

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

DOCKET**11-AFC-3**DATE MAY 14 2012RECD. MAY 14 2012

May 14, 2012

Quail Brush Genco, LLC
Ms. Lori Ziebart
Project Manager
9405 Arrowpoint Boulevard
Charlotte, NC 28273

Regarding: **QUAIL BRUSH GENERATION PROJECT (11-AFC-3), Staff's Data Requests, 71 through 74**

Dear Ms. Ziebart,

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission staff requests the information specified in the enclosed data requests. The information requested is necessary to: 1) more fully understand the project, 2) assess whether the facility will be constructed and operated in compliance with applicable regulations, 3) assess whether the project will result in significant environmental impacts, 4) assess whether the facilities will be constructed and operated in a safe, efficient and reliable manner, and 5) assess potential mitigation measures.

These data requests, numbered 71 through 74, are being made in the technical areas of Air Quality, and Worker Safety and Fire Protection. Written responses to the enclosed data requests are due to the Energy Commission staff on or before June 13, 2012.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send a written notice to the Committee and me within 20 days of receipt of this notice. The notification must contain the reasons for the inability to provide the information or the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)).

If you have any questions regarding the enclosed data requests, please call me at (916) 651-0966.

Sincerely,

Eric Solorio
Siting Project Manager

Enclosure (Data Request Packet)
cc: Docket (11-AFC-3)

PROOF OF SERVICE (REVISED 5/9/12) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 5/14/12
DLS

QUAIL BRUSH GENERATION PROJECT
(11-AFC-3)

Energy Commission Staff's Data Requests 71-74

May 14, 2012

Technical Area: Air Quality

Author: Joseph Hughes

NO₂/NO_x Ratio BACKGROUND

Because the modeling for NO₂ impacts is based upon NO_x (NO plus NO₂) to NO₂ conversion in the atmosphere, and the approach that was used by the applicant is the ozone limiting method, it is important to use a justified stack exit point NO₂/NO_x ratio for modeling compliance with both the federal and state 1-hour NO₂ standards.

In the first round of air quality data requests, staff expressed concern that the 1.15 percent NO₂/NO_x ratio chosen from the CAPCOA guidance document to model compliance with the federal and state 1-hour NO₂ ambient air quality standards (AAQS) may not be representative of the 12,874 horse power (hp) Wartsila engines that would be utilized at the QBGP. Staff asked if any source testing was available for the Wartsila engine that would support the use of the 1.15 percent NO₂/NO_x ratio used to evaluate the project's NO₂ impacts and the applicant responded that they were not aware of any such source test data pertinent to establishing such a ratio.

The applicant responded: *"The above noted CAPCOA guidance lists the recommended NO₂/NO_x ratios for all of the natural gas fired IC engines (non-compressor duty) from 120 to 4,175 bhp as being the "statistical average of all data points". For the large engine listing (i.e., 4,175 bhp), the range of values as noted is 0.0 – 21.28%, with a statistical average of 1.15%."* However, it is still unclear how this statistical average applies to the proposed QBGP Wartsila engine that is more than three times larger than the largest engine in the group used to determine the statistical average. Furthermore, the applicant did not justify using the average value and not the range. The applicant also reviewed a number of technical research papers on the topic of NO₂/NO_x ratios and provided general comments in the data response. These general comments address a wide range of engine technologies and engine sizes, so staff again questions the representativeness of the 1.15 percent NO₂/NO_x ratio to the proposed QBGP engines. The technical research papers did not validate the use of a 1.15 percent NO₂/NO_x ratio.

The applicant points out that the proposed QBGP power cycle engines would be equipped with both SCR and CO/VOC oxidation catalysts, and as such, the applicant's modeling staff believes that a NO₂/NO_x ratio of 1.15 percent is a reasonable and justifiable value for the NO₂ compliance modeling analysis. However, the applicant did not provide supporting documentation that the value used represents combustion and stack exhaust conditions for the engines proposed to be used for this project. The data response also states that temperatures are critical, but did not address the degree to which the temperatures in the engines tested match-or don't match—the expected in-cylinder temperatures where NO_x is formed, nor how the in-cylinder ratio relates to the exhaust NO₂/NO_x ratio.

Furthermore, the same 1.15 ratio was also used in modeling commissioning and startup scenarios when post combustion equipment (i.e. SCR and CO/VOC oxidation catalyst)

would not be operating or would be operating at reduced removal efficiencies. There was no justification for using the same ratio for these other operating conditions, even though the data response indicated that the final NO₂/NO_x ratio depends on, or changes with, the use of exhaust after treatment equipment.

DATA REQUEST

71. Please perform source testing for nitrogen dioxide and nitric oxide on an existing Wartsila 20V34G-C2 engine (or a very similar model) to provide verification of the appropriate NO₂/NO_x ratio, or range of ratios for expected operating conditions and scenarios. The testing should be conducted on an engine with the same or similar combustion conditions and emission controls as that proposed for this project.
72. Please provide NO₂/NO_x ratios during the times post combustion equipment are not operating or operating at reduced removal efficiencies, such as startup, shutdown, tuning, and commissioning.
73. Please remodel 1-hour NO₂ AAQS using the appropriate NO₂/NO_x ratios for each operating scenario, including startup (for federal and state 1-hour NO₂ standard and commissioning (for state 1-hour NO₂ standard). For partial-hour operation, such as startup, hourly values should be computed from partial-hour operation in startup mode with the remainder of the hour modeled as operating mode.

Technical Area: Worker Safety and Fire Protection

Author: Rick Tyler

Background

The Quail Brush Generating Project will be located in an area with extreme risk of wildfires. A wildfire in the vicinity of the project could require a temporary evacuation of the facility. The project site is also in an area with limited access. Before an evacuation, the facility will need to be left in a state where hazardous and combustible materials are rendered safe during the fire event. It may also be necessary for City of San Diego Fire-Rescue Department (SDFRD) to be involved in such evacuation.

Data Request

74. Please provide a plan to address safe temporary evacuation of the facility in the event of a wildfire in the vicinity of the facility. The plan should address safe evacuation of personnel and safe shutdown of equipment where hazardous or combustible materials are present such that a wildfire would not result in any release of such materials.



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

**APPLICATION FOR CERTIFICATION
FOR THE *QUAIL BRUSH GENERATION PROJECT***

DOCKET NO. 11-AFC-03
PROOF OF SERVICE
(Revised 5/9/2012)

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DECLARATION OF SERVICE

I, Diane Scott, declare that on May 14, 2012, I served and filed a copy of the **Quail Brush Generation Project (11-AFC-03), Staff's Data Requests 71 through 74**, dated May 14, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at:

<http://www.energy.ca.gov/sitingcases/quailbrush/index.html>.

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(Check all that Apply)

For service to all other parties:

- Served electronically to all e-mail addresses on the Proof of Service list;
- Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "e-mail preferred."

AND

For filing with the Docket Unit at the Energy Commission:

- by sending an electronic copy to the e-mail address below (preferred method); **OR**
- by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT
Attn: Docket No. 11-AFC-3
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.ca.gov

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

- Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission
Michael J. Levy, Chief Counsel
1516 Ninth Street MS-14
Sacramento, CA 95814
michael.levy@energy.ca.gov

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Original Signed By:
Diane Scott
Siting, Transmission and Environmental Protection Division