DOCKETED

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STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of:	
BLYTHE ENERGY PROJECT	**Docket No. 99-AFC-8C**
	Order No. 15-0708-4
BLYTHE ENERGY, LLC	**ORDER APPROVING a Petition to Reduce Allowable Annual NOx, CO, and PM10 Emissions**

On February 12, 2015, Blythe Energy, Inc (Blythe Energy) filed a petition with the California Energy Commission (Energy Commission) requesting to modify the Final Decision for the Blythe Energy Project (BEP) to reduce allowable annual NOx, CO, and PM10 emissions. Supplemental information was received on May 6, 2015 and May 7, 2015. With these reductions in annual emissions limits, the site will no longer be considered a major stationary source under federal Prevention of Significant Deterioration regulations.

This amendment involves several permit changes to reduce facility-wide annual mass emissions limits in the Energy Commission's Final Decision made on March 26, 2001, and the Order Approving a Petition to Modify Air Quality Conditions in 2005. All changes have been reviewed and approved by the Mojave Desert Air Quality Management District (District) in a Final Decision/Final Determination for New Source Review Action & Title V Federal Operating Permit issued on May 7, 2015.

No increases in emissions or other environmental impacts will result from the proposed changes; and no change in annual fuel consumption will result from this proposed amendment. Therefore there would be no change in greenhouse gas emissions as a result of the proposed amendment.

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. Staff is proposing to renumber the Air Quality Conditions of Certification in the Energy Commission's Final Decision to ease cross reference to District documents.

ENERGY COMMISSION FINDINGS

Based on staff's analysis, the Energy Commission concludes that the proposed modification(s) 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 well 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~~.

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 July 8, 2015.

AYE: Weisenmiller, Douglas, McAllister, Scott
NAY: None
ABSENT: Hochschild
ABSTAIN: None

Tiffani Winter,
Secretariat

AMENDED AND DELETED CONDITIONS OF CERTIFICATION

Below is a list of conditions of certification that staff recommends to be revised from those approved in the 2001 Energy Commission Final Decision and the 2005 Order Approving a Petition to Modify Air Quality Conditions. Since the project has been in commercial operation, some Energy Commission staff conditions that only apply to project construction, commissioning and initial source testing are obsolete and therefore staff recommends deletion of these conditions. In addition to the conditions reflecting the project changes discussed in staff's analysis, staff also proposes administrative changes in conditions of certification to make the Energy Commission and District air quality conditions consistent, including renumbering all conditions of certification. These changes are also reflect the May 7, 2015 MDAQMD Final Decision. ~~Strikethrough~~ is used to indicate deleted language and **underline and bold** is used for new language.

ENERGY COMMISSION STAFF CONDITIONS

AQ-C1 **[Deleted, (July 8, 2015)]**~~Prior to breaking ground at the project site, the project owner shall prepare a Fugitive Dust Mitigation Plan that will specifically identify fugitive dust mitigation measures that will be employed for the construction of the Blythe Energy Project and related facilities. The Fugitive Dust Mitigation Plan shall specifically identify measures to limit fugitive dust emissions from construction of the project site and linear facilities. Measures that should be addressed include the following:~~

~~1. The identification of the employee parking area(s) and the surface composition of those parking area(s);~~

~~2. The frequency of watering of unpaved roads and disturbed areas;~~

~~3. The application of chemical dust suppressants;~~

~~4. The use of gravel in high traffic areas;~~

~~5. The use of paved access aprons;~~

~~6. The use of posted speed limit signs;~~

~~7. The use of wheel washing areas prior to large trucks leaving the project site; and,~~

~~8. The methods that will be used to clean up mud and dirt that has been tracked out from the project site onto public roads.~~

Verification: ~~At least thirty (30) days prior to breaking ground at the project site, the project owner shall provide the CEC Compliance Project Manager (CPM) with a copy of the Fugitive Dust Mitigation Plan (FDMP) for approval. Ground breaking shall not commence until the project owner receives written approval of the FDMP from the CPM.~~

AQ-C2 **[Deleted, (July 8, 2015)]**~~The project owner shall require as a condition of its construction contracts that all contractors/subcontractors ensure that all heavy earthmoving equipment, including but not limited to bulldozers, backhoes, compactors, loaders, motor graders, trenchers, cranes, dump trucks and other heavy duty construction related trucks, have been properly maintained and the engines tuned to the engine manufacturer's specifications. The project owner shall further require as a condition of its construction contracts, that all heavy construction equipment shall not remain running at idle for more than 5 minutes, to the extent practical.~~

Verification: ~~The project owner shall submit to the CPM, via the Monthly Compliance Report, a list of all heavy equipment used on site during that month including the owner of that equipment responsible for its maintenance and a letter from each owner indicating that the heavy equipment in question is properly maintained and tuned to manufacturer's specifications. The project owner shall maintain construction contracts on-site for six months following the start of commercial operation.~~

AQ-C3 **[Deleted, (July 8, 2015)]**~~During an initial commissioning period of no more than 120 days, commencing with the first firing of fuel in this equipment, NOx, CO, VOC and ammonia concentration limits shall not apply. The project owner shall minimize emissions of NOx, CO, VOC and ammonia to the maximum extent possible during the initial commissioning period.~~

Verification: ~~During the initial commissioning period, the project owner shall submit a detailed record of all commissioning activities in the Monthly Compliance Report.~~

AQ-C4 **[Deleted, (July 8, 2015)]**~~The project owner shall submit a commissioning plan to the District and the CEC at least four weeks prior to the first firing of fuel in this equipment. The commissioning plan shall describe the procedures to be followed during the commissioning of the CTGs, HRSGs and steam turbine. The commissioning plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not be limited to, the timing of the dry low NOx combustors, the installation and testing of the CEMS, and any activities requiring the firing of the CTGs and HRSGs without abatement by an SCR system.~~

Verification: ~~At least four (4) weeks prior to the first firing of natural gas in either turbine, the project owner shall submit a detailed Initial Commissioning Plan to the District and the CPM. This plan should provide detailed technical information regarding initial commissioning in a format that facilitates technical verification.~~

AQ-C5 **[Deleted, (July 8, 2015)]**~~The project owner shall tune each CTG and HRSG to minimize emissions of criteria pollutants at the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor.~~

Verification: ~~During the initial commissioning period, the project owner shall submit a detailed record of all commissioning activities in the Monthly Compliance Report.~~

AQ-C6 **[Deleted, (July 8, 2015)]**~~The project owner shall install, adjust and operate each SCR system to minimize emissions of NOx from the CTG and HRSG at the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor. The NOx and ammonia concentration limits shall apply coincident with the steady state operation of the SCR systems.~~

Verification: ~~During the initial commissioning period, the project owner shall submit a detailed record of all commissioning activities in the Monthly Compliance Report.~~

AQ-C7 **[Deleted, (July 8, 2015)]**~~The total number of firing hours of each CTG and HRSG without abatement of NOx by the SCR shall not exceed 350 hours during the initial commissioning period. Such operation without NOx abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system in place and operating. Upon completion of these activities, the project owner shall provide written notice to the District and CEC and the unused balance of the unabated firing hours shall expire.~~

Verification: ~~During the initial commissioning period, the project owner shall submit a detailed record of all commissioning activities in the Monthly Compliance Report.~~

AQ-C8 **[Deleted, (July 8, 2015)]**~~During a period that includes a portion of the initial commissioning period, emissions from this facility shall not exceed the following emission limits (verified by CEMS):~~

~~a. CO – 421 tons/year (rolling 12 month summary), 44,000 pounds/calendar day and 2000 pounds/hour~~

Verification: ~~During the initial commissioning period, the project owner shall submit a detailed record of all commissioning activities in the Monthly Compliance Report. In addition, after the end of the initial commissioning period the project owner shall continue to report the above data in the Quarter Operations Report for as long as the monitoring period includes a portion of the initial commissioning period.~~

AQ-C9 **[Deleted, (July 8, 2015)]**~~During a period that includes a portion of the initial commissioning period, prior to the steady state operation of the SCR system, emissions from this facility shall not exceed the following emission limits (verified by CEMS):~~

~~b. NO_x – 273 tons/year (rolling 12 month summary), 22,000 pounds/calendar day and 1000 pounds/hour~~

Verification: ~~During the initial commissioning period, the project owner shall submit a detailed record of all commissioning activities in the Monthly Compliance Report. In addition, after the end of the initial commissioning period the project owner shall continue to report the above data in the Quarter Operations Report for as long as the monitoring period includes a portion of the initial commissioning period.~~

AQ-C10 **[Deleted, (July 8, 2015)]**~~Within sixty (60) days after achieving the maximum firing rate at which each turbine will be operated, but not later than 180 days after the first firing of fuel in each turbine, the operator shall perform an initial compliance test. This test shall demonstrate that each turbine is capable of operation at 100% load in compliance with the emission limits in AQ-5. The results of the initial compliance test shall be used to prepare a supplemental health risk analysis. The initial compliance test shall include tests for the following.~~

~~a. Formaldehyde;~~

~~b. Certification of CEMS and CERMS (or stack gas flow calculation method) at 100% load, startup modes and shutdown mode;~~

~~c. Characterization of cold startup VOC emissions;~~

~~d. Characterization of warm startup VOC emissions;~~

~~e. Characterization of hot startup VOC emissions; and~~

~~f. Characterization of shutdown VOC emissions.~~

~~**Verification:** Within sixty (60) days of achieving the maximum firing rate at which the facility will be operated, but not later than 180 days after the first firing of fuel in each turbine, the project owner shall perform an Initial Compliance Test. The results of this test and a supplemental health risk analysis shall be submitted to the District and the CPM within thirty (30) days.~~

District Final Decision/Final Determination for New Source Review Action & Title V Federal Operating Permit Conditions

The following Conditions of Certification apply to combustion turbine generator power block (CT1) (District Permit Number: B007953) and combustion turbine generator power block (CT2) (District Permit Number: B007954)

AQ-T1 ~~The project owner shall submit to the Mojave Desert Air Pollution Control District (District) Air Pollution Control Officer (APCO), the United States Environmental Protection Agency (EPA) Region IX and the California Energy Commission (CEC) a Quarterly Operations Report for the preceding calendar quarter by January 30, April 30, July 30 and October 30 of each year this permit is in effect. Each January 30 submittal shall include a summary of the reported information for the previous year. This information shall be maintained on site for a minimum of five (5) years and shall be provided to District or CEC personnel on request.~~ **Operation of the turbines shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.**

Verification: ~~The project owner shall submit a Quarterly Operations Report for the preceding calendar quarter by January 30, April 30, July 30 and October 30 of each~~

~~year. The January 30 report shall include an annual summary of the Quarterly Operations Reports for the preceding year. The reports shall be submitted to the Mojave Desert Air Pollution Control District (District), the United States Environmental Protection Agency (EPA) and the California Energy Commission Compliance Project Manager (CPM). The following Conditions of Certification apply to the two individual gas turbine generators (District Permit Numbers: B007953, B007954).~~ **The project owner shall make the site available for inspection by representatives of the District, California Air Resources Board (ARB), the United States Environmental Protection Agency (U.S. EPA) and Energy Commission.**

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 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 ~~US~~**U.S.** EPA for compliance with the fuel monitoring provisions of 40 CFR 60 Subpart GG.

AQ-T3 The turbines are subject to the federal NSPS codified at 40 CFR Part 60, Subparts A (General Provisions) and GG (Standards of Performance for Stationary Gas Turbines). ~~This equipment is~~ **The turbines are** also subject to the Prevention of Significant Deterioration (40 CFR 51.166) and Federal Acid Rain (Title IV) programs. Compliance with all applicable provisions of these regulations is required.

Verification: At least ninety (90) days prior to the first firing of fuel in either turbine, the project owner shall provide the District, the ARB and the CPM copies of the federal PSD and Acid Rain permits.

AQ-T4 ~~Emissions of NOx, CO, oxygen and ammonia slip shall be monitored using a Continuous Emissions Monitoring System (CEMS). Turbine fuel consumption shall be monitored using a continuous monitoring system. Stack gas flow rate shall be monitored using either a Continuous Emission Rate Monitoring System (CERMS) meeting the requirements of 40 CFR Part 75 Appendix A or a stack flow rate calculation method. The operator shall install, calibrate, maintain, and operate these monitoring systems according to a District approved monitoring plan and MDAQMD Rule 218, and they shall be installed prior to initial equipment startup.~~ **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. NOx as NO_2 — the most stringent of 19.80 lb/hr or 2.5 ppmvd corrected to 15% O_2 and averaged over one hour~~).~~.

ii. NOx as NO_2 — effective May 7, 2016, 2.0 ppmvd corrected to 15% O_2 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% O_2 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 SOx:

i. VOC as CH_4 — 2.9 lb/hr (based on 1 ppmvd corrected to 15% O_2).

ii. SOx as SO_2 — 2.7 lb/hr (based on 0.5 grains/100 dscf fuel sulfur).

iii. PM10 — 11.5 lb/hr.

Verification: ~~The project owner shall make the site available for inspection by representatives of the District, ARB, EPA and CEC.~~ 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 NO_2 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-T5 ~~Emissions from the turbines (including its associated duct burner) 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 rates, computed every 15 minutes, verified by CEMS and annual compliance tests:~~

~~i. NOx as NO2 — 19.80 lb/hr (based on 2.5 ppmvd corrected to 15% O2 and averaged over one hour).~~

~~ii. CO — 17.5 lb/hr (based on 4.0 ppmvd corrected to 15% O2 and averaged over 3 hours).~~

~~iii. Ammonia Slip — 10 ppmvd (corrected to 15% O2 and averaged over three hours).~~

~~b. Hourly rates, verified by annual compliance tests or other compliance methods in the case of SOx:~~

~~i. VOC as CH4 — 2.9 lb/hr (based on 1 ppmvd corrected to 15% O2).~~

~~ii. SOx as SO2 — 2.7 lb/hr (based on 0.5 grains/100 dscf fuel sulfur).~~

~~iii. PM10 — 11.5 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, total quarterly, and total calendar year emissions of NO_x, CO, PM_{10}, 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.~~

Emissions of CO and NO_x from the turbines shall only exceed the limits contained in AQ-T4 during startup and shutdown periods as follows:

a. Startup is defined as the period beginning with ignition and lasting until either the equipment complies with all condition AQ-T4 operating permit limits for two consecutive 15-minute averaging periods or four hours after ignition, whichever occurs first. Shutdown is defined as the period beginning with the lowering of equipment from base load and lasting until fuel flow is completely off and combustion has ceased.

b. The emissions from each startup or shutdown event shall not exceed the following, verified by CEMS:

i. NOx — 376 lb.

ii. CO — 3600 lb.

c. Effective May 7, 2016, the CO emissions from all startup and shutdown events at both power blocks, averaged over a rolling 12-month period, shall not exceed 750 lb/event, verified by CEMS.

Verification: The project owner shall include a detailed record of each startup and shutdown event in the Quarterly Operations Report. Each record shall include, but not be limited to: duration; fuel consumption; total emissions of NOx and CO;

average CO emissions from all startups and shutdowns of the gas turbines on a per event basis calculated on a rolling 12-month basis; and the date and time of the beginning and end of each startup and shutdown event. Additionally, the project owner shall report the total plant operation time (hours), number of startups, hours in startup and shutdown, and average plant operation schedule (hours per day, days per week, weeks per year).

AQ-T6 Emissions from the turbines, including the duct burner, shall not exceed the following emission limits, based on a calendar day summary:

a. NOx — 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. SOx as SO_2 — 130 lb/day, verified by fuel sulfur content and fuel use data.

e. PM10 — 565 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, PM_{10}, 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. NOx — ~~202~~**97** tons/year, verified by CEMS.

b. CO — ~~621~~**97** tons/year, verified by CEMS.

c. VOC as CH_4 — 24 tons/year, verified by compliance tests and hours of operation in **steady-state, pre-mix** mode.

d. SOx as SO_2 — 24 tons/year, verified by fuel sulfur content and fuel use data.

e. PM10 — ~~103~~**97** 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, ~~and~~ total calendar year, **and rolling 12-month** emissions of NO_x, CO, $PM10$~~10~~, VOC and SO_x (including calculation protocol); **total monthly and rolling 12-month fuel use in the gas turbines and duct burners; average NO_2 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-T8 ~~Emissions of CO and NO_x from the turbines shall only exceed the limits contained in AQ-5 during startup and shutdown periods as follows:~~

~~a. Startup is defined as the period beginning with ignition and lasting until either the equipment complies with all operating permit limits specified in condition AQ-5a for two consecutive 15-minute averaging periods or fourhours after ignition, whichever occurs first. Shutdown is defined as the period beginning with the lowering of equipment from base load and lasting until fuel flow is completely off and combustion has ceased.~~

~~b. The emissions from each startup or shutdown event shall not exceed the following, verified by CEMS:~~

~~i. NOx — 376 lb.~~

~~ii. CO — 3600 lb.~~

Particulate emissions from this equipment shall not exceed opacity equal to or greater than twenty percent (20%) for a period aggregating more than three (3) minutes in any one (1) hour, excluding uncombined water vapor.

Verification: ~~The project owner shall include a detailed record of each startup and shutdown event in the Quarterly Operations Report. Each record shall include, but not be limited to, duration, fuel consumption, total emissions of NOx and CO, and the date and time of the beginning and end of each startup and shutdown event. Additionally, the project owner shall report the total plant operation time (hours), number of startups, hours in startup and shutdown, and average plant operation schedule (hours per day, days per week, weeks per year).~~ **The project owner shall make the site available for**

inspection by representatives of the District, ARB, U.S. EPA and Energy Commission.

AQ-T9 ~~Particulate emissions from this equipment shall not exceed an opacity equal to or greater than twenty percent (20%) for a period aggregating more than three (3) minutes in any one (1) hour, excluding uncombined water vapor.~~ **The turbines shall exhaust through a stack at a minimum height of 130 feet.**

Verification: ~~The project owner shall make the site available for inspection by representatives of the District, ARB, EPA and CEC.~~ **Prior to the first firing of natural gas in either turbine the owner/operator shall provide as built drawings of the stack or other suitable proof of the minimum stack height to the District and the Energy Commission CPM.**

AQ-T10 ~~The turbines shall exhaust through a stack at a minimum height of 130 feet.~~ **The project owner shall not operate the turbines after the initial commissioning period without the selective catalytic NOx reduction system with valid District permit, as well as the oxidation catalyst with valid District permit installed and fully functional.**

Verification: ~~Prior to the first firing of natural gas in either turbine the owner/operator shall provide as built drawings of the stack or other suitable proof of the minimum stack height to the District and the CEC CPM.~~ **The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.**

AQ-T11 ~~The project owner shall not operate the turbines after the initial commissioning period without the selective catalytic NOx reduction system with valid District permit, installed and fully functional.~~
The owner/operator shall provide stack sampling ports and platforms necessary to perform source tests required to verify compliance with District rules, regulations and permit conditions. The location of these ports and platforms shall be subject to District approval.

Verification: ~~The project owner shall make the site available for inspection by representatives of the District, ARB, EPA and the CEC.~~
Prior to the first firing of natural gas in either turbine the owner/operator shall provide to the District and the CEC CPM as built drawings of the stack or other suitable documentation of the correct and complete installation of all necessary sampling ports and access platforms.

AQ-T12 ~~The project owner shall provide stack sampling ports and platforms necessary to perform source tests required to verify compliance with District rules, regulations and permit conditions. The location of these ports and platforms shall be subject to District approval.~~ **Emissions of NOx, CO, oxygen and ammonia slip shall be monitored using a Continuous Emissions Monitoring System (CEMS). Each CEMS shall be operational whenever the associated combustion turbine generator is in operation, including during periods of startup, shutdown and malfunction. Turbine fuel consumption shall be monitored using a continuous monitoring system. Stack gas flow rate shall be monitored using either a Continuous Emission Rate Monitoring System (CERMS) meeting the requirements of 40 CFR Part 75 Appendix A or a stack flow rate calculation method. The operator shall install, calibrate, maintain, and operate these monitoring systems according to a District approved monitoring plan and MDAQMD Rule 218, and they shall be installed prior to initial equipment startup. Six (6) months prior to installation the operator shall submit a monitoring plan for District review and approval.**

Verification: ~~Prior to the first firing of natural gas in either turbine the owner/operator shall provide to the District and the CEC CPM as built drawings of the stack or other suitable documentation of the correct and complete installation of all necessary sampling ports and access platforms.~~ **The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and Energy Commission.**

AQ-T13 The project owner shall conduct all required compliance/certification tests in accordance with a District-approved test plan.

Verification: Thirty (30) days prior to the compliance/certification tests the operator shall provide a written test plan for District review and approval. Written notice of the compliance/certification test shall be provided to the District ten (10) days prior to the tests so that an observer may be present. A written report with the results of such compliance/certification tests shall be submitted to the District within forty-five (45) days after testing.

AQ-T14 The project owner shall perform the following annual compliance tests in accordance with the MDAQMD Compliance Test Procedural Manual. **The test report shall be submitted to the District no later than six weeks prior to the expiration date of this permit. The following compliance tests are required**:

a. NOx as NO_2 in ppmvd at 15% O_2 and lb/hr (measured per ~~US~~**U.S.** EPA Reference Methods 19~~,and~~ 20**, or 7E**). **If testing is performed at 90%-100% of rated capacity, then the annual calibration RATA associated with the NOx CEMS in use on these units may be used in lieu of the required annual U.S. EPA Reference Method 20, as**

long as all of the requirements of prior test notification, proper test result submittal, etc., are followed.

b. VOC as CH_4 in ppmvd at 15% O_2 and lb/hr (measured per ~~US~~**U.S.** EPA Reference Methods 25A and 18).

c. SOx as SO_2 in ppmvd at 15% O_2 and lb/hr.

d. CO in ppmvd at 15% O_2 and lb/hr (measured per ~~US~~**U.S.** EPA Reference Method 10).

e. PM10 in mg/m3 at 15% O_2 and lb/hr (measured per ~~US~~**U.S.** EPA Reference Methods 5 and 202 or CARB Method 5).

f. Flue gas flow rate in **d**scfm~~d~~.

g. Opacity (measured per ~~US~~ **U.S.** EPA reference Method 9).

h. Ammonia slip in ppmvd at 15% O_2.

Verification: The annual source test report shall be submitted to the District and CPM no later than six (6) weeks prior to the expiration date of the District permit.

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

c. 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-T16 Continuous monitoring systems shall meet the following acceptability testing requirements from 40 CFR 60 Appendix B:

a. For NOx, Performance Specification 2.

b. For O_2, Performance Specification 3.

c. For CO, Performance Specification 4.

d. For stack gas flow rate, Performance Specification 6 (if CERMS is installed.)

e. For ammonia, a District approved procedure that is to be submitted by the project owner.

Verification: The project owner shall discuss compliance with these specifications in each Quarterly Operations Report.

AQ-T17 ~~The project owner must surrender to the District sufficient valid Emission Reduction Credits for the turbines before the start of construction of any part of the project for which this equipment is intended to be used. In accordance with Regulation XIII the operator shall obtain 202 tons of NOx and 103 tons of PM10 offsets (VOC ERCs from SCAQMD may be substituted for NOx ERCs at a rate of 1.6:1).~~ **The project owner shall submit to the Mojave Desert Air Pollution Control District (District) Air Pollution Control Officer (APCO), the United States Environmental Protection Agency (U.S. EPA) Region IX and the California Energy Commission a Quarterly Operations Report for the preceding calendar quarter by January 30, April 30, July 30 and October 30 of each year this permit is in effect. Each January 30 submittal shall include a summary of the reported information for the previous year. This information shall be maintained on site for a minimum of five (5) years and shall be provided to District or Energy Commission personnel on request.**

a. **Operating parameters of emission control equipment, including but not limited to ammonia injection rate, NOx emission rate and ammonia slip.**

b. **Total plant operation time (hours), number of startups, hours in startup, and hours in shutdown period.**

c. **Date and time of the beginning and end of each startup and shutdown period.**

d. **Average plant operation schedule (hours per day, days per week, weeks per year).**

e. **All continuous emissions data reduced and reported in accordance with the District approved CEMS protocol.**

f. **Maximum hourly, maximum daily, total quarterly, and total calendar year emissions of NOx, CO, PM10, VOC and SOx (including calculation protocol).**

g. **Total monthly and rolling 12-month emissions of NOx, CO and PM10 from all permit units.**

h. **Total monthly and rolling 12-month fuel use in the gas turbines and duct burners.**

i. **Average NOx 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.**

j. **Average CO emissions from all startups and shutdowns of the gas turbines, on a per event basis, calculated on a rolling 12-month basis.**

k. **Fuel sulfur content (monthly laboratory analyses, monthly natural gas sulfur content reports from the natural gas supplier(s), or the**

results of a custom fuel monitoring schedule approved by U.S. EPA for compliance with the fuel monitoring provisions of 40 CFR 60 Subpart GG).

l. A log of all excess emissions, including the information regarding malfunctions/breakdowns required by Rule 430.

m. Any permanent changes made in the plant process or production, which would affect air pollutant emissions, and indicate when changes were made.

n. Any maintenance to any air pollutant control system (recorded on an as-performed basis).

Verification: ~~The project owner must submit all ERC documentation to the District and the CPM prior to the start of construction.~~ **The project owner shall submit a Quarterly Operations Report for the preceding calendar quarter by January 30, April 30, July 30 and October 30 of each year. The January 30 report shall include an annual summary of the Quarterly Operations Reports for the preceding year. The reports shall be submitted to the Mojave Desert Air Pollution Control District (District), the United States Environmental Protection Agency (U.S. EPA) and the California Energy Commission Compliance Project Manager (CPM).**

AQ-T18 ~~The project owner shall provide sufficient space and appurtenances within the Heat Recovery Steam Generator to allow the subsequent installation of a high temperature oxidation catalyst. A high temperature oxidation catalyst shall be installed if any VOC or CO limit specified by the above conditions is violated.~~ **Effective May 7, 2016, total fuel use in the two gas turbines and two duct burners (Permit #B007953 combustion turbine generator power block (CT1), Permit #B007954 combustion turbine generator power block (CT2), Permit #B007955 duct burner unit 1 and Permit #B007956 duct burner unit 2)shall not exceed 31,852,800 MMBtu in any rolling 12-month period.**

Verification: ~~If any VOC or CO limit specified by the above conditions is violated, within six (6) weeks the project owner shall submit a plan to install an oxidation catalyst. The catalyst shall be installed and operational within six (6) months of the violation. The following Conditions of Certification apply to the two (2) individual natural gas duct burners (District Permit Numbers: B007954, B007955).~~ **The project owner shall submit the total monthly and rolling 12-month fuel use in the gas turbines and duct burners in each Quarterly Operations Report.**

The following Conditions of Certification apply to duct burner unit 1 (District Permit Number: B007955) and duct burner unit 2 (District Permit Number: B007956)

AQ-DB1 **Operation of the duct burners shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.**

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and Energy Commission.

AQ-~~19~~DB2 The duct burners shall be exclusively fueled with natural gas and 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 make the site available for inspection by representatives of the District, ARB, **U.S.** EPA and ~~the CEC~~**Energy Commission**.

AQ-~~20~~DB3 The duct burners shall not be operated unless the combustion turbine generator with valid District permit B007953 (or B007954), selective catalytic ~~NOx~~ reduction system with valid District permit C007959 (or C007960), and oxidation catalyst **C010832 (or C010833)**~~(if installed)~~ are in operation.

Verification: A summary of fuel use and equipment operation for each duct burner shall be included in each Quarterly Operations Report.

AQ-~~21~~DB4 Fuel use by ~~this equipment~~ **duct burners** shall be recorded and maintained on site for a minimum of five (5) years and shall be provided to District, **ARB, Energy Commission or U.S. EPA** personnel on request.

Verification: The above information shall be recorded and maintained on site for a minimum of five (5) years and shall be provided to District or ~~CEC~~ **Energy Commission** personnel on request.

The following Conditions of Certification apply to the two individual selective catalytic NO_x reduction systems (SCR) (District Permit Numbers: C007959, C007960.)

AQ-SCR1 **Operation of the SCR units shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.**

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and Energy Commission.

AQ-~~22~~SCR2 ~~This equipment~~ **The SCR Units** shall be operated and maintained in strict accord with the recommendations of its manufacturer or supplier and/or sound engineering principles.

Verification: A summary of significant operation and maintenance events for each selective catalytic reduction system shall be included in the Quarterly Operations Reports.

AQ-~~23~~SCR3 ~~This equipment~~**The SCR Units** shall be operated concurrently with the combustion turbine generator with valid MDAQMD permit B007953 (or B007954).

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, **U.S.** EPA and ~~CEC~~**Energy Commission**.

AQ-~~24~~SCR4 Ammonia shall be injected whenever the selective catalytic reduction system has reached or exceeded 550 ~~deg~~**degrees** Fahrenheit. Except during periods of startup and shutdown, ammonia slip shall not exceed 10 ppmvd (corrected to 15% O_2), averaged over three hours.

Verification: The project owner shall maintain a log of the SCR temperatures and the commencement of ammonia injection times. This information shall be recorded and maintained on site for a minimum of five (5) years and shall be provided to District and ~~CEC~~**Energy Commission** personnel on request.

AQ-~~25~~SCR5 Ammonia injection by ~~this equipment~~ **the SCR units** in pounds per hour shall be recorded and maintained on site for a minimum of five (5) years and shall be provided to District**, ARB, Energy Commission or U.S. EPA** personnel on request.

Verification: The above information shall be recorded and maintained on site for a minimum of five (5) years and shall be provided to District and ~~CEC~~ Energy Commission personnel on request.

The following Conditions of Certification apply to the two oxidation catalyst (OC) units (District Permit Numbers: C010832, C010833.)

AQ-OC1 Operation of the OC units shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and Energy Commission.

AQ-OC2 The OC Units shall be operated and maintained in strict accord with the recommendations of its manufacturer or supplier and/or sound engineering principles.

Verification: A summary of significant operation and maintenance events for each oxidation system unit shall be included in the Quarterly Operations Reports.

AQ-OC3 The OC Units shall be operated concurrently with the combustion turbine generator with valid MDAQMD permit B007953 (or B007954).

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and Energy Commission.

The following Conditions of Certification apply to main cooling tower (District Permit Number: B007957) and chiller cooling tower (District Permit Number: B007958)

AQ-CT1 Operation of the cooling towers shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and Energy Commission.

AQ-~~26~~CT2 The cooling towers shall be operated and maintained in strict accord with the recommendations of their manufacturer or supplier and/or sound engineering principles.

Verification: A summary of significant operation and maintenance events for each cooling tower shall be included in the Quarterly Operations Reports.

AQ-~~27~~CT3 ~~The operator shall conduct all required cooling tower water quality tests in accordance with a District-approved test and emissions calculation protocol. Thirty (30) days prior to the first such test the operator shall provide a written test and emissions calculation protocol for District review and approval.~~

~~**Verification:** Thirty (30) days prior to the first such test the operator shall provide a written test and emissions calculation protocol for District and CPM review.~~

~~**AQ-28**~~ The drift rate shall not exceed 0.0006 percent with a maximum circulation rate of 146,000 gallons per minute (gpm) for the Main Cooling Tower and 22,000 gpm for the Chiller Cooling Tower. The maximum hourly PM10 emission rate shall not exceed 0.546 pounds per hour from both cooling towers, as calculated per the written District approved protocol.

Verification: Compliance documentation in accordance with the written District approved protocol shall be submitted to the District and the CPM.

AQ-~~29~~CT4 ~~The operator shall perform weekly tests of the blow-down water quality.~~ **Whenever the power plant is in operation, the operator shall perform tests of the blow-down water quality once in every seven day period at a minimum; to clarify, if at any time during that same seven day period the power plant has run, then the owner operator shall perform blow-down water quality tests.** The operator shall maintain a log that contains the date and result of each blow-down water quality test, and the resulting mass emission rate. This log shall be maintained on site for a minimum of five (5) years and shall be provided to District**, ARB, Energy Commission or U.S. EPA** personnel on request.

Verification: A summary of the results of the weekly blow-down water quality tests and the results of the mass emission rate calculations shall be submitted in the Quarterly Operations Report.

AQ-CT5 **The operator shall conduct all required cooling tower water quality tests in accordance with a District-approved test and emissions calculation protocol. Thirty (30) days prior to the first such test the operator shall provide a written test and emissions calculation protocol for District review and approval.**

Verification: Thirty (30) days prior to the first such test the operator shall provide a written test and emissions calculation protocol for District and CPM review.

AQ-~~30~~CT6 A maintenance procedure shall be established that states how often and what procedures will be used to ensure the integrity of the drift eliminators. This procedure shall be submitted to the District for approval at least thirty (30) days prior to construction and shall be kept on-site and available to District personnel on request.

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, **U.S.** EPA and C~~EC~~**Energy Commission**.

The following Conditions of Certification apply to the non-certified diesel IC engine, emergency fire pump (District Permit Number: E007961), portable diesel IC engine, non-certified, emergency fire pump (District Permit Number: E008981), propane IC engine, emergency generator (District Permit Number: E009492)

AQ-~~31~~IC1 ~~This equipment~~ **The IC engines** shall be installed, operated and maintained in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants. **Unless otherwise noted, the IC engines shall also be operated in accordance with all data and specifications submitted with the application for this permit.**

Verification: A summary of significant operation and maintenance events for the ~~emergency diesel~~ IC engine**s** shall be included in the Quarterly Operations Reports.

~~**AQ-32** The project owner shall maintain a log for this unit, which, at a minimum, contains the information specified below. This log shall be kept current and onsite for a minimum of five (5) years and shall be provided to District personnel on request. At a minimum, the log shall include:~~

~~a. Date of each use or test;~~

~~b. Duration of each test, in minutes;~~

~~c. Fuel consumed during each calendar year, in gallons; and~~

~~d. Fuel sulfur concentration (the project owner may use the supplier s certification of sulfur content if it is maintained as part of this log).~~

~~**Verification:** The above information shall be maintained on-site for a minimum of five (5) years and shall be provided to District and/or CEC personnel on request.~~

~~**AQ-33** This unit shall be limited to use for emergency fire fighting, and as part of a testing program that does not exceed 60 minutes of testing operation per week.~~

~~**Verification:** The above information shall be maintained on-site for a minimum of five (5) years and shall be provided to District and/or CEC personnel on request.~~

~~**AQ-34** The project owner shall use only diesel fuel whose sulfur concentration is less than or equal to 0.05% on a weight per weight basis in this unit.~~

~~**Verification:** The above information shall be maintained on-site for a minimum of five (5) years and shall be provided to District and/or CEC personnel on request.~~

AQ-IC2 The diesel IC engines shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015% (15 ppm) on a weight per weight basis per CARB Diesel or equivalent requirements. The propane IC engine shall only be fired on propane (LPG).

Verification: The above information shall be maintained on-site for a minimum of five (5) years and shall be provided to District and/or Energy Commission personnel on request.

AQ-IC3 A non-resettable hour meter with a minimum display capacity of 9,999 hours shall be installed and maintained on the IC engines to indicate elapsed engine operating time.

Verification: The above information shall be maintained on-site for a minimum of five (5) years and shall be provided to District and/or Energy Commission personnel on request.

AQ-IC4 The diesel IC engines shall be limited to use for emergency power, defined as in response to a fire or due to low fire water pressure. In addition, the diesel IC engine (permit #E007961) shall be operated no more than 20 hours per year for testing and maintenance, excluding compliance source testing. Time required for source testing will not be counted toward the 20 hour per year limit. The portable diesel IC engine (permit #E008981) shall be operated no more than 50 hours per year for testing and maintenance, excluding compliance source testing. Time required for source testing will not be counted toward the 50 hour per year limit.

The propane IC engine shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. In addition, the propane IC engine shall be operated no more than 100 hours per year for testing and maintenance, excluding compliance source testing. Time required for source testing will not be counted toward the 100 hour per year limit.

Verification: The above information shall be maintained on-site for a minimum of five (5) years and shall be provided to District and/or Energy Commission personnel on request.

AQ-IC5 The requirements of section 93115.6 and 93116 of Airborne Toxic Control Measure for Stationary Compression Ignition Engines (ATCM) (Effective October 18, 2007), the hour limits indicated in AQ-IC4, do not apply to in-use emergency fire pump assemblies that are driven directly by stationary diesel-fueled CI engines and only operated the number of hours necessary to comply with the testing requirements of National Fire Protection Association (NFPA) 25 "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 2002 edition, which is incorporated herein by reference.

Verification: The above information shall be maintained on-site for a minimum of five (5) years and shall be provided to District and/or Energy Commission personnel on request.

AQ-IC6 The project owner shall maintain an operations log for the IC engines current and onsite, either at the engine location or at an on-site location, for a minimum of five (5) years, and provide to District, ARB, Energy Commission or U.S. EPA personnel upon request. The log shall include, at a minimum, the information specified below:

a. Date of each use and duration of each use (in hours), using the engines hour meter;

b. Reason for use (testing & maintenance, emergency, required emission testing);

c. Monthly and calendar year operation in terms of fuel consumption (in gallons) and total hours;

d. Monthly and rolling 12-month total CO, NOx and PM10 emissions, calculated based on monthly fuel use and District-approved emission factors; and

e. For diesel IC engines, fuel sulfur concentration (the project owner may use the supplier's certification of sulfur content if it is maintained as part of this log).

Verification: The above information shall be maintained on-site for a minimum of five (5) years and shall be provided to District and/or Energy Commission personnel on request.

AQ-IC7 The project owner shall conduct inspections in accord with the following schedule. All inspections must occur at least annually regardless of operating hours.

a. Change oil and filter every 500 hours of operation or annually, whichever comes first, or use an oil change analysis program to extend oil change frequencies per the requirements in 40 CFR 63.6625(i);

b. For diesel IC engines, inspect air cleaner every 1,000 hours of operation or annually, whichever comes first. For propane IC engine, inspect spark plugs every 1,000 hours of operation or annually, whichever comes first; and

c. inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Verification: The above information shall be maintained on-site for a minimum of five (5) years and shall be provided to District and/or Energy Commission personnel on request.

AQ-IC8 The project owner shall minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

Verification: The above information shall be maintained on-site for a minimum of five (5) years and shall be provided to District and/or Energy Commission personnel on request.

AQ-IC9 The diesel IC engine (permit #E007961) is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines Title 17 CCR 93115 and 40 CFR 63 Subpart ZZZZ (RICE NESHAPs).

The portable diesel IC engine (permit #E008981) shall be regulated as a stationary diesel CI engine, as clarified in the definition of a portable source in 93115.4(a)(72). As a stationary source, this portable diesel IC engine is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Portable Compression Ignition Engines Title 17 CCR 93116 and 40 CFR 63 Subpart ZZZZ (RICE NESHAPs).

The propane IC engine is subject to the requirements of 40 CFR 63 Subpart ZZZZ (RICE NESHAPs).

In the event of conflict between conditions and the referenced regulatory citations, the more stringent requirements shall govern.

Verification: The above information shall be maintained on-site for a minimum of five (5) years and shall be provided to District and/or Energy Commission personnel on request.