

DOCKETED

Docket Number:	99-AFC-08C
Project Title:	Blythe Energy Project Compliance & Blythe Transmission Line Modification
TN #:	211858
Document Title:	Order Approving Petition to Reduce PM10 and SOx Emissions
Description:	N/A
Filer:	Cody Goldthrite
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	6/17/2016 9:50:48 AM
Docketed Date:	6/17/2016

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

In the Matter of:)
BLYTHE ENERGY PROJECT) Docket No. 99-AFC-08C
)
)
)
BLYTHE ENERGY, LLC) ORDER APPROVING Petition to Reduce
) PM10 and SOx Emissions

On **August 18, 2015**, Blythe Energy, Inc filed a petition to amend with the California Energy Commission requesting to modify the Blythe Energy Project Final Decision, as amended. The modifications include reducing hourly and annual particulate matter less than 10 microns (PM10) mass emission limits, reducing the annual natural gas fuel sulfur content limit, and reducing the annual oxides of sulfur or SOx mass emission limit.

Blythe Energy requested these changes because the hourly and annual PM10 emission limits in the original BEP license were based on emission limit guarantees provided by the turbine manufacturer, Siemens, that were overly conservative. Blythe Energy now has sufficient operating experience and test data to propose the new, lower PM10 limits. Additionally, since the BEP was licensed, a lower maximum annual average natural gas fuel sulfur content has been permitted at other facilities under the Energy Commission's jurisdiction, including the adjacent proposed Sonoran Energy Project (SEP) that has been approved for construction (licensed as Blythe Energy Project Phase II). As BEP's annual SOx emission limit is based on a higher annual average natural gas fuel sulfur content, SOx emission limits are overestimated and conservative. The proposed reductions in permitted annual PM10 mass emissions will be used as simultaneous emissions reductions at SEP.

The changes proposed by this petition would modify existing Air Quality Conditions of Certification **AQ-T2, AQ-T4, AQ-T6, AQ-T7**, and add Condition of Certification **AQ-T7a** to make them consistent with the proposed changes to the District permits. However, the proposed amendment would not result in any environmental impacts or inconsistency with any LORS.

STAFF RECOMMENDATION

Energy Commission staff reviewed the petition, finds that it complies with the requirements of Title 20, section 1769 (a) of the California Code of Regulations, and recommends approval of Blythe Energy, Inc's petition to modify the Blythe Energy Project and amend related Air Quality Conditions of Certification.

ENERGY COMMISSION FINDINGS

Based on staff's analysis, the Energy Commission concludes that the proposed modifications will not result in any significant impacts to public health and safety, or to the environment. The Energy Commission finds that:

- The petition meets all the filing criteria of Title 20, section 1769 (a), of the California Code of Regulations, concerning post-certification project modifications;
- The modification will not change the findings in the Energy Commission's Final Decision, pursuant to Title 20, section 1755, of the California Code of Regulations;
- The project will remain in compliance with all applicable laws, ordinances, regulations, and standards, subject to the provisions of Public Resources Code, section 25525;
- The modification will be beneficial to the public and the project owner since it will ensure that the facility maintains its emissions at levels below the limits in the original license, thereby keeping air quality impacts below those analyzed in the original licensing proceeding; and
- There has been a substantial change in circumstances since the Energy Commission certification, justifying the modifications, and the modifications are based on information that was not available to the parties prior to Energy Commission certification in that the emission limits in the BEP license were based on conservative emission limit guarantees provided by the turbine manufacturer, Siemens.

CONCLUSION AND ORDER

The California Energy Commission hereby adopts staff's recommendations and approves the changes to the Commission Decision for the Blythe Energy Project (see attached conditions of certification). New language is shown as **bold and underlined**, and deleted language is shown in ~~strikethrough~~.

District Preliminary Determination on Title V Federal Operating Permit Significant Modification

AQ-T2 The turbines shall be exclusively fueled with pipeline quality natural gas with a sulfur content not exceeding 0.5 grains per 100 dscf **on a twenty-four hour basis and not exceeding 0.25 grains per 100 dscf** on a rolling twelve month average basis. The turbines shall be operated and maintained in strict

accord with the recommendations of its manufacturer or supplier and/or sound engineering principles.

Verification: The project owner shall incorporate into the Quarterly Operations Report either a monthly laboratory analysis showing the fuel sulfur content, a monthly fuel sulfur content report from the fuel supplier(s), or the results from a custom fuel monitoring schedule approved by U.S. EPA for compliance with the fuel monitoring provisions of 40 CFR 60 Subpart GG.

- AQ-T4** Emissions from the turbines (including the associated duct burners) shall not exceed the following emission limits at any firing rate, except for CO, NO_x and VOC during periods of startup, shutdown and malfunction:
- a. Hourly rate, computed every 15 minutes, verified by CEMS and annual compliance tests:
 - i. NO_x as NO₂ — the most stringent of 19.80 lb/hr or 2.5 ppmvd corrected to 15% O₂ and averaged over one hour}.
 - ii. NO_x as NO₂ — effective May 7, 2016, 2.0 ppmvd corrected to 15% O₂ and averaged over a rolling 12 month period.
 - iii. CO — the most stringent of 17.5 lb/hr or 4.0 ppmvd corrected to 15% O₂ and averaged over 3 hours.
 - iv. CO – 10 lb/hr averaged over a rolling 12-month period
 - b. Hourly rates, verified by annual compliance tests or other compliance methods in the case of SO_x:
 - i. VOC as CH₄ — 2.9 lb/hr (based on 1 ppmvd corrected to 15% O₂).
 - ii. SO_x as SO₂ — 2.7 lb/hr (based on 0.5 grains/100 dscf fuel sulfur).
 - iii. PM10 — ~~41.5~~6.2 lb/hr.

Verification: The project owner shall submit the following in each Quarterly Operations Report: All continuous emissions data reduced and reported in accordance with the District approved CEMS protocol; a list of maximum hourly, maximum daily, monthly, total quarterly, total calendar year, and rolling 12-month emissions of NO_x, CO, PM10, VOC and SO_x (including calculation protocol); total monthly and rolling 12-month fuel use in the gas turbines and duct burners; average NO₂ concentration and average CO mass emission rate, for all operating periods except during startup, shutdown and malfunction, for each gas turbine and associated duct burner, calculated on a rolling 12-month basis; a log of all excess emissions, including the information regarding malfunctions/breakdowns required by District Rule 430; operating parameters of emission control equipment, including but not limited to ammonia injection rate, NO_x emission rate and ammonia slip; any maintenance to any air pollutant control system (recorded on an as-performed basis); and any permanent changes made in the plant process or production that could affect air pollutant emissions, and when the changes were made.

AQ-T6 ~~Emissions~~ **Aggregate emissions** from the turbines, including the duct burners, shall not exceed the following emission limits, based on a calendar day summary:

- a. NO_x — 5762 lb/day, verified by CEMS.
- b. CO — 8004 lb/day, verified by CEMS.
- c. VOC as CH₄ — 239 lb/day, verified by compliance tests and hours of operation in steady-state, pre-mix_mode.
- d. SO_x as SO₂ — 130 lb/day, verified by fuel sulfur content and fuel use data.
- e. PM₁₀ — ~~565~~**298.5** lb/day, verified by compliance tests and hours of operation.

Verification: The project owner shall submit the following in each Quarterly Operations Report: All continuous emissions data reduced and reported in accordance with the District approved CEMS protocol; a list of maximum hourly, maximum daily, total quarterly, and total calendar year emissions of NO_x, CO, PM₁₀, VOC and SO_x (including calculation protocol); a log of all excess emissions, including the information regarding malfunctions/breakdowns required by District Rule 430; operating parameters of emission control equipment, including but not limited to ammonia injection rate, NO_x emission rate and ammonia slip; any maintenance to any air pollutant control system (recorded on an as-performed basis); and any permanent changes made in the plant process or production that could affect air pollutant emissions, and when the changes were made.

AQ-T7 Emissions from all units at this facility, including the cooling towers, shall not exceed the following emission limits, based on a rolling 12 month summary:

- a. NO_x —97 tons/year, verified by CEMS.
- b. CO —97 tons/year, verified by CEMS.
- c. VOC as CH₄ — 24 tons/year, verified by compliance tests and hours of operation in steady-state, pre-mix_mode.
- d. SO_x as SO₂ — ~~24~~**12** tons/year, verified by fuel sulfur content and fuel use data.
- e. PM₁₀ —~~97~~**56.9** tons/year, verified by compliance tests and hours of operation.

These limits shall apply to all emissions from all units at this facility, and shall include emissions during all modes of operation, including startup, shutdown and malfunction.

Verification: The project owner shall submit the following in each Quarterly Operations Report: All continuous emissions data reduced and reported in accordance with the District approved CEMS protocol; a list of maximum hourly, maximum daily, monthly, total quarterly, total calendar year, and rolling 12-month emissions of NO_x, CO, PM₁₀, VOC and SO_x (including calculation protocol); total monthly and rolling 12-month fuel use in the gas turbines and duct burners; average NO₂ concentration and average CO

mass emission rate for all operating periods except during startup, shutdown and malfunction for each gas turbine and associated duct burner, calculated on a rolling 12-month basis; a log of all excess emissions, including the information regarding malfunctions/breakdowns required by District Rule 430; operating parameters of emission control equipment, including but not limited to ammonia injection rate, NOx emission rate and ammonia slip; any maintenance to any air pollutant control system (recorded on an as-performed basis); and any permanent changes made in the plant process or production that could affect air pollutant emissions, and when the changes were made.

AQ-T7a Emissions from all permit units at the Blythe Energy Project, when combined with the emissions from all permitted units located at the adjacent Sonoran Energy Project, shall not exceed the following emission limits, based on a rolling 12 month summary:

- a. **NOx – 182.6 tons/year, verified by CEMS**
- b. **CO – 175 tons/year, verified by CEMS**
- c. **VOC as CH4 – 48.3 tons/year, verified by compliance tests and hours of operation in steady-state, pre-mix mode**
- d. **SOx as SO₂ – 20.8 tons/year, verified by fuel sulfur content and fuel use data**
- e. **PM10 – 97 tons/year, verified by compliance tests and hours of operation**

These limits shall include emissions during all modes of operation, including startup, shutdown and malfunction. (NOTE: Pursuant to Regulation XIII the District considers the Blythe Energy Project and the Sonoran Energy Project to be one facility. Each of these projects has been separately certified by the Energy Commission pursuant to Public Resources Code Section 25500.)

Verification: See Verification of AQ-T7.

IT IS SO ORDERED.

CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of an Order duly and regularly adopted at a meeting of the California Energy Commission held on June 14, 2016.

AYE: Weisenmiller, Douglas, Hochschild, Scott

NAY: None

ABSENT: McAllister

ABSTAIN: None

Original Signed by

Cody Goldthrite
Secretariat