

DOCKETED

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CALIFORNIA ENERGY COMMISSION

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CEC-57 (Revised 1/19)



STATEMENT OF STAFF APPROVAL OF PROPOSED CHANGE BLYTHE ENERGY PROJECT (99-AFC-08C)

On July 15, 2019, Blythe Energy, Inc. (Blythe Energy) filed a post-certification petition for a project change for the Blythe Energy Project (BEP). BEP, a 520-megawatt (MW) combined-cycle, natural gas-fired facility, was certified by the California Energy Commission (CEC) in March 2001, and began commercial operation in July 2003. The facility is located in the city of Blythe, in Riverside County.

DESCRIPTION OF PROPOSED CHANGE

Blythe Energy requests modification of Condition of Certification **AQ-T15** to replace the requirement for characterization of volatile organic compounds (VOC) emissions under cold startup, warm startup, hot startup, and shutdown conditions with a requirement to calculate VOC emissions during each startup and shutdown using the continuous emissions monitoring system (CEMS) and applied emissions factors.

The petition is available on the CEC's BEP website at <https://ww2.energy.ca.gov/sitingcases/blythe/index.html>.

ENERGY COMMISSION STAFF REVIEW AND CONCLUSIONS

Title 20, California Code of Regulations, section 1769, states that a project owner shall submit a post certification petition for (1) changes in project design, operation or performance, and (2) amendments to the Energy Commission Final Decision (Final Decision) or as previously amended.

CEC technical staff reviewed the petition for potential environmental effects and consistency with applicable laws, ordinances, regulations, and standards (LORS). Staff concludes that with the adoption of the revised condition of certification **AQ-T15**, the amended BEP would not result in significant adverse air quality related impacts, and that BEP would continue to comply with all applicable federal, state and Mojave Desert Air Quality Management District (District) air quality laws, ordinances, regulations, and standards (LORS). The full Air Quality Analysis is included as Attachment A.

ENVIRONMENTAL JUSTICE

Environmental Justice – Figure 1 shows 2010 census blocks in the six-mile radius of the BEP with a minority population greater than or equal to 50 percent. The population in these census blocks represents an environmental justice (EJ) population based on

race and ethnicity as defined in the United States Environmental Protection Agency’s *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*. Staff obtains demographic data within a six-mile radius around a project site based conservatively on the parameters for dispersion modeling used in staff’s air quality analysis. Air quality impacts are generally the type of project impacts that extend the furthest from a project site. Beyond a six-mile radius, air emissions have either settled out of the air column or mixed with surrounding air to the extent the potential impacts are less than significant. The area of potential impacts would not extend this far from the project site for most other technical areas included in staff’s EJ analysis.

Based on California Department of Education data in the **Environmental Justice – Table 1**, staff concluded that the percentage of those living in the Palo Verde Unified School District (in a six-mile radius of the project site) and enrolled in the free or reduced price meal program are comparatively larger than those in the reference geography, and thus are considered an EJ population based on low income as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*. **Environmental Justice – Figure 2** shows where the boundaries of the school district are in relation to the six-mile radius around the BEP site.

**Environmental Justice – Table 1
 Low Income Data within the Project Area**

SCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Number of Free or Reduced Price Meals	Percentage of Free or Reduced Price Meals
Palo Verde Unified	3,006	2,236	74.4%
REFERENCE GEOGRAPHY			
Riverside County	428,995	280,021	65.3%

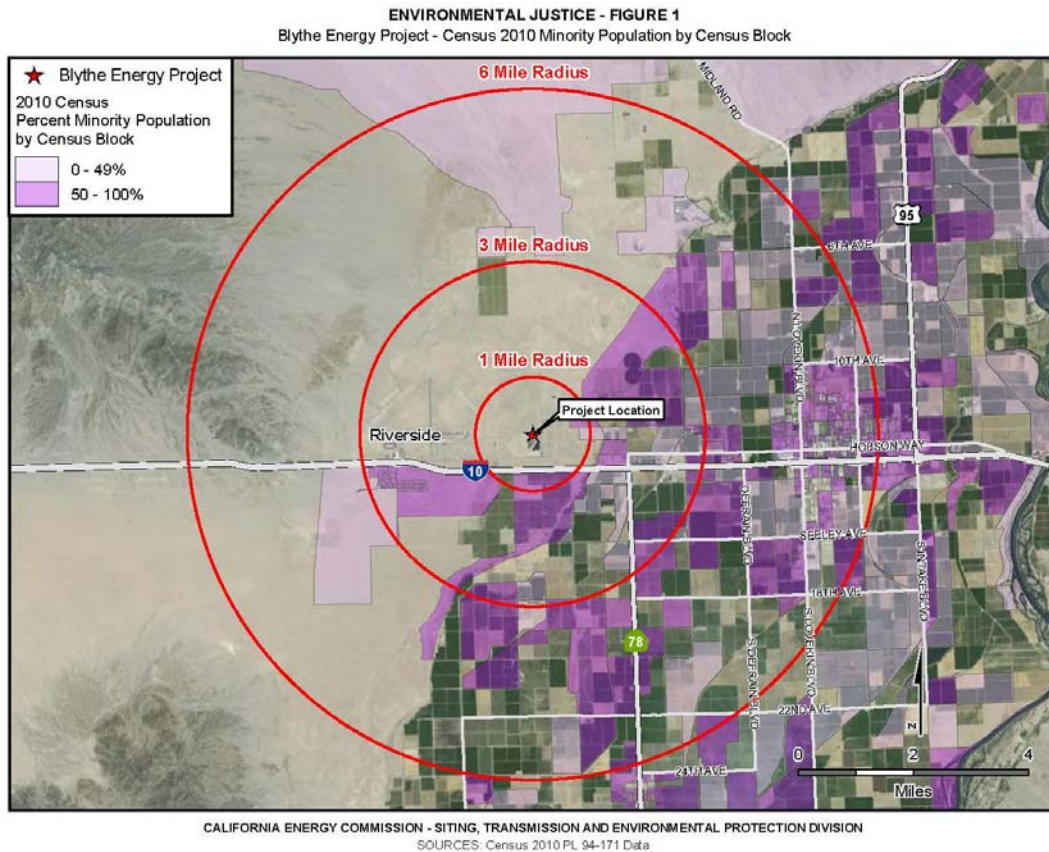
Source: CDE 2018. California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2017-2018, <<http://dq.cde.ca.gov/dataquest/>>.

The following technical areas (if affected) consider impacts to EJ populations: Air Quality, Cultural Resources (indigenous people), Hazardous Materials Management, Land Use, Noise and Vibration, Public Health, Socioeconomics, Soil and Water resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, and Waste Management.

Environmental Justice Conclusions

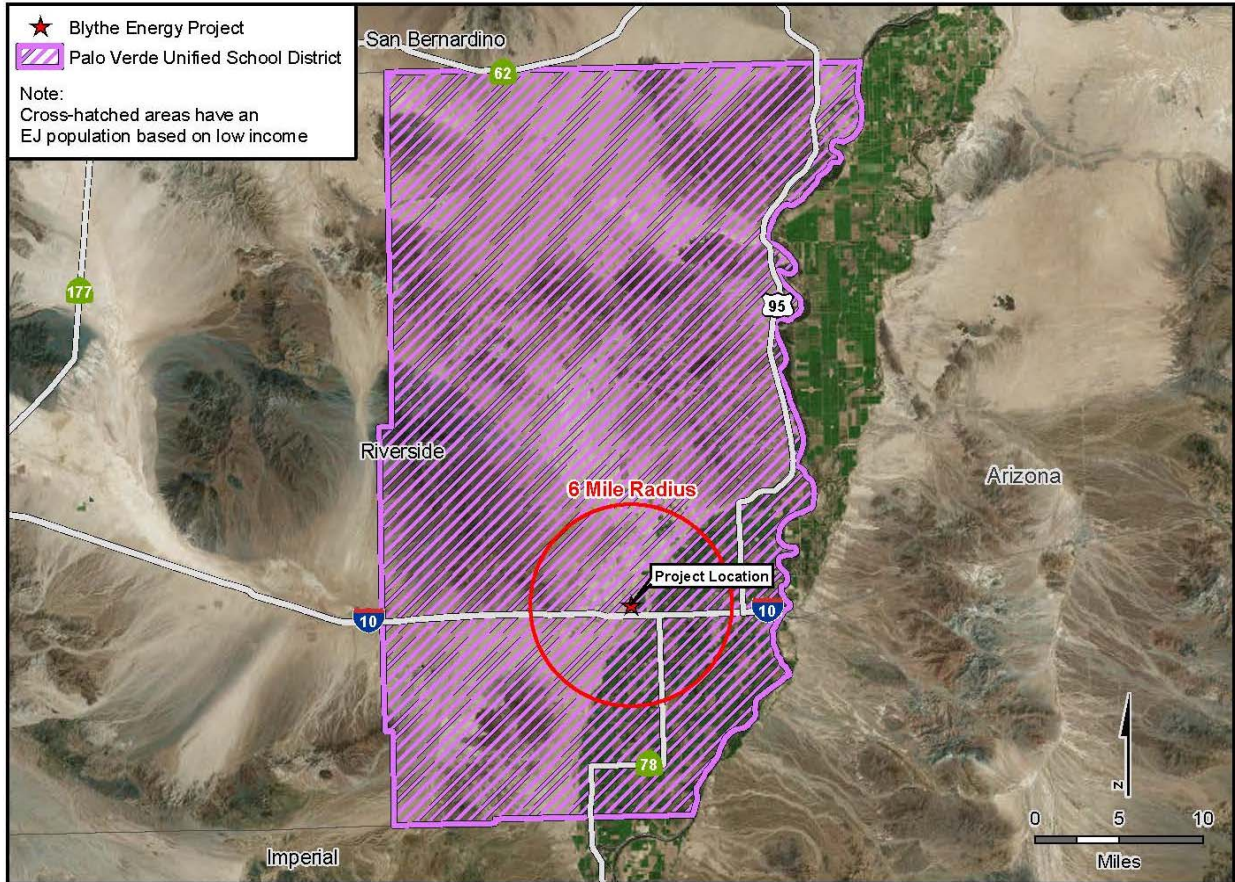
The only technical area affected by the proposed project change that considers impacts to EJ populations is Air Quality. In the air quality analysis, staff proposes changes to

Condition of Certification **AQ-T15**. Staff has determined that by adopting the proposed change to the existing Condition of Certification **AQ-T15**, the modified project would not cause significant air quality impacts for any population in the project's six-mile radius, including the EJ population represented in **Environmental Justice – Figure 1, Figure 2, and Table 1**. Impacts to the EJ population are less than significant.



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ENVIRONMENTAL JUSTICE - FIGURE 2
Blythe Energy Project - Environmental Justice Population Based on a Low Income Population



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SOURCES: TIGER Data, CA Dept. of Education Data Quest

ENERGY COMMISSION STAFF DETERMINATION

Pursuant to Title 20, California Code of Regulations, section 1769(a)(3), staff has determined for this petition that approval by the Commission at a noticed business meeting or hearing is not required because the proposed changes meet the criteria for staff approval:

(A)

- i. there is no possibility that the change may have a significant impact on the environment,
- ii. the change would not cause the project to fail to comply with any applicable laws, ordinances, regulations, or standards; and

(B)

- ii. no daily, quarterly, annual, or other emission limit will be increased as a result of the change.

Staff also concludes that the proposed changes do not meet the criteria requiring production of subsequent or supplemental review as specified in Title 14, California Code of Regulations, section 15162(a).

WRITTEN COMMENTS

This Statement of Staff Approval of the proposed project changes has been filed in the docket for this project. Pursuant to section 1769(a)(3)(C), any person may file an objection to staff's determination within 14 days of the filing of this statement on the grounds that the project change does not meet the criteria set forth in sections 1769(a)(3)(A) and (B). Absent any objections as specified in 1769(a)(3)(C), this petition will be approved 14 days after this statement is filed.

Written comments or objections to staff's determination may be submitted using the CEC's e-Commenting feature, as follows: Go to the CEC's project webpage and click on either the "Comment on this Proceeding," or "Submit e-Comment" link. When your comments are filed, you will receive an email with a link to them.

Written comments or objections may also be mailed or hand-delivered to:

California Energy Commission
Docket Unit, MS-4
Docket No. **99-AFC-08C**
1516 Ninth Street
Sacramento, CA 95814-5512

All comments and materials filed with the Docket Unit will be added to the facility Docket Log and be publically accessible on the CEC's webpage for the facility.

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If you have questions about this notice, please contact Jonathan Fong, Compliance Office Supervisor, at (916) 653-0900, or by fax to (916) 654-3882, or via e-mail at Jonathan.Fong@energy.ca.gov.

For information on public participation, please contact the Public Advisor, at (916) 654-4489 or (800) 822-6228 (toll-free in California) or send your e-mail to publicadvisor@energy.ca.gov.

News media inquiries should be directed to the CEC Media Office at (916) 654-4989, or by e-mail at mediaoffice@energy.ca.gov.

Listserv: BlythePower

BLYTHE ENERGY PROJECT (99-AFC-08C)

Petition to Amend **AQ-T15**

AIR QUALITY

Tao Jiang, Ph.D., P.E.

SUMMARY OF CONCLUSIONS

In this petition to amend the Blythe Energy Project (BEP), the petitioner proposes to modify the existing Air Quality Condition of Certification **AQ-T15**. Staff concludes that with the adoption of the revised condition of certification **AQ-T15**, the amended BEP would not result in significant adverse air quality related impacts, and that BEP would continue to comply with all applicable federal, state and Mojave Desert Air Quality Management District (District) air quality laws, ordinances, regulations, and standards (LORS).

INTRODUCTION

BEP was certified by the California Energy Commission (CEC) on March 21, 2001 (CEC 2001) and began commercial operations in July 2003. The facility is a nominal 520 megawatt natural gas-fired combined-cycle power plant located in the City of Blythe. The CEC approved a petition to modify air quality conditions in 2005 (CEC 2005), including carbon monoxide (CO) emission limits, startup/shutdown emission limits and startup/shutdown duration limits. In January 2015, the CEC approved a turndown package to the two existing combustion turbines (CEC 2015a). In July 2015, the CEC approved a petition to reduce allowable annual nitrogen oxides (NO_x), CO, and particulate matter less than 10 microns (PM₁₀) emissions (CEC 2015b). In June 2016, the CEC approved a petition to reduce PM₁₀ and sulfur oxides (SO_x) emissions (CEC 2016). In January 2018, the CEC approved another petition to increase annual CO emissions limit and eliminate combined annual emission limits of NO_x, CO, volatile organic compound (VOC), SO_x and PM₁₀ for BEP and BEP Phase II (CEC 2018).

On July 15, 2019, Blythe Energy Inc. filed a Petition to Amend with the CEC proposing to change Condition of Certification **AQ-T15** for the BEP (BEP 2019). The amendment requests to replace the requirement for characterization of VOC emissions under cold startup, warm startup, hot startup, and shutdown conditions with a requirement to calculate VOC emissions during each startup and shutdown using the CEMS and applied emissions factors. This modification does not involve any physical changes or changes in the method of operation of the gas turbines, and therefore will not change emissions. The change has been reviewed and approved by the District in a Preliminary Determination for Significant Modification of Blythe Energy Project (MDAQMD 2019) issued on September 19, 2019.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS - COMPLIANCE

BEP is subject to all the LORS described in the Decision for BEP (CEC 2001) and previous amendments (CEC 2005, CEC 2015a, CEC 2015b, CEC 2016 and CEC 2018). The analysis of this amendment is based on the same LORS.

ANALYSIS OF REQUESTED CHANGES

Condition of certification **AQ-T15** requires startup/shutdown source tests at least once every five years on each of the two gas turbines. The characterization of VOC emissions requires the tests under three startup types (cold, warm and hot). A cold startup requires offline status for 48 hours prior to the event. A warm startup requires offline status for 8 hours prior to the event. These offline periods reduce the facility's availability to the CAISO/Southern California Edison. The reduced availability results in lost capacity and lost ancillary services as required under respective contracts/agreements, which in turn results in lost revenue and penalties.

Characterization of emissions under these three scenarios also requires a source testing vendor to be onsite for three discrete startup events (cold, warm, and hot), for four (plus) days, with possible multiple mobilizations. During source testing, the facility must be in moderate operations at various load points according to source test protocol, and not as dispatched by the California Independent System Operator (CAISO) or Southern California Edison (SCE), which could negatively affect bulk electric system reliability and grid stability, and has further significant financial implications. Therefore, the project owner claims that the characterization of VOC emissions under the three startup types specified in **AQ-T15** is costly and burdensome.

The project owner proposes to replace the requirement to characterize VOC emissions by stack testing with a requirement to calculate the VOC emissions during every startup and shutdown event using the corresponding emissions factors developed from previous source testing. **Air Quality Table 1** summarizes the previous VOC source test results conducted by Delta Air Quality Services in 2003, 2008, and 2014. These VOC test results were previously submitted to and approved by the District and the CEC. The 2003 results were low because the turbine units were new and initial tuning occurred right before the testing. The 2008 results were higher because the units were not equipped with oxidation catalyst and the facility only operated at full load at that time. Furthermore, the turbine units had not been tuned for low load operation. The 2014 results were the lowest because the oxidation catalysts were installed in 2010 and extensive low-load tuning was conducted in 2014. The project owner claims that the 2014 testing results are the most representative of future emissions.

However, to be conservative with only limited data points, the owner chose to propose the average of the three results. Staff agrees with this proposal, which has also been approved by the District. By applying the average emissions factors as presented in the two grayed bottom rows of **Air Quality Table 1**, staff believes VOC emissions can be

conservatively calculated by the CEMS. The proposed change will also eliminate emissions associated with startups and shutdowns that occur for the sole purpose of conducting VOC stack testing. Therefore, the proposed amendment would provide a balance to ensure conservative calculation of VOC emissions during startups and shutdowns.

**Air Quality Table 1
VOC Test Results Summary for BEP**

		Unit 1 lb/hr	Unit 1 lb/mmBtu	Unit 2 lb/hr	Unit 2 lb/mmBtu
Cold Startup	2014	2.08	0.0033	0.00	0.0000
	2008	14.57	0.0120	13.19	0.0120
	2003	0.00	0.0000	0.43	0.0010
	Average	5.55	0.0051	4.54	0.0043
Warm Startup	2014	0.00	0.0000	0.00	0.0000
	2008	10.95	0.0100	12.37	0.0120
	2003	4.26	0.0040	0.00	0.0100
	Average	5.07	0.0047	4.12	0.0073
Hot Startup	2014	0.00	0.0000	0.00	0.0000
	2008	15.79	0.0140	14.37	0.0130
	2003	0.00	0.0000	1.08	0.0020
	Average	5.26	0.0047	5.15	0.0050
Shutdown	2014	0.00	0.0000	0.00	0.0000
	2008	12.32	0.0640	21.40	0.0290
	2003	2.50	0.0020	0.40	0.0030
	Average	4.94	0.0020	7.27	0.0107
Average Startup Emission Factor		0.0048 lb/mmBtu		0.0056 lb/mmBtu	
Average Shutdown Emission Factor		0.0220 lb/mmBtu		0.0107 lb/mmBtu	

ENVIRONMENTAL JUSTICE IMPACTS

Environmental Justice Figure 1, Figure 2, and Environmental Justice Table 1 show the presence of an environmental justice population based on a minority and low-income population within a six-mile radius of BEP. Air quality impacts from the proposed changes are considered less than significant, including impacts to environmental justice population. No changes to the project mitigation are being proposed. Therefore, there are no Air Quality environmental justice issues related to the proposed facility modifications and no minority or low-income populations would be significantly or adversely impacted.

CONCLUSIONS AND RECOMMENDATIONS

Staff recommends that the revised condition of certification shown below be approved. With the recommended changes, BEP would continue to conform to all applicable federal, state, and District LORS. Staff concludes the amended facility would not cause any significant adverse air quality impacts, provided that the following condition of certification is included.

AMENDED CONDITIONS OF CERTIFICATION

The amended Air Quality Condition of Certification **AQ-T15** is included below. ~~Strikethrough~~ is used to indicate deleted language and **underline and bold** is used for new language.

AQ-T15 ~~— The project owner shall, at least as often as once every five years (commencing with the initial compliance test), include the following supplemental source tests in the annual compliance testing:~~

- ~~a. Characterization of cold startup VOC emissions;~~
- ~~b. Characterization of warm startup VOC emissions;~~
- ~~c. Characterization of hot startup VOC emissions; and~~
- ~~d. Characterization of shutdown VOC emissions.~~

Verification: ~~Each annual source test report shall either include the results of these tests for the current year or document the date and results of the last such tests.~~

AQ-T15 VOC emissions during startup and shutdown periods will be calculated by the CEMS using the following factors:

For Permit B007953 (CT1) only:

- a. **startup events: 0.0048 lb/mmBtu**
- b. **shutdown events: 0.0220 lb/mmBtu**

For Permit B007954 (CT2) only:

- a. **startup events: 0.0056 lb/mmBtu**
- b. **shutdown events: 0.0107 lb/mmBtu**

Verification: The calculated emission factors shall be reported in each Quarterly Operations Report, which is required by AQ-T17.

REFERENCES

- BEP 2019 - Blythe Energy Inc. Petition of Amend AQ-T15 (99-AFC-08C), July 15, 2019.
- CEC 2001 - California Energy Commission. Commission Decision of Blythe Energy Project (99-AFC-08). March 26, 2001.
- CEC 2005 - California Energy Commission, Order Approving a Petition to Modify Air Quality Conditions (99-AFC-08C). June 24, 2005.
- CEC 2015a – California Energy Commission. Letter Approving Requested Modification to Add a Turndown Upgrade Package to the Two Existing Gas Turbines at Blythe Energy Center (99-AFC-8C). January 7, 2015.
- CEC 2015b – California Energy Commission. Order Approving a Petition to Reduce Allowable Annual NOx, CO, and PM10 Emissions at Blythe Energy Center (99-AFC-8C). July 16, 2015.
- CEC 2016 – California Energy Commission. Order Approving Petition to Reduce PM10 and SOx Emissions at Blythe Energy Center (99-AFC-8C). June 17, 2016.
- CEC 2018 – California Energy Commission. Order Approving Petition to Amend the Facility License (99-AFC-8C). January 18, 2018.
- MDAQMD 2019 - Mojave Desert Air Quality Management District. Preliminary Determination for Significant Modification of Blythe Energy Project. September 19, 2019