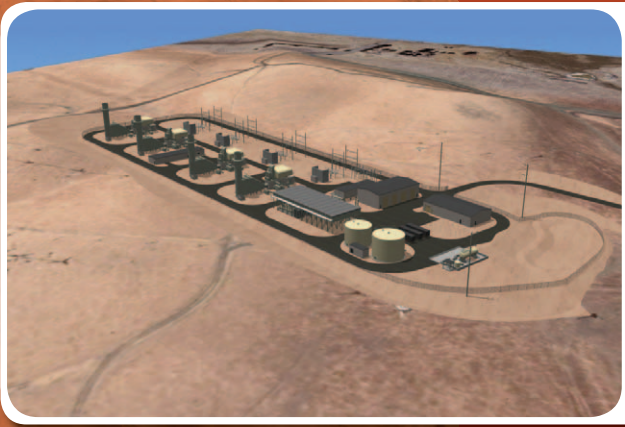
Attachment

cc: B. Buchynsky, Mariposa Energy, LLC.

APPLICATION FOR CERTIFICATION
RAJESH DIGHE DATA RESPONSES, SET 1
(RESPONSE TO DATA REQUESTS 1 TO 4)

SUBMITTED TO THE
California Energy Commission

FOR THE
Mariposa Energy Project



SUBMITTED BY

Mariposa Energy, LLC

TECHNICAL ASSISTANCE BY

CH2MHILL

MARCH 2010

EY012009005SAC

Mariposa Energy Project

(09-AFC-03)

Rajesh Dighe Data Responses, Set 1

(Response to Data Requests 1 to 4)

Submitted to

California Energy Commission

Submitted by

Mariposa Energy, LLC

With Assistance from

CH2MHILL
2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833

March 2010

Contents

Section Page

Table

Introduction

Attached are Mariposa Energy's responses to Mr. Rajesh Dighe's Data Request Set 1 (numbers 1 through 4) regarding the Mariposa Energy Project (MEP) (09-AFC-03) Application for Certification (AFC).

The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as Mr. Rajesh Dighe presented them and are keyed to the Data Request numbers (1 through 4). New or revised graphics or tables are numbered in reference to the Data Request number. For example, the first table used in response to Mr. Rajesh Dighe's Data Request 36 would be numbered Table RDDR 36-1. The first figure used in response to Mr. Rajesh Dighe's Data Request 42 would be Figure RDDR 42-1, and so on.

Additional tables, figures, or documents submitted in response to a data request (supporting data, stand-alone documents such as plans, folding graphics, etc.) are found at the end of each discipline-specific section and are not sequentially page-numbered consistently with the remainder of the document, though they may have their own internal page numbering system.

Alternatives (1–3)

Background

The proposed project site located at "Southeast of the intersection of Bruns Road and Kelso Road on a 10-acre portion of a 158-acre parcel (known as the Lee Property) immediately south of the Pacific Gas and Electric Company (PG&E) Bethany Compressor Station and 230-kilovolt (kV) Kelso Substation" **is only 2.5 miles to a fastly growing Mountain House Residential Community.**

In fact, all the alternative project sites mentioned in Section 6.3 are also very close to Mountain House Residential Homes.

Proposed site: MEP 3200 feet from nearest residence
Alternative site 1: Costanza 2500 feet from nearest residence
Alternative site 2: Gomes 2100 feet from nearest residence

In the Executive Summary, Section 1.1.1 Project Objectives Mariposa mentions:

"...peaking capacity is needed to respond to increases in the local demand for electricity that typically occur in the afternoons of summer days…As a peaking facility, MEP will not run continuously, but instead will start, run for as many hours as necessary, and then shut down…"

In the coming decade, California is going to push electric cars into the consumer market. As consumers and commercial charging stations start plugging in electric cars and other potential electric devices into the existing electric grids, the existing base power stations could start getting overloaded throughout the year (not just summer). This will cause MEP like gas-fired peaker plants to trigger many times more than as designed above and expected and at more frequents yearly rates, causing excessive pollution and health hazard to Mountain House residents.

Hence more analysis is needed by the applicant to understand the above and investigate other **remote locations further away from residential communities**.

Additionally, all the above sites are blessed with high winds and good sunshine and constructing a non-renewable energy plant and causing any extra pollution to surrounding residential neighborhood needs more justification.

Response to Background Comments:

In response to the background information provided above, the closest residences indicated in Section 6.3 and referenced above are residences in an unincorporated portion of Alameda County and are not residences within the Mountain House Community Services District (CSD). The closest Mountain House CSD residences are at least 2.3 miles (12,140 feet) away from the Mariposa Energy Project. The distances listed above from the alternative sites are distances to the nearest residences in unincorporated Alameda County and not to residences

in Mountain House CSD. The distance from Alternative Site 1 – Costanzo to the nearest Mountain House CSD resident would be approximately 2.65 miles or 13,990 feet and from Alternative Site 2 – Gomes the distance to the nearest Mountain House CSD residence would be approximately 2.15 miles or 11,350 feet. As seen in AFC Figure 5.13-6, Key Observation Point 5, only the tops of Mariposa Energy Project structures are visible and the main item in the view is the Modesto Irrigation District electrical substation in Alameda County that provides power to the Mountain House CSD. Therefore, none of the sites are closer than 2.15 miles, 11,350 feet from the Mountain House CSD.

The California State Energy Plan envisions renewable energy providing the additional generation to meet electrical loads generated by an increase in electric cars and other electrification of transportation. Existing base-loaded power plants would also supply these needs as would new base-loaded facilities that still need to be permitted and built. The Mariposa Energy Project is not designed or permitted as a base-loaded facility and therefore would only meet grid demands on an intermittent basis, until other base-load resources are dispatched to meet the longer-term supply requirements. The Mariposa Energy Project is located on an abandoned wind energy site from which wind mills were removed because the wind resource in the specific location could not support the economic operation of a wind energy facility; therefore, it is highly unlikely that a new wind energy facility would be located at the site of a previously bankrupted facility.

Data Request

RDDR1 Please provide details of other researched location sites by the applicant which are sufficiently away (like 50-60 miles away) from residential homes. Comparing the proposed site with a site further away from residential homes would help California Energy Commission (CEC) and other party members.

Response:

The applicant did not specifically research any sites 50 to 60 miles away from residences. There are very few, if any, power plants in California that are located at such a great distance from any residence. In fact, the Diablo Canyon Nuclear Plant is only 6 to 7 miles from the communities of Avila Beach and Baywood-Los Osos, while the San Onofre Nuclear Plant is 1.5 miles from residences and 3 miles from the city of San Clemente. Large generating stations such as Morro Bay, Moss Landing, Alamitos, and El Segundo are all within 1.0 mile of residences.

The Modesto Irrigation District, which provides electricity to the Mountain House Community Services District, owns the natural-gas-fueled electric generating facilities, Woodland I & II, Ripon, and McClure, which are all within 1.0 mile of residences. Please see Table RDDR1-1 for the distances from these generating stations to the closest residences. Note that this table provides just a few examples of various types of power plants, but is by no means comprehensive. Numerous base-load and peaking power plants are located within 2.3 miles of residences in California.

We disagree that siting a power plant 50 to 60 miles from any residential community would be helpful to California. Siting at such extremely remote locations will increase the environmental and economic costs of power plants by requiring extremely long transmission lines, gas lines,

water lines and access roads all of which have both temporary and permanent environmental consequences. Plants with extremely long transmission lines increase electrical line losses, providing less useable energy, and decrease reliability, since power lines are exposed to possible damage from winds and fires. Also, remote generation cannot provide the local frequency, voltage, and VAR support required to maintain a stable grid. Such a remote electric generating facility would not meet the requirements of the California System Operator, the California Public Utilities Commission, and Pacific Gas and Electric Company (PG&E) for generation located in the San Francisco Load Pocket that is able to quickly reinforce the integration or intermediate renewable generation like wind and solar. Therefore, the siting of a power plant at 50 to 60 miles from any residential community was not considered or evaluated because it did not meet the criteria established by the California Public Utilities Commission and PG&E for the Request for Proposals that was issued.

TABLE RDDR1-1
Generating Stations Near Residences

Generating Station	Distance to Nearest Residence	Description	Reference
Diablo Canyon Power Plant (Nuclear)	7 miles	2,160 MW Nuclear Plant	Google Earth
San Onofre Nuclear Generating Station	1.5 miles	2,150 MW Nuclear Plant	Google Earth
Morro Bay Power Plant	Approximately 900 feet	1,200 MW base load	FSA Part 1, Public Health, page 3.4-3 (Nov. 2001)
Moss Landing Power Plant	1,700 feet	2,560 MW base load	FSA Part 1, Public Health, page 21 (May 2000)
El Segundo Power Plant	Within 1 mile	630 MW base load	AFC, Land Use, page 5.9-5 (Jan. 2001)
Alamitos Generating Station (Long Beach)	Approximately 750 feet	1,970 MW base load	Google Earth
Grayson Power Plant (Glendale)	Approximately 700 feet	287 MW base load	Google Earth
Magnolia Power Plant (Burbank)	Approximately 600 feet	250 MW base load 328 MW peaking capacity	FSA, Public Health, page 4.7-6 (Oct. 2002)
Modesto Irrigation District Woodland I and II Generation Stations	Slightly more than ¼ mile	132 MW peaker	Commission Decision for Woodland Generation Station 2, Public Health, page 13-2 (Sept. 2001)
Modesto Irrigation District Electric Generation Station Ripon	Approximately ½ mile	95 MW peaker	Final Initial Study, Land Use, page 10-4 (Aug. 2003)
Modesto Irrigation District McClure	0.7 miles	112 MW peaker	Google Earth
Broadway Power Plant (Pasadena)	Approximately 200 feet	75 MW base load	Google Earth

Data Request

RDDR2 As explained above, isn't it a high risk to construct a peaker plant too close to Mountain House residential community because of its susceptibility to be running more often in the year and hence increasing the pollution for Mountain House community? Applicant is hereby kindly requested to explain in detail why they would prefer the current discussed project site as oppose to other remote location sites further away from residential communities?

Response:

The siting of MEP at its proposed location poses no significant unmitigated public health hazard to residents of the Mountain House CSD development or the local residences in Alameda County (please see Chapter 5.9 of the Application for Certification). The predicted impacts are well below the BAAQMD facility-wide significance thresholds of 1.0 for chronic and acute indices and the excess cancer risk of 1 in one million, that is, predicted exposures below the BAAQMD significance thresholds are not expected to result in adverse health effects over a lifetime of exposure[1]. The predicted impacts below this threshold are deemed to be less than significant, and therefore the predicted impacts from the proposed project will be less than significant. Therefore, MEP poses no significant public health risk to the Mountain House community in its proposed location.

Additionally, the proximity of MEP to Mountain House CSD has little impact on the projected operating hours. Electrical grid requirements, as determined by PG&E and the California Independent System Operator, will decide when and at what levels MEP is dispatched to operate. MEP's total hours of operation are limited by both the BAAQMD permit and the PG&E contract. Therefore, MEP cannot operate more than 4,000 hours per year, when dispatched by PG&E. Specifically, Mountain House CSD obtains electrical service from the Modesto Irrigation District (MID) through its interconnection with the Western Area Power Administration – Tracy Substation and the MID Mountain House substation located in Alameda County, on the south side of Kelso Road. Based on the Mountain House CSD connection to MID, increased use of power by Mountain House would only indirectly affect the operations of MEP, since MID would run its power plants to meet Mountain House needs before accessing power from the California grid.

Also, as indicated in the response to RDDR1, a more remote location would not provide reinforcement to the San Francisco Load Pocket and would not provide a proximate resource for balancing Altamont Pass and Montezuma wind resources. More remote locations would also potentially require significant project laterals to access the electric grid, fuel supply pipelines, and transportation infrastructure, thereby increasing the environmental impacts.

If California electricity demand significantly increases due to a shift toward electric vehicles, or for other reasons, that power demand would be met by the development of intermediate and base-load facilities designed to cost-effectively meet increased demand. MEP would not be a cost-effective option for meeting base-load demand.

[1] http://www.epa.gov/ttn/atw/nata1999/gloss.html

MEP will be licensed for a maximum annual operating schedule of 4,000 hours per year plus 300 start and stop cycles. While this is significantly more operating hours than the expected scenario (600 hours per year and 200 start and stop cycles is typical for California peaking plants), all of the analyses in the AFC were based on this maximum permitted scenario. Based on 2003 operational data compiled by CEC for peaker facilities greater than 50 MW, none of the 19 facilities operated more than 2,800 hours per year, and only four exceeded 1,000 hours (CEC, 2006). The average operating schedule for these large peaking facilities was 538 hours annually. Regardless of the potential for increased demand in California, or how that increased demand will be met, MEP will not pose a significant public health risk even if it were to operate at the maximum-permitted operating schedule of 4,000 hours per year with 300 start and stop cycles.

Background:

In Section 6.6.2 - Fuel Technology Alternatives states:

> *"Solar and wind technologies are generally not dispatchable and, therefore, are not capable of providing fast-starting, flexible generating capacity and are not capable of producing ancillary services other than reactive power."*

During peak summer days, Government's push towards Photo Voltaic (PV) panels on rooftops of residential and businesses will bring down the load on the gas-fired base power plants (http://www.gosolarcalifornia.ca.gov/). Also in the coming decades, California has planned aggressively towards increasing the California's Renewable Portfolio Standard (RPS) to 33 percent by 2020.

Essentially, the reduced loads on the existing gas-fired base plants because of spreading PV panels on rooftops will save lots of MW of energy which can be potentially be consumed in hot nights.

The continuing research in the area of **battery technology** to drive efficient home **Air Conditioning** units using inverters and alternators will continue to be the focus as we go green.

Putting "dispatchable energy" as part MEP requirement causes "renewable" energy solutions to be discarded very early in the process. This doesn't seem correct.

The application requirement should emphasize on ***"Solving the peak power needs of PG&E in summer"*** with **all possible alternatives (renewable and/or non-renewable solutions locally and remotely and in combination with overall California state's total renewable energy solution targets)**.

PV alternative takes the solution close to the problem location (consumers –both residential and commercial cause the peak load in summer). Hence is interesting to investigate.

Response to Background Comments:

The increased availability of renewable energy will decrease the operating hours of some base-load resources like combined-cycle natural gas plants; however, since dispatchable simple-cycle natural gas plants only operate to meet certain electrical grid requirements their operations are not as affected by the addition of renewable energy added to the electrical grid. As indicated in California Energy Commission studies (Intermittency Analysis Project Team, 2007), in order to significantly expand the addition of renewable generation and maintain stable electrical grid operations, additional highly flexible, dispatchable resources also need to be added to the electrical grid.

Data Request

RDDR3 Please provide technology alternatives using solar photo voltaic (PV) panels. Answers to below questions are requested:

1. How many homes on average need to be installed with PV panels to bring down the load on the current gas-fired power plant by 200 MW, which is the current proposed MEP power plant's requirement?

2. In summer days, PV panels will help save existing gas-fired plants power consumption. Hence why can't this saved power from the existing gas-fired power plants be used for summer evening and night peak loads caused by switching on AC units by consumers, instead of creating another "pollution monster" around the Mountain House residential community?

Response:

Please see Section 6.6.2 of the Application for Certification. As explained in Section 6.6.2, technologies based on fuels other than natural gas were eliminated from consideration because they do not meet the project objective of providing operationally flexible, dispatchable, quick start, and reliable power. No matter how many PV panels are installed, they will not bring down the load on a heavily overcast day, the very time when MEP may be needed to be dispatched, nor can they be dispatched to meet specific grid requirements for voltage and frequency control when other intermittent resources such as wind energy increase or decrease production. As additional renewable energy displaces other base-load generation resources, then those base-load resources will operate fewer hours per year. As a highly flexible, dispatchable, quick start, generating facility, MEP would only operate when the electrical grid required its energy and capacity to maintain proper grid operations. If there is no need for MEP to operate, then PG&E will not dispatch the MEP facility to operate.

Worker Health & Safety (4)

Background

The applicant has sections in the application detailing Land, Air Quality, Biological and Cultural Resources, Geological Resources and Hazards, Noise effects.

God forbidden, if a catastrophic scenario- like an explosion at the Applicant's site occurs, it is unclear from the application about the effects to the close Mountain House residential community. This is a concerning point since Mountain House is only 2.5 miles away from the proposed site.

The recent Feb 7, 2010 explosion of the gas-fired Kleen Energy LLC plant at Middletown, Connecticut caused a huge distress and earthquake like shakes even 10 miles away.

Data Request

RDDR4 Applicant is requested to provide details and facts about the potential dangers to Mountain House residents under such catastrophic explosion and why the applicant still thinks of constructing a power plant at 3200 feet of an upcoming new residential Mountain House community?

Response:

First, please see Sections 4.0 (Natural Gas), 5.5 (Hazardous Materials), and 5.16 (Worker Safety) of the Application for Certification where the Applicant has provided detailed information regarding the potential risks of constructing and operating MEP and the exhaustive measures that will be taken to reduce, if not eliminate, such risks.

Second, it is not correct that MEP is 3,200 feet from the Mountain House community. The MEP facility is 3,200 feet from the nearest residence, which is not the Mountain House "New Town" or Mountain House Community Services District, which has been referred to in all of Applicant's CEC filings as "the Mountain House community", but rather the closest of a few residences near MEP in Alameda County. The Mountain House CSD community in San Joaquin County is 2.3 miles away at its closest point.

Third, even at 3,200 feet, MEP poses no risk to the nearest residence, even in the event of the most catastrophic occurrence. The results of the offsite consequence analysis for the worst-case release scenario of aqueous ammonia at MEP indicate that airborne ammonia concentrations would be below hazardous levels beyond the fenceline and no significant offsite impacts associated with a failure of the ammonia tank would occur (AFC, p. 5.6.2.4).

Based on news accounts, the recent industrial accident at the Kleen Energy LLC plant in Middletown, Connecticut apparently was caused during a planned release of natural gas while commissioning the natural gas supply system. No official Chemical Safety Board report on the incident is currently available. As reported by a representative of the

U.S. Chemical Safety Board, "Donald Holmstrom, lead investigator of the U.S. Chemical Safety Board, said that the gas was released into a congested area next to the power block building, and that the congested area likely slowed the dispersion of the gas and was ignited by an undetermined ignition source."[2] The standard practice is to vent flammable gases away from any enclosed areas, and prohibit potential ignition sources from operating in the area. Mariposa Energy will follow protocols established by the U.S. Chemical Safety and Hazard Investigation Board to ensure worker safety and the public are protected during this process. The MEP site will not include congested areas similar to the Kleen Energy facility, regardless, no flammable gas venting will be performed near enclosed or congested areas. Only workers and safety personnel directly involved in the purging operation will be onsite during this operation; no other work activities will be allowed, and all potential ignition sources will be prohibited. This one-time operation will be planned and managed with a focus on safety.

References

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California Energy Commission (CEC). 2003. Final Initial Study, Small Power Plant Exemption for the Modesto Irrigation District Electric Generation Station Ripon (03-SPPE-1). August 22.

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El Segundo Power II LLC. 2001. Application for Certification for the El Segundo Power Redevelopment Project (00-AFC-14). January 9.

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Intermittency Analysis Project Team. 2007. PIER Project Final Report. July.

[2] The Hartford Courant, February 25, 2010.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
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1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE *MARIPOSA ENERGY PROJECT* (MEP)

Docket No. 09-AFC-3

PROOF OF SERVICE
(Revised 2/8/2010)

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DECLARATION OF SERVICE

I, Stephanie Moore, declare that on March 8, 2010, I served and filed copies of the attached Mariposa Energy Project Rajesh Dighe Data Responses, Set 1. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[http://www.energy.ca.gov/sitingcases/mariposa/index.html].
The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

For service to all other parties:

_x_ sent electronically to all email addresses on the Proof of Service list;

___ by personal delivery or by depositing in the United States mail at Sacramento, California, with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

For filing with the Energy Commission:

_x_ **sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);**

OR

_____depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 09-AFC-3
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

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

_Original signed by:_____
Stephanie Moore