

DOCKETED

Docket Number:	07-AFC-09C
Project Title:	Canyon Power Plant - Compliance
TN #:	203935
Document Title:	Canyon Power Plant Signed Order Approving a Petition to Amend Air Quality Conditions of Certification
Description:	To Increase Usage of Turbines, Amend Emission Factor, and Lower Operation Hours for Black Start Engine
Filer:	Jonathan Fong
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	3/23/2015 7:59:11 AM
Docketed Date:	3/23/2015

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



STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of:) Order No. 15-0311-4
)
CANYON POWER PLANT) Docket No. 07-AFC-09C
)
SOUTHERN CALIFORNIA PUBLIC POWER AUTHORITY) ORDER APPROVING Petition to Amend) the Air Quality Conditions of Certification) to increase usage of turbines, amend) emission factor, and lower operation) hours for black start engine

On September 29, 2014, the Southern California Public Power Authority (SCPPA) submitted a petition to the California Energy Commission (Energy Commission) requesting to amend the Energy Commission’s Decision (Decision) for the Canyon Power Plant (CPP) project. The petition requests to revise Air Quality Conditions of Certification **AQ-1**, **AQ-2**, and **AQ-20** in order to increase the allowable usage of each of the four turbines, amend the emission factor used to demonstrate compliance with the PM10 emission limits, and lower the allowable operation hours for the black start engine.

STAFF RECOMMENDATION

Energy Commission staff (staff) reviewed SCPPA’s petition and find that it complies with the requirements of Title 20, Section 1769(a) of the California Code of Regulations and recommends approval of their request for amendment. Staff also recommends the modification of Air Quality Conditions of Certification: **AQ-SC7**, **AQ-1**, **AQ-2**, **AQ-4**, **AQ-10**, **AQ-11**, **AQ-12**, **AQ-14**, **AQ-16**, **AQ-17**, **AQ-20**, **AQ-22**, **AQ-23**, **AQ-24**, **AQ-26**, **AQ-31**; the deletion of Air Quality Conditions of Certification **AQ-3**, **AQ-8**, and **AQ-15**; and, the addition of Air Quality Conditions of Certification **AQ-32**, **AQ-33** and **AQ-34**.

ENERGY COMMISSION FINDINGS

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

- The proposed modification(s) would not change the findings in the Energy Commission’s Final Decision issued on March 17, 2010;
- There would be no new or additional unmitigated, significant environmental impacts associated with the proposed modification(s);

- The facility would remain in compliance with all applicable laws, ordinances, regulations, and standards with the modifications to the conditions set forth below;
- The proposed modification(s) would be beneficial to the public, and/or the applicant, because the proposed modifications would allow the CPP to continue to satisfy the city of Anaheim’s resource adequacy obligation as a load serving entity with the California Integrated Service Operators CAISO.
- The proposed modification(s) are justified because there has been a substantial change in circumstances since the Energy Commission certification, in that the CAISO has adopted new criteria as part of their Flexible Resource Adequacy Criteria and Must Offer Obligation initiative. The initiative requires qualifying base ramping resources to be capable of starting two times per day and operating at a minimum of six hours per day.

CONCLUSION AND ORDER

The California Energy Commission hereby adopts staff’s recommendation and approves the following changes to the Commission Decision for the Canyon Power Plant’s Air Quality Conditions of Certification.

CONDITIONS OF CERTIFICATION

New language is shown as bold and underlined, and deleted language is shown in strikeout.

AQ-SC7 ~~The project owner shall surrender the ERCs for SOx, VOC and PM10 as listed in the table below or a modified list, as allowed by this condition. An additional pound per day of VOC and SO₂ ERCs shall be identified prior to initiation of construction. If additional or revised ERCs are submitted, the project owner shall submit an updated table including the additional or revised ERCs to the CPM. The project owner shall request CPM approval for any substitutions, modifications, or additions of credits listed.~~

Certificate Number(s)	Amount (lbs/day)	Pollutant
AQ008840	10	VOC
AQ008842	10	VOC
AQ008862	4	SO ₂
AQ008907, 09, 11, 13, 15, 17, 19, 21	1	PM10
AQ008864, 66, 68, 70, 72, 74, 76, 78	2	PM10
AQ008844	4	PM10
AQ008846	4	PM10
AQ009059, 61, 63, 65, 67, 69, 71, 73	6	PM10
AQ008891, 93, 95, 97, 99, 01, 03, 05	7	PM10

AQ009027, 29, 31, 33, 35, 37, 39, 41	2	PM10
AQ009043, 45, 47, 49, 51, 53, 55, 57	19	PM10
AQ009325, 27, 29, 31, 33, 35, 37, 39	2	PM10
AQ008838	4	PM10

The CPM, in consultation with the District, may approve any such change to the ERC list provided that the project remains in compliance with all Conditions of Certification, and applicable laws, ordinances, regulations, and standards, the requested change(s) will not cause the project to result in a significant environmental impact, and the SCAQMD confirms that each requested change is consistent with applicable federal and state laws and regulations.

The project owner shall provide emission reductions in the form of offsets or emission reductions credits (ERCs) in the quantities of at least 7.22 tons per year (tpy) VOC, 9.83 tpy PM10, and 1.94 tpy SOx emissions. The project owner shall demonstrate that the reductions are provided in the form required by the South Coast Air Quality Management District.

Verification: The project owner shall provide the ERC certificate information for the additional pound per day of VOC and SO₂ ERCs as required by the District and this condition at least 30 days prior to initiating construction. This information will provide the following information for each of the additional ERC certificates: 1) the location/address of the reduction; 2) the date of reduction; and 3) the method of reduction.

The project owner shall submit to the CPM the NSR Ledger Account from the District, showing that the project's offset requirements have been met, 30 days prior to turbine first fire for the traditional ERCs. If the CPM approves a substitution or modification to the list of ERCs, the CPM shall file a statement of the approval with the project owner and commission docket. The CPM shall maintain an updated list of approved ERCs for the project.

The project owner shall submit to the CPM records showing that the project's offset requirements have been met.

Gas Turbines (D1, D7, D13 and D19)

(note: the following conditions are per turbine unless otherwise specified)

The following conditions are applicable to the General Electric LM6000PC Sprint, Simple Cycle Natural Gas Turbines.

AQ-1 The project owner shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSION LIMIT
-------------	----------------

VOC	Less than or equal to 429 412 lbs IN ANY CALENDAR MONTH
PM10	Less than or equal to 299 540 lbs IN ANY CALENDAR MONTH
SOx	Less than or equal to 34 108 lbs IN ANY CALENDAR MONTH
<u>VOC</u>	<u>Less than or equal to 3,608 lbs IN ANY YEAR</u>
<u>PM10</u>	<u>Less than or equal to 4,822 lbs IN ANY YEAR</u>
<u>SOx</u>	<u>Less than or equal to 971 lbs IN ANY YEAR</u>

For the purposes of this condition, the above emission limits shall be based on the emissions from a single turbine.

~~The turbine shall not commence with normal operation until the commissioning process has been completed. Normal operation commences when the turbine is able to supply electrical energy to the power grid as required under contract with the relevant entities. The District shall be notified in writing once the commissioning process for each turbine is completed.~~

~~Normal operation may commence in the same calendar month as the completion of the commissioning process provided the turbine is in compliance with the above emission limits.~~

The project owner shall calculate the monthly emissions for VOC, PM10, and SOx using the equation below.

Monthly Emissions, lbs/month = (Monthly fuel usage in mmscf/month) *
(Emission factors indicated below)

~~For commissioning, the emission factors shall be as follows: VOC, 3.76 lbs/mmcf; PM10, 6.03 lbs/mmcf; and SOx, 0.68 lbs/mmcf.~~

For normal operation, **including startups and shutdowns**, the emission factors shall be as follows: VOC, 2.59 lbs/mmcf; PM10, 6.03 **3.40** lbs/mmcf; and SOx, 0.68 lbs/mmcf.

For maintenance operations, the emission factors shall be as follows: VOC, 2.64 lbs/mmcf; PM10, 3.52 lbs/mmcf; and SOx, 0.68 lbs/mmcf.

~~For a month during which both commissioning and normal operation take place, the monthly emissions shall be the total of the commissioning emissions and the normal operation emissions.~~

For the purposes of this condition, the annual emission limit shall be defined as a period of twelve (12) consecutive months determined on a rolling basis with a new 12-month period beginning on the first day of each calendar month.

The project owner shall maintain records in a manner approved by the District to demonstrate compliance with this condition and the records shall be made

available to District personnel upon request. **The records shall include, but not be limited to, natural gas usage in a calendar month.**

[RULE 1303(b)(2)–Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition: D1, D7, D13, D19]

Verification: The project owner shall submit all emission calculations, fuel use, CEM records and a summary demonstrating compliance of **with** all emission limits stated in this Condition to the CPM in the Quarterly Operation Report. (AQ-SC10).

AQ-2 **Mass emission concentrations from the turbines after abatement shall not exceed 2.5 ppmv for oxides of nitrogen (NOx), 4.0 ppmv for carbon monoxide (CO), and 2 ppmv for volatile organic compounds (VOC).** The 2.5 ppm NOx, 4.0 ppm CO, and 2.0 ppm ROG emission limits shall not apply during turbine commissioning, start-up, and shutdown periods, **and maintenance** periods. Commissioning shall not exceed 156 hours total. Each start-up shall not exceed 35 minutes. Each shutdown shall not exceed 10 minutes. **The Each** turbine shall be limited to a maximum of 240 **540** start-ups per year **and a maximum of 10 hours of maintenance operations per year.**

NOx, CO, and ROG emissions for an hour that includes a start-up shall not exceed 14.27 lbs for NOx, 11.6 lbs for CO, and 1.29 lbs for ROG and for the hour that includes a shutdown 4.07 lbs for NOx, 4.15 for CO, and 1.27 lbs for ROG. For the purpose of defining an hour that includes a start-up, the period begins when natural gas is first introduced into the turbine and ends after 60 minutes. **For the purpose of defining an hour that includes a shutdown, the period begins 60 minutes prior to the minute that natural gas stops flowing into the turbine.**

For an hour that includes a start-up and shutdown, the start-up emissions limit is applicable. The worst case includes a full start-up sequence of 35 minutes, followed immediately by a turbine trip, a five minute purge period during which no fuel is burned, and the first 20 minutes of restart sequence.

NOx, CO, and ROG emissions for maintenance operations shall not exceed 44.0 lbs for NOx, 19.4 lbs for CO and 1.25 lbs for ROG, in any hour.

The project owner shall maintain records in a manner approved by the District to demonstrate compliance with this condition and the records shall be made available to District personnel upon request.

For the purposes of this condition, start-up shall be defined as the start-up process to bring the turbine to full successful operation.

For the purposes of this condition, shutdown shall be defined as a reduction in turbine load ending in a period of zero fuel flow.

For the purposes of this condition, maintenance shall be defined as the optimizing and rebalancing of the NH₃ grid or catalyst modules, and the retuning and testing of the turbine control systems.

[RULE 1703(a)(2) – PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005; RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: D1, D7, D13, D19]

Verification: The project owner shall provide start-up and shutdown occurrence and duration data as part as part of the Quarterly Operation Report (**AQ-SC10**). The project owner shall make the site available for inspection of the commissioning and start-up/shutdown records by representatives of the District, ARB and the Commission.

AQ-3 ~~The 98.16 lbs/mmcf NO_x emission limit(s) shall only apply during turbine commissioning and the 11.53 lbs/mmcf NO_x emission limit(s) shall only apply after turbine commissioning during the interim reporting period to report RECLAIM emissions. The interim reporting period shall not exceed 12 months from entry into RECLAIM.~~

~~[RULE 2012, 5-6-2005]~~

~~[Devices subject to this condition: D1, D7, D13, D19]~~ **Deleted**

~~**Verification:** The project owner shall provide start-up and shutdown occurrence and duration data as part as part of the Quarterly Operation Report (**AQ-SC10**). The project owner shall make the site available for inspection of the commissioning and start-up/shutdown records by representatives of the District, ARB and the Commission.~~

AQ-4 The 2.5 ppmv NO_x emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry.

The 4.0 ppmv CO emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry.

The 2.0 ppmv ROG emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry.

~~[RULE 1703(a)(2) – PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005 **6-3-2011**]~~

~~[RULE 1703(a)(2) – PSD-BACT, 10-7-1988 **RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002**]~~

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: D1, D7, D13, D19]

Verification: The project owner shall submit to the CPM emissions data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC10**).

AQ-8 The project owner shall conduct source test(s) for the pollutant(s) identified below.

Pollutant	Method	Averaging Time	Test Location
NOx	District Method 100.1	1 hour	Outlet of SCR
CO	District Method 100.1	1 hour	Outlet of SCR
SOx	AQMD Laboratory Method 307.91	N/A	Fuel Sample
VOC	District Method 25.3	1 hour	Outlet of SCR
PM10	District Method 5	4 hours	Outlet of SCR
Ammonia	District Method 207.1 and 5.3 or U.S.EPA Method 17	1 hour	Outlet of SCR

The test shall be conducted after AQMD approval of the source test protocol, but no later than 180 days after initial start-up. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted in accordance with AQMD approved test protocol. The protocol shall be submitted to the AQMD engineer no later than 45 days before the proposed test date and shall be approved by the AQMD before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (cfh), the flue gas flow rate, and the turbine generating output in MW.

The test shall be conducted when this equipment is operating at loads of 100, 75, and 50 percent, with the exception of PM10 testing. For PM10, the test shall be conducted when this equipment is operating at a load of 100 percent.

For natural gas fired turbines only, VOC compliance shall be demonstrated as follows: a) Stack gas samples are extracted into Summa canisters maintaining a final canister pressure between 400-500 mm Hg absolute, b) Pressurization of canisters are done with zero gas analyzed/certified to contain less than 0.05 ppmv total hydrocarbon as carbon, and c) Analysis of canisters are per U.S.EPA Method TO-12 (with preconcentration) and temperature of canisters when extracting samples for analysis is not below 70 degrees F.

The use of this alternative method for VOC compliance determination does not mean that it is more accurate than AQMD Method 25.3, nor does it mean that it may be used in lieu of AQMD Method 25.3 without prior approval except for the determination of compliance with the VOC BACT level of 2.0 ppmv calculated as carbon for natural gas fired turbines.

~~Because the VOC BACT level was set using data derived from various source test results, this alternate VOC compliance method provides a fair comparison and represents the best sampling and analysis technique for this purpose at this time. The test results shall be reported with two significant digits.~~

~~For the purpose of this condition, alternative test method may be allowed for each of the above pollutants upon concurrence of AQMD, U.S.EPA and ARB.~~

~~[RULE 1303(a)(1) BACT, 5-10-1996; RULE 1303(a)(1) BACT, 12-6-2002; RULE 1303(b)(2) Offset, 5-10-1996; RULE 1303(b)(2) Offset, 12-6-2002; RULE 1703(a)(2) PSD BACT, 10-7-1988; RULE 2005, 5-6-2005]~~

~~[Devices subject to this condition: D1, D7, D13, D19] Deleted~~

Verification: ~~The project owner shall submit the proposed protocol for the initial source tests 45 days prior to the proposed source test date to both the SCAQMD and CPM for approval. The project owner shall submit source test results no later than 60 days following the source test date to both the SCAQMD and CPM. The project owner shall notify the SCAQMD and CPM no later than 10 days prior to the proposed initial source test date and time.~~

AQ-10 The project owner shall conduct source test(s) for the pollutant(s) identified below.

Pollutant	Method	Averaging Sampling Time	Test Location
SOx	AQMD Laboratory Method 307-91	N/A	Fuel Sample
VOC	District Method 25.3	1 hour	Outlet of SCR
PM40	District Method <u>5.1</u>	4 hours	Outlet of SCR

The PM emissions testing shall be conducted using District Method 5.1 as described in Section 3.3 of the Delta Air Quality Services, Inc. protocol, dated September 27, 2013 and approved by the SCAQMD on October 10, 2013. The testing shall consist of one run with a sampling time of four hours minimum for the run. The PM emissions results will be considered to be a surrogate for the PM10 emissions.

As source testing methods and techniques evolve, a new protocol may be submitted and evaluated by the AQMD for approval in accordance with the procedure described below.

For PM (surrogate for PM10), the tests shall be conducted at least once every 18 months in order to verify compliance with the emission rate of 1.67 lb/hr PM10 at maximum load during normal operations. If all tests conducted over a three-year period comply with the 1.67 lb/hr limit for

PM10 the facility shall have the option of reducing the source test frequency to once every three years.

For SOx and VOC, the test shall be conducted at least once every three years. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (cfh), the flue gas flow rate, and the turbine generating output in MW.

The test shall be conducted in accordance with AQMD approved test protocol. The protocol shall be submitted to the AQMD engineer no later than 45 days before the proposed test date and shall be approved by the AQMD before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted when this equipment is operating at loads of 100, 75, and 50 percent, with the exception of **PM PM10 testing (surrogate for PM10)**. For **PM PM10**, the test shall be conducted when this equipment is operating at a load of 100 percent.

For natural gas fired turbines only, VOC compliance shall be demonstrated as follows: a) Stack gas samples are extracted into Summa canisters maintaining a final canister pressure between 400-500 mm Hg absolute, b) Pressurization of canisters are done with zero gas analyzed/certified to contain less than 0.05 ppmv total hydrocarbon as carbon, and c) Analysis of canisters are per U.S.EPA Method TO-12 (with preconcentration) and temperature of canisters when extracting samples for analysis is not below 70 degrees F.

The use of this alternative method for VOC compliance determination does not mean that it is more accurate than AQMD Method 25.3, nor does it mean that it may be used in lieu of AQMD Method 25.3 without prior approval except for the determination of compliance with the VOC BACT level of 2.0 ppmv calculated as carbon for natural gas fired turbines.

Because the VOC BACT level was set using data derived from various source test results, this alternate VOC compliance method provides a fair comparison and represents the best sampling and analysis technique for this purpose at this time. The test results shall be reported with two significant digits.

For the purposes of this condition, **an** alternative test method may be allowed for each of the above pollutants upon concurrence of AQMD, U.S.EPA, and ARB.

The test shall be conducted for compliance verification of the BACT VOC 2.0 ppmv limit.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; ~~RULE 1703(a)(2)-PSD-BACT, 10-7-1988~~]

[Devices subject to this condition: D1, D7, D13, D19]

Verification: The project owner shall submit the proposed protocol for the source tests 45 days prior to the proposed source test date to both the SCAQMD and CPM for approval. The project owner shall notify the SCAQMD and CPM no later than 10 days prior to the proposed source test date and time. The project owner shall submit source test results no later than 60 days following the source test date to both the SCAQMD and CPM.

AQ-11 The project owner shall provide to the District a source test report in accordance with the following specifications:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

Emission data shall be expressed in terms of concentration (ppmv) corrected to 15 percent oxygen (dry basis), mass rate (lbs/hr), and lbs/mmcf. In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains/dscf.

All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (dscfm) and dry actual cubic feet per minute (dacfm).

All moisture concentration shall be expressed in terms of percent corrected to 15 percent oxygen.

Source test results shall also include the oxygen levels in the exhaust, fuel flow rate (CFH), the heating content of the fuel, the flue gas temperature, and the generator power output (MW) under which the test was conducted.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; ~~RULE 1703(a)(2)-PSD-BACT, 10-7-1988~~; RULE 2005, 5-6-2005]

[Devices subject to this condition: D1, D7, D13, D19]

Verification: The project owner shall submit source test results no later than 60 days following the source test date to both the SCAQMD and CPM. The project owner shall notify the SCAQMD and CPM no later than 10 days prior to the proposed source test date and time.

AQ-12 The project owner shall install and maintain a CEMS to measure the following parameters:

NOx concentration in ppmv and CO concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

The CO CEMS shall be installed and operating no later than 90 days after initial startup of the turbine, in accordance with an approved AQMD Rule 218 CEMS plan application. The project owner shall not install the CEMS prior to receiving initial approval from AQMD. Within two weeks of the turbine start-up, the project owner shall provide written notification to the District of the exact date of start-up.

The NOx CEMS shall be installed and operating no later than 90 days after initial start-up of the turbine and shall comply with the requirements of Rule 2012. During the interim period between the initial start-up and the provisional certification date of the CEMS, the project owner shall comply with the monitoring requirements of Rule 2012(h)(2) and 2012(h)(3). Within two weeks of the turbine start-up date, the project owner shall provide written notification to the District of the exact date of start-up.

The CO CEMS shall be installed and operated to measure CO concentrations over a 15 minute averaging time period.

The NOx CEMS shall be installed and operating (for BACT purposes only) no later than 90 days after initial start-up of the turbine.

~~[RULE 1703(a)(2) PSD-BACT, 10-7-1988; RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 218, 8-7-1981; RULE 218, 5-14-1999]~~

~~[RULE 1703(a)(2) PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005; RULE 2012, 5-6-2005]~~

[Devices subject to this condition: D1, D7, D13, D19]

Verification: Within 30 days of certification, the project owner shall notify the CPM of the completion of the certification process for the CEMS.

AQ-14 ~~This equipment shall not be operated unless the project owner demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the project owner demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.~~

~~To comply with this condition, the project owner shall prior to the 1st compliance year hold a minimum NOx RTCs of 9,677 lbs/yr. This condition shall apply during the 1st 12 months of operation, commencing with the initial operation of the gas turbine.~~

~~To comply with this condition, the project owner shall, prior to the beginning of all years subsequent to the 1st compliance year, hold a minimum of 6,886 lbs/yr of NOx RTCs for the operation of the gas turbine.~~

~~In accordance with Rule 2005(f), unused RTCs may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year.~~

This equipment shall not be operated unless the facility holds 15,017 pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from this initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 15,017 pounds of NOx RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

The condition shall apply to each turbine individually.

[RULE 2005, 5-6-2007**6-3-2011**]

[Devices subject to this condition: D1, D7, D13, D19]

Verification: The project owner shall provide confirmation from the District 30 days prior to first fire that sufficient RTCs to satisfy the District's requirements for the first year of operation as provided in this condition have been obtained. The project owner shall submit evidence of sufficient RTCs to the CPM demonstrating compliance with this condition for each compliance year after the 1st compliance year, at least 15 days prior to the commencement of that compliance year.

AQ-15 — ~~The project owner shall keep records in a manner approved by the District, for the following parameter(s) or item(s):~~

~~Natural gas fuel use during the commissioning period.~~

~~Natural gas fuel use after the commissioning period and prior to CEMS certification.~~

~~Natural gas fuel use after CEMS certification.~~

~~[RULE 2005, 5-6-2005]~~

~~[Devices subject to this condition: D1, D7, D13, D19]~~

Verification: ~~The project owner shall submit all fuel usage records as part of the Quarterly Operation Report (AQ-SC10).~~

AQ-16 **NH₃ emissions will be limited to 5 ppmv.** The 5 ppmv NH₃ emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry basis. The project owner shall calculate and continuously record the NH₃ slip concentration using the following equation.

District Requirement

NH₃ (ppmv) = $[a - b \cdot c / 1E6] \cdot 1E6 / b$; where

a = NH₃ injection rate (lbs/hr)/17(lbs/lbs-mol)

b = dry exhaust gas flow rate (scf/hr)/385.3 (scf/lbs-mol)

c = change in measured NO_x across the SCR (ppmvd at 15 percent O₂)

The project owner shall install and maintain a NO_x analyzer to measure the SCR inlet NO_x ppmv accurate to plus or minus 5 percent calibrated at least once every twelve months.

The NO_x analyzer shall be installed and operated within 90 days of initial start-up.

The project owner shall use the above described method or another alternative method approved by the District's Executive Officer.

The ammonia slip calculation procedures described above shall not be used for compliance determination or emission information without corroborative data using an approved reference method for the determination of ammonia.

[RULE 1303(a)(1) – BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: C4, C10, C16, C22]

Verification: The project owner shall include ammonia slip concentrations averaged on an hourly basis as part of the Quarterly Operation Report (**AQ-SC10**). The project owner shall submit all SCR inlet NO_x analyzer calibration results to the CPM within 60 days of the calibration date. Exceedances of the ammonia limit shall be reported and chronic exceedances of the ammonia slip limit, defined as occurring more than 10

percent of the operation for any single HRSG exhaust stack, shall be identified by the project owner and confirmed by the CPM within 60 days of the submitted Quarterly Operation Report (**AQ-SC10**) that indicates chronic exceedances. If a chronic exceedance is identified and confirmed, the project owner shall work in conjunction with the CPM to develop a reasonable compliance plan to investigate and redress the chronic exceedance of the ammonia slip limit within 60 days of the above confirmation.

AQ-17 The project owner shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia.

The project owner shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The calibration records shall be kept on site and made available to District personnel upon request.

The ammonia injection system shall be placed in full operation as soon as the minimum temperature at the outlet to the SCR reactor is reached. The minimum temperature is 540 degrees F.

The ammonia injection rate shall remain between ~~6.83 gal/hr and 16 gal/hr~~ **52.32 lb/hr and 122.57 lb/hr.**

Continuously record shall be defined as recording at least once every hour and shall be calculated based upon the average of the continuous monitoring for that hour.

[RULE 1303(a)(1) – BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1703(a)(2)-PSD-BACT, 10-7-1988; RULE 2005, 5-6-2005]

[Devices subject to this condition: C4, C10, C16, C22]

Verification: The project owner shall submit to the CPM no less than 30 days after installation, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the appropriate device has been installed and is functioning properly. The project owner shall submit annual calibration results within 30 days of their successful completion and shall make the records required under the condition available for inspection by representatives of the District, ARB, and the Commission.

Black Start Diesel Engine (D25)

AQ-20 The project owner shall limit the operating time to no more than ~~200~~ **50** hour(s) in any one year.

The ~~200~~ **50** hours in any one year shall include no more than 50 hours in any one year for maintenance and performance testing and no more than 4.2 hours in any one month for maintenance and performance testing.

The duration of each test shall not exceed 38 minutes in any one hour.

[RULE 1110.2, 2-1-2008; **RULE 1110.2, 9-7-2012**; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 3-7-2008; RULE 1470, 6-1-2007; RULE 2012, 5- 6-2005; **40 CFR 60 Subpart III, 1-30-2013**; CA PRC CEQA, 11-23-1970; CA PRC CEQA, 11-23-1970]

[Devices subject to this condition: D25]

Verification: The project owner shall submit all dates of operation, elapsed time in hours, and the reason for each operation in the Quarterly Operation Report (**AQ-SC10**).

AQ-22 The project owner shall operate and maintain this equipment according to the following requirements:

The operation of this engine ~~beyond the 50 hours per year allotted for maintenance and performance testing~~ **for emergency use** shall be allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage, provided that the utility distribution company has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a utility service block that is subject to the rotating outage.

Engine operation shall be terminated immediately after the utility distribution company advises that a rotating outage is no longer imminent or in effect.

This engine shall be operated for the primary purpose of providing a back up source of power to start a turbine.

[RULE 1110.2, 2-1-2008; **RULE 1110.2, 9-7-2012**; RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 3-7-2008; RULE 1470, 6-1-2007; RULE 2012, 5- 6-2005]

[Devices subject to this condition: D25]

Verification: The project owner shall submit all dates of operation, elapsed time in hours, and the reason for each operation in the Quarterly Operation Report (**AQ-SC10**).

AQ-23 The project owner shall operate and maintain this equipment according to the following specifications:

The project owner shall operate the diesel particulate filter system only with an operational HiBACK data logging and alarm system with backpressure and temperature monitors.

The HiBACK data logging and alarm system shall be programmed to provide a red warning signal and an audible alarm, whenever the engine backpressure reaches the maximum allowable backpressure of 40 inches of water. The engine backpressure shall not exceed 40 inches of water in operation.

The engine shall be operated at the load level required to achieve an engine exhaust gas temperature of 572 degrees F (300 degrees C) for passive regeneration of the diesel particulate filter for at least 30 percent of the operating time.

The engine shall not be operated below the passive regeneration temperature of 572 degrees F for more than 240 consecutive minutes.

The project owner shall regenerate the diesel particulate filter after every 12 cold starts or whenever a yellow warning signal indicating the backpressure is 10 percent below the maximum allowable backpressure of 40 inches of water is received from the HiBACK alarm system, whichever occurs first. Filter regeneration is complete when the backpressure monitoring system indicates a normal backpressure reading.

The engine shall be shut down and the diesel particulate filter shall be cleaned whenever the backpressure reaches the maximum backpressure limit of 40 inches water. Cleaning shall be performed according to the manufacturer's recommendations in the installation and maintenance manual.

After every 200 hours of normal engine operation, the project owner shall inspect the integrity of the diesel particulate filter and, if necessary, replace it.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **40 CFR 60 Subpart III, 1-30-2013**]

[Devices subject to this condition: D25]

Verification: The project owner shall submit to the CPM no less than 30 days after installation, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the appropriate devices have been installed and are functioning properly. The project owner shall maintain engine maintenance records tests how compliance with the maintenance requirements of this condition and shall make these records available for inspection by representatives of the District, ARB, and the Commission.

AQ-24 ~~This equipment shall not be operated unless the project owner demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the project owner demonstrates to the Executive Officer that, at the commencement of each~~

~~compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.~~

~~To comply with this condition, the project owner shall prior to the 1st compliance year hold a minimum NOx RTCs of 2412 lbs/yr. This condition shall apply during the 1st 12 months of operation, commencing with the initial operation of the black start engine.~~

~~To comply with this condition, the project owner shall, prior to the beginning of all years subsequent to the 1st compliance year, hold a minimum of 2412 lbs/yr of NOx RTCs for operation of the black start engine.~~

~~In accordance with Rule 2005(f), unused RTC's may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the 1st compliance year.~~

This equipment shall not be operated unless the facility holds 603 pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 603 pounds of NOx RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[RULE 2005, 5-6-2005]

[Devices subject to this condition: D25]

Verification: The project owner shall provide confirmation from the District 30 days prior to first fire that sufficient RTCs to satisfy the District's requirements for the first year of operation as provided in this condition have been obtained. The project owner shall submit evidence of sufficient RTCs to the CPM demonstrating compliance with this condition for each compliance year after the 1st compliance year, at least 15 days prior to the commencement of that compliance year.

AQ-26 The project owner shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

The project owner shall maintain records of diesel particulate filter inspections, replacements, and cleaning.

The project owner shall maintain monthly records of the exhaust temperature, engine backpressure, and date and time for the duty cycle of the engine as downloaded from the HiBACK data logging and alarm system.

All records shall be maintained on file for a minimum of five years and made available to District personnel upon request.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **40 CFR 60 Subpart IIII, 1-30-2013**]

[Devices subject to this condition: D25]

Verification: The project owner shall make records required by this condition available for inspection by representatives of the District, ARB, and the Commission.

Facility Conditions

AQ-31 The project owner shall not use **purchase** diesel fuel containing sulfur compounds in excess of 15 ppm by weight as supplied by the supplier.

The project owner shall not use fuel oil containing sulfur compounds in excess of 0.05 percent by weight.

~~Material safety data sheets for the diesel fuel shall be kept current and made available to District personnel upon request.~~

[RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

Verification: The project owner shall make the diesel fuel material data sheets available for inspection by representatives of the District, ARB, and the Energy Commission.

AQ-32 **The project owner shall not use diesel containing the following specified compounds:**

<u>Compound</u>	<u>Range</u>	<u>PPM By Weight</u>
<u>Sulfur</u>	<u>Greater than</u>	<u>15</u>

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002
RULE 1303(b)(2)-Offsets, 5-10-1996; RULE 1303(B)(2)-BACT, 12-6-2002;
CFR 60 Subpart IIII, 1-30-20130]**

[Devices subject to this condition: D25]

Verification: The project owner shall make the diesel fuel material data sheets available for inspection by representatives of the District, ARB, and the Energy Commission.

AQ-33 **The project owner shall operate and maintain this equipment according to the following requirements:**

Removal of the diesel particulate filter media for cleaning may only occur under the following conditions:

- A. The internal combustion engine shall not be operated for maintenance and testing or any other non-emergency use while the diesel particulate filter media is removed; and**
- B. The diesel particulate filter media shall be returned and re-installed within 10 working days from the date of removal; and**
- C. The owner or operator shall maintain records indicating the date(s) the diesel particulate filter media was removed for cleaning and the date(s) the filter media was re-installed. Records shall be retained for a minimum of five years.**

[RULE 1470, 5-4-2012]

[Devices subject to this condition: D25]

Verification: The project owner shall submit all fuel maintenance records as part of the Quarterly Operation Report (AQ-SC10).

AQ-34 **The project owner shall operate and maintain this equipment according to the following requirements:**

The project owner shall operate and maintain the stationary engine and diesel particulate filter according to the manufacturer's written emission-related instructions (or procedures developed by the operator that are approved by the engine manufacturer), change only those emission-related settings that are permitted by the manufacturer, and meet the requirements of 40 CFR 89,94 and/or 1068, as they apply.

The project owner shall comply with the emission standards specified in 40 CFR 60.4205(b) by purchasing an engine certified to the emission standards in 40 CFR 60.4205(b), as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications.

[40 CFR 60 Subpart IIII, 1-30-2013]

[Devices subject to this condition: D25]

Verification: The project owner shall submit all fuel maintenance records as part of the Quarterly Operation Report (AQ-SC10).

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 March 11, 2015.

AYE: Weisenmiller, McAllister, Hochschild, Scott

NAY: None

ABSENT: Douglas

ABSTAIN: None



Harriet Kallemeyn,
Secretariat