

Bay Area Air Quality Management District

939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

Permit Evaluation and Statement of Basis for INITIAL MAJOR FACILITY REVIEW PERMIT

**for
Marsh Landing Generating Station
Facility #B9169**

Facility Address:

3201-C Wilbur Avenue
Antioch, CA 94509

Mailing Address:

PO Box 192, 696 West 10th Street
Pittsburg, CA 94565

August 2015

Application Engineer: Anne C. Werth
Site Engineer: Brian K. Lusher

Application: 25894

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Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a Phase II Acid Rain facility as defined by BAAQMD Regulation 2-6-217. It is an Acid Rain facility because it burns fossil fuel, serves a generator that is over 25 MW that is used to generate electricity for sale, and was built after November 15, 1990. It is a "major facility" for CO as defined by BAAQMD Regulation 2-6-212 because it has the "potential to emit," as defined by BAAQMD Regulation 2-6-218, more than 100 tons per year of CO.

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is B9169.

Application 25894 is for the initial Title V permit for this facility.

B. Facility Description

This facility is a peaking power plant located at 3201-C in Antioch California. The Permit to operate was issued on September 5, 2013 under application #18404 for a 760-megawatt "peaking" power plant to provide power and T&D (transmission and distribution) support to the electric grid during periods of high electricity demand. The Marsh Landing facility is adjacent to the retired Contra Costa Power Plant at 3201 Wilbur Avenue. The two sites have the same corporate parent, NRG Energy, but are operated as separate and independent facilities. Contra Costa Power Plant was retired on April 30, 2013. The Marsh Landing facility began commercial operation on May 1, 2013.

The Marsh Landing facility consists of four Siemens SGT6-5000F simple-cycle gas turbines, two natural gas fired preheaters, and associated equipment. The power plant operates up to 20% of the year depending on the demand for electricity in the region. The California Independent System Operator (Cal ISO) is responsible for dispatching the plant to meet electrical demand. The power plant provides standby power capacity for grid stability and the plant is using simple-cycle turbines for this purpose. The simple-cycle turbines are well suited for peaking power plants that may not run for an extended period of time since this type of unit does not have a steam turbine that would need to be kept warm to avoid equipment damage.

The facility also includes an Emergency Standby Diesel Engine Generator Set as well as an Emergency Standby Diesel Fire Pump Engine. The generator set will allow the facility to restore generation in the event that all service power is lost. The fire pump will allow the facility to have an onsite fire pump instead of relying on the Contra Costa Power Plant (Plant 18) fire pump.

C. Permit Content

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit.

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provision and Permitting rules.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S24).

Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302.

Significant sources are those sources that have a potential to emit of more than 2 tons of a "regulated air pollutant," as defined in BAAQMD Rule 2-6-222, per year or 400 pounds of a "hazardous air pollutant," as defined in BAAQMD Rule 2-6-210, per year.

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A24). If a source is also an abatement device, such as when an engine controls VOC emissions, it will be listed in the abatement device table but will have an "S" number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or "A") device. If the primary function of a device is a non-control function, the device is considered to be a source (or "S").

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District's regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Conditions and Regulation 2-1-403.

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit.

This table reflects current regulation adoption dates and new regulations that apply to the Title V permit.

IV. Source-Specific Applicable Requirements

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are “federally enforceable” and a “Y” (yes) indication will appear in the “Federally Enforceable” column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the “Federally Enforceable” column will have a “Y” for “yes”. If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District’s or EPA’s websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

Complex Applicability Determinations:

40 CFR Part 60, Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Per 40 CFR 60.4200(a)(1)(i) S-7 is subject to the provisions of this subpart because it has a displacement less than 30 liters per cylinder, is not a fire pump engine and was constructed after 2007.

Per 40 CFR 60.4200(a)(2)(ii) S-9 is subject to the provisions of this subpart because it is a certified NFPA fire pump engine manufactured after July 1, 2006.

40 CFR Part 60, Subpart KKKK Standards of Performance for Stationary Combustion Turbines

Per 40 CFR 60.4305, S-1, S-2, S-3, and S-4 are subject to the provisions of this subpart because they are stationary combustion turbines with a heat input at peak load equal to or greater than 10 MMBTU per hour which commenced construction, modification, or reconstruction after February 18, 2005. These sources each have a capacity of 2,202 MMBTU/hr and finished construction in March 2013.

40 CFR Part 63, Subpart ZZZZ National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Per 40 CFR 63.6590(c), S-7 and S-8 are not subject to the provisions of this subpart because they are new stationary reciprocating, internal combustion engines at an area source that meet the requirements of 40 CFR Part 60, subpart IIII for compression ignition engines.

40 CFR Part 64, Compliance Assurance Monitoring (CAM)

Per 40 CFR Part 64.2(b)(iii), the gas turbines are exempt from CAM requirements for NO_x since the facility is subject to the acid rain permit program. The facility is subject to the Acid Rain program because it is a utility unit that serves a generator with a capacity greater than 25 MW in accordance with 40 CFR Part 72.6.

Per 40 CFR 64.2(b)(vi), the gas turbines are exempt from CAM requirements (as specified in 40 CFR 64.2(a)) for CO since the gas turbines utilize a continuous compliance determination method as specified in a Title V permit. Marsh Landing utilizes continuous emission monitors to directly monitor CO and NO_x emissions from each stack.

40 CFR Part 72, Acid Rain Program

Part 72, Subpart A, establishes general provisions and operating permit program requirements for sources and affected units under the Acid Rain program, pursuant to Title IV of the Clean Air Act. The gas turbines are affected unit subject to the program in accordance with 40 CFR Part 72, Subpart A, Section 72.6(a)(3)(i). The facility is expected to meet the 72.9 Standard Requirements which requires the submission of a complete acid rain permit application, the possession of a valid acid rain permit, meeting the monitoring requirements of part 75, and holding sufficient allowances, and comply with the acid rain SO₂ limit. The facility is expected to comply with the excess emissions, recordkeeping and reporting requirements in 72.9(e) and 72.9(f).

Part 72, Subpart C, contains requirements for acid rain permit applications and compliance plans. The facility is expected to continue to meet these requirements.

Part 72, Subpart E, contains the requirements for the acid rain permit which must include all elements of a complete acid rain application.

40 CFR Part 73 – Sulfur Dioxide Allowance System

Part 73 establishes the sulfur dioxide allowance system for tracking, holding, and transferring allowances. The facility is required to obtain sufficient SO₂ allowances each operating year on March 1st (February 29 of a leap year) of the following year.

40 CFR Part 75, Continuous Emission Monitoring

Part 75, Subpart A, contains the applicability criteria, compliance dates, and prohibitions. The gas turbines at the facility are subject to Part 72 and are therefore subject to Part 75. The NO_x monitoring is subject to part 75 per 75.2(c). The facility is expected to continue to meet the compliance dates and prohibitions contained in part 75 Subpart A.

Part 75, Subpart B, contains specific monitoring provisions for each pollutant subject to part 75. The turbine at this facility is required to meet the SO₂, NO_x, and CO₂ monitoring requirements contained in 75.10(a)(1), 75.10(a)(2), 75.10(a)(3) Opacity monitoring under 75.10(a)(4) is not required for gas fired units in accordance with 75.14(c). 75.10(b) requires each CEM to meet equipment, installation, and performance specification in part 75, Appendix A, and quality assurance/quality control in Appendix B. 75.10(c) requires heat input rate monitoring to meet requirements contained in part 75 Appendix F. The facility is expected to comply with the requirements contained in 75.10(b) and (c).

75.10(d) contains primary equipment hourly operating requirements that require the CEM to monitor emissions when the emissions unit combusts fuel except as specified in 75.11(e) and during periods of calibration, quality assurance, or preventive maintenance, performed pursuant to §75.21 and appendix B of this part, periods of repair, periods of backups of data from the data acquisition and handling system, or recertification performed pursuant to §75.20. This section also contains requirements for calculating hourly averages from four 15-minute periods and validity of data and data substitution. Emission concentrations for a given hour are not considered valid unless it is based on four valid measurements. The data substitution requirements are contained in Subpart D. The facility is expected to continue to comply with the requirements contained in 75.10(d). 75.10(f) specifies minimum measurement capability requirement for CEMs and 75.10(g) contains the minimum recordkeeping and reporting requirements. The facility is expected to meet 75.10(f) and (g).

75.11 contain specific provisions for SO₂ monitoring. 75.11(d)(2) allows the use of Appendix D to monitor SO₂ emissions from gas fired units. The facility monitors sulfur content of the natural gas to meet Part 75 SO₂ monitoring requirements.

75.12 contain specific provisions for NO_x emission rates. The facility uses a NO_x CEM and an O₂ monitor to meet this requirement.

75.13 contain CO₂ monitoring requirements. The facility monitors CO₂ in accordance with this section using the procedures in part 75, Appendix G.

75.14 contain opacity monitoring requirements. The facility is exempt from opacity monitoring under part 75 per 75.14(c).

Part 75, Subpart C, contains operation and maintenance requirements including certification and recertification of the CEM, quality assurance/quality control requirements, reference test methods, and out-of-control periods and adjustment for system bias. The facility is expected to meet these requirements.

Part 75, Subpart D (75.30 through 75.36), contains Missing Data Substitution Procedures for SO₂, NO_x, flow rate, CO₂, and heat input procedures. The facility is expected to meet these requirements.

Part 75, Subpart F, contains the recordkeeping requirements including the contents of a part 75 monitoring plan. This subpart requires the facility to record the operating time, heat input rate, and load for each emissions unit. Additionally, the facility must record emissions data for SO₂, NO_x, CO₂, and O₂ along with quality assurance/quality control information.

Part 75, Subpart G, contains the reporting requirements for affected facilities subject to part 75. The facility is expected to meet these requirements.

V. Schedule of Compliance

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

“409.10 A schedule of compliance containing the following elements:

- 10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;
- 10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and
- 10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.”

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

VI. Permit Conditions

The District has reviewed the existing permit conditions. Each permit condition is identified with a unique numerical identifier, up to five digits.

When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting has been added to the permit.

The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 *et seq.*, an order of abatement pursuant to H&SC § 42450 *et seq.*, or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition imposed by the APCO, which limits a source’s operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- Offsets: This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- PSD: This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.

- Regulation 2, Rule 5: This term is used for a condition imposed by the APCO to ensure compliance with limits based on Regulation 2, Rule 5 New Source Review of Toxic Air Contaminants.

Changes to permit:

All changes to existing permit conditions are clearly shown in “strike-out/underline” format in the proposed permit. When the permit is issued, all ‘strike-out’ language will be deleted and all “underline” language will be retained, subject to consideration of comments received.

- Parts 1 through 10 of condition #24732 in the existing permit will be deleted since they pertain only to initial startup - the commissioning period that has elapsed.
- Part 22 mass limits are on a consecutive 12-month basis. The word calendar is being deleted to avoid confusion.

VII. Applicable Limits and Compliance Monitoring Requirements

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

The District has reviewed all monitoring and has determined the existing monitoring is adequate with the following exceptions.

The tables below contain only the limits for which there is no monitoring or inadequate monitoring in the applicable requirements. The District has examined the monitoring for other limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance.

Monitoring decisions are typically the result of a balancing of several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements. It follows that, although Title V calls for a re-examination of all monitoring, there is a presumption that these factors have been appropriately balanced and incorporated in the District’s prior rule development and/or permit issuance. It is possible that, where a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation. Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate.

<u>PM Sources</u>			
S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1, S-2, S-3, & S-4 Combustion Gas Turbines S-7 Emergency Standby Diesel Engine S-8 Emergency Standby Diesel Fire Pump Engine	BAAQMD Regulation 6-1-310	0.15 grain/dscf	None
S-1, S-2, S-3, & S-4 Combustion Gas Turbines S-7 Emergency Standby Diesel Engine S-8 Emergency Standby Diesel Fire Pump Engine	SIP Regulation 6-310	0.15 grain/dscf	None
S-1, S-2, S-3, & S-4 Combustion Gas Turbines S-7 Emergency Standby Diesel Engine S-8 Emergency Standby Diesel Fire Pump Engine	BAAQMD Regulation 6-1-301	Ringelmann 1.0 for more than 3 min/hr	None
S-1, S-2, S-3, & S-4 Combustion Gas Turbines S-7 Emergency Standby Diesel Engine S-8 Emergency Standby Diesel Fire Pump Engine	SIP Regulation 6-301	Ringelmann 1.0 for more than 3 min/hr	None

PM Discussion:

Visible Emissions

BAAQMD Regulation 6-1-301 limits visible emissions to no darker than 1.0 on the Ringelmann Chart (except for periods or aggregate periods less than 3 minutes in any hour). Visible emissions are normally not associated with combustion of gaseous fuels, such as natural gas. Sources S-1, S-2, S-3, and S-4 burn natural gas exclusively therefore, per the EPA's June 24, 1999 agreement with CAPCOA and ARB titled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", no monitoring is required to assure compliance with this limit for sources S-1, S-2, S-3, and S-4.

In accordance with the June 24, 1999 "Periodic Monitoring Recommendations for Generally Applicable Requirements" prepared by the CAPCOA/CARB/EPA Region IX periodic monitoring workgroup, no opacity monitoring is required for diesel standby and emergency reciprocating engines. Sources S-7 and

S-8 are emergency standby diesel engines; therefore no monitoring is required to assure compliance with the visible emissions limits for sources S-7 and S-8.

Particulate Weight Limitation Discussion:

BAAQMD Regulation 6-1-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Section 310.3 limits filterable particulate emissions from “heat transfer operations” to 0.15 gr/dscf @ 6% O₂. These are the “grain loading” standards.

Exceedances of the grain loading standards are normally not associated with combustion of gaseous fuels, such as natural gas. Sources S-1, S-2, S-3, and S-4 burn natural gas exclusively, therefore, per the EPA's July 2001 agreement with CAPCOA and ARB entitled "CAPCOA/CARB/EPA Region IX

Recommended Periodic Monitoring for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources: Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", no monitoring is required to assure compliance with this limit for sources S-1, S-2, S-3 and S-4.

In accordance with the July 2001 “Periodic Monitoring Recommendations for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources” prepared by CAPCOA/CARB/EPA Region IX, non-utility distillate-oil-fueled emergency piston-type IC engines are not required to monitor engine exhaust but must maintain records of all engine usage. Sources S-7 and S-8 are emergency standby diesel engines; therefore no monitoring is required to assure compliance with the particulate weight emission limits for sources S-7 and S-8.

<u>SO₂ Sources</u>			
# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1, S-2, S-3, & S-4 Combustion Gas Turbines S-7 Emergency Standby Diesel Engine S-8 Emergency Standby Diesel Fire Pump Engine	BAAQMD 9-1-301	Ground level concentrations of SO ₂ shall not exceed: 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours	None
S-1, S-2, S-3, & S-4 Combustion Gas Turbines	BAAQMD 9-1-302	300 ppm (dry) at exhaust stack	Fuel Gas Total sulfur content analysis
S-1, S-2, S-3, & S-4 Combustion Gas Turbines	NSPS Subpart KKKK 40 CFR 60.4330(a)(2)	0.060 lb/SO ₂ /MMbtu	None

SO₂ Discussion:

BAAQMD Regulation 9-1

Area monitoring to demonstrate compliance with the ground level SO₂ concentration requirements of Regulation 9-1-301 is at the discretion of the APCO (per BAAQMD Regulation 9-1-501). This facility does

not have equipment that emits large amounts of SO₂ and therefore is not required to have ground level monitoring by the APCO.

All facility combustion sources are subject to the SO₂ emission limitations in District Regulation 9, Rule 1 (ground-level concentration and emission point concentration). In EPA's June 24, 1999 agreement with CAPCOA and ARB, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", EPA has agreed that natural-gas-fired combustion sources do not need additional monitoring to verify compliance with Regulation 9, Rule 1, since violations of the regulation are unlikely. Therefore, no monitoring is necessary for sources S-1, S-2, S-3, and S-4, which burn exclusively natural gas.

The sulfur content limit for sources that burn liquid fuel is 0.5% of sulfur by weight per BAAQMD Regulation 9-1-304 with fuel certification as standard monitoring for this limit. Because sources S-7 and S-8 will use "California" diesel fuel limited to more than 15 ppm sulfur, no monitoring of S-7 and S-8 is required.

NSPS 40 CFR 60.4330(a)(2)

This federal regulation requires that the total sulfur content of fuel used at the gas turbines be less than 0.060 lb SO₂/MMBtu. The natural gas used at S-1, S-2, S-3 and S-4 is pipeline quality. PG&E Gas Rule 21, Section C specifies a maximum total sulfur content of less than 1.0 grains of sulfur per 100 scf, which is equivalent to 0.0028 lb SO₂/MMBtu. The maximum grain loading in pipeline natural gas is much lower than 0.060 lb SO₂/MMBtu. Therefore, no monitoring is required to ensure compliance with this limit.

<u>POC Sources</u>			
S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1, S-2, S-3, & S-4 Combustion Gas Turbines	BAAQMD Condition #24732 Part 17(f)	2.9 lb/hr over any one hour period except during turbine startup, shutdown or combustor tuning	Source test every year
S-1, S-2, S-3, & S-4 Combustion Gas Turbines	BAAQMD condition #24732, Part 18	11.9 lb per startup, 28.5 lb/hr containing a startup, and 5.4 lb per shutdown	Initial source test, District approved calculation, Record keeping
S-1, S-2, S-3, & S-4 Combustion Gas Turbines	BAAQMD condition #24732, Part 19	30 lb/hr during combustor tuning	District approved calculation using permit limit, Record keeping
S-1, S-2, S-3, & S-4 Combustion Gas Turbines	BAAQMD condition #24732, Part 20c	476 lb combined from S-1, S-2, S-3, and S-4 per calendar day (except days when tuning occurs)	District approved calculation, Record keeping
S-1, S-2, S-3, & S-4 Combustion Gas Turbines	BAAQMD condition #24732, Part 21c	693 lb combined from S-1, S-2, S-3, and S-4 per calendar day	District approved calculation, Record keeping

<u>POC Sources</u>			
S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1, S-2, S-3, & S-4 Combustion Gas Turbines	BAAQMD condition #24732, Part 22c	14.21 ton combined from S-1, S-2, S-3, and S-4 per calendar year	District approved calculation, Record keeping

POC Discussion:

BAAQMD Regulation 9-1-301.1.3

Precursor organic compound (POC) emissions from the gas turbines shall not exceed 2 ppmvd @ 15% O₂, except during periods of startup and shutdown as defined in this permit. The POC emission concentration shall be verified by the source test every year. Continuous Emission Monitoring (CEM) is not available for POC. Therefore, CEM monitoring is not required.

Maximum Mass Emissions Limits

The facility will be subject to BAAQMD Permit Condition #24732 Part 18 which will limit POC emissions from all gas turbines (S-1, S-2, S-3, and S-4) during startup and shutdown as summarized in the table above. Continuous Emission Monitoring (CEM) is not available for POC. Therefore, the facility will demonstrate compliance with the emission limits by calculating emissions using a District approved emission factor determined in the initial source test.

The facility will be subject to BAAQMD Permit Condition #24732 Part 19 which will limit POC emissions from all gas turbines (S-1, S-2, S-3, and S-4) during combustor tuning as summarized in the table above. Continuous Emission Monitoring (CEM) is not available for POC. Therefore, the facility will demonstrate compliance with the emission limits by calculating emissions using a District approved emission factor using the permit limit.

The facility will be subject to BAAQMD Permit Condition #24732, Parts 17f, 20c, 21c and 22c which will limit POC emissions from all gas turbines (S-1, S-2, S-3 and S-4) except during turbine startup, shutdown or tuning as summarized in the above table. Continuous Emission Monitoring (CEM) is not available for POC. Therefore, the facility will demonstrate compliance with the emissions limits by calculating emissions using a District approved emission factor determined through annual source testing.

<u>NH₃ Sources</u>			
S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1, S-2, S-3, & S-4 Combustion Gas Turbines	BAAQMD Condition #24732 Part 17(e)	10 ppmv @ 15% O ₂ , dry over any rolling 3 hour period except during turbine startup, shutdown or combustor tuning	District approved calculation

NH₃ Discussion:

BAAQMD Regulation 9-1-301.1.3

Continuous Emission Monitoring (CEM) is not available for NH₃. The ammonia emission concentration shall be verified by the continuous recording of the ammonia injection rate to each SCR System A-2, A-4, A-6, and A-8. The correlation between the gas turbine heat input rates, A-2, A-4, A-6, and A-8 SCR System ammonia injection rates, and corresponding ammonia emission concentration at emission points P-1, P-2, P-3 and P-4 shall be determined in accordance with Part 27 or District approved alternative method. The APCO may require the installation on one exhaust point (P-1, P-2, P-3, or P-4, at the owner/operator's discretion) of a CEM designed to monitor ammonia concentrations if the APCO determines that a commercially available CEM has been proven to be accurate and reliable and that an adequate Quality Assurance/Quality Control protocol for the CEM has been established. The District or another agency must establish a District approved Quality Assurance/Quality Control protocol prior to the ammonia CEM being a requirement of this part. The ammonia CEM shall be used to demonstrate compliance with the ammonia emission limit contained in this Part for the gas turbine being monitored. The gas turbine with the ammonia CEM shall still be subject to the emission testing requirements in Part 27.

VIII. Test Methods

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not applicable requirements.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

IX. TITLE IV Acid Rain Permit

1) Statement of Basis:

Statutory and Regulatory Authorities: In accordance with District Regulation 2, Rule 7 and Titles IV and V of the Clean Air Act, the Bay Area Air Quality Management District issues this permit pursuant to District Rule Regulation 2, Rule 7.

2) SO₂ Allowance Allocations:

	Year	2011	2012	2013	2014	2015
	SO₂ allowances under Table 2 of 40 CFR Part 73	None	None	None	None	None
S-1, S-2, S-3, and S-4 Combustion Turbines	NOx Limit	These units are not subject to the NOx requirements from 40 CFR Part 76 as they are not capable of firing on coal.				

3) Comments, Notes and Justifications:

Pursuant to 40 CFR Part 72.6(a)(3)(i), S-1, S-2, S-3 and S-4 are considered a new utility units and subject to the acid rain permit requirements of 72.9(a).

S-1, S-2, S-3 and S-4 Gas Turbines are not listed in Table-2 of 40 CFR Part 73, therefore, the operator did not receive initial SO₂ allowances under the Acid Rain program.

Since these units serves a generator with a nameplate capacity greater than 25 MW these units do not qualify for a new unit exemption pursuant to 40 CFR 72.7(b)(1).

X. Permit Shield:

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a major facility review permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility does not have any permit shields.

XI. Revision History

This section contains the details of issuance and revisions for each permit. Title-V initial permit Application 25894 will be added to this Section.

XII. Glossary

This section contains terms that may be unfamiliar to the general public or EPA.

D. Alternate Operating Scenarios:

No alternate operating scenarios have been requested for this facility.

E. Compliance Status

No ongoing non-compliance issues have been identified to date.

F. Differences Between the Application and the Proposed Permit

The Title V permit application was originally submitted on December 2, 2013. This version is the basis for constructing the proposed Title V permit. There are no differences between this initial application and the proposed permit.

APPENDIX A GLOSSARY

ACT

Federal Clean Air Act

APCO

Air Pollution Control Officer

ARB

Air Resources Board

BAAQMD

Bay Area Air Quality Management District

BACT

Best Available Control Technology

Basis

The underlying authority which allows the District to impose requirements

CAA

The federal Clean Air Act

CAAQS

California Ambient Air Quality Standards

CAPCOA

California Air Pollution Control Officers Association

CEM

Continuous Emission Monitor

CEQA

California Environmental Quality Act

CFR

The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

CO

Carbon Monoxide

Cumulative Increase

The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Cumulative increase is used to determine whether threshold-based requirements are triggered.

District

The Bay Area Air Quality Management District

dscf

Dry Standard Cubic Feet

EPA

The federal Environmental Protection Agency

Excluded

Not subject to any District regulations.

FDOC

Final Determination of Compliance (FDOC), prepared pursuant to District Regulation 2, Rule 3, Power Plants.

Federally Enforceable, FE

All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPs), Part 63 (MACT), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

FP

Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

HAP

Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

HRSG

Heat Recovery Steam Generator

Major Facility

A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

MFR

Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.

MOP

The District's Manual of Procedures.

NAAQS

National Ambient Air Quality Standards

NESHAPS

National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63.

NMHC

Non-methane Hydrocarbons (Same as NMOC)

NMOC

Non-methane Organic Compounds (Same as NMHC)

NO_x

Oxides of nitrogen.

NSPS

Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.

NSR

New Source Review. A federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

Offset Requirement

A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NO_x, PM₁₀, and SO₂.

Phase II Acid Rain Facility

A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

POC

Precursor Organic Compounds

PM

Particulate Matter

PM₁₀

Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

PSD

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

PUC

Public Utilities Commission (California)

SIP

State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

SO₂

Sulfur dioxide

THC

Total Hydrocarbons (NMHC + Methane)

Title V

Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TOC

Total Organic Compounds (NMOC + Methane, Same as THC)

TPH

Total Petroleum Hydrocarbons

TRMP

Toxic Risk Management Plan

TSP

Total Suspended Particulate

VOC

Volatile Organic Compounds

Units of Measure:

Bhp	=	brake-horsepower	m ²	=	square meter
btu	=	British Thermal Unit	min	=	minute
cfm	=	cubic feet per minute	mm	=	million
g	=	grams	MMbtu	=	million btu
gal	=	gallon	MMcf	=	million cubic feet
gpm	=	gallons per minute	ppmv	=	parts per million, by volume
hp	=	horsepower	ppmw	=	parts per million, by weight
hr	=	hour	psia	=	pounds per square inch, absolute
lb	=	pound	psig	=	pounds per square inch, gauge
in	=	inches	scfm	=	standard cubic feet per minute
max	=	maximum	yr	=	year