

**Bay Area Air Quality Management District**

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**Permit Evaluation  
and  
Statement of Basis  
for  
RENEWAL  
of the**

**MAJOR FACILITY REVIEW PERMIT**

**for  
Gilroy Energy Center, LLC for the Riverview Energy Center  
Facility # B4512**

**Facility Address:**  
795 Minaker Road  
Antioch, CA 94509

**Mailing Address:**  
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**Application and Site Engineer:**  
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**Application:**  
17184

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## **Title V Statement of Basis**

### **A. Background**

The Bay Area Air Quality Management District (BAAQMD or District) is proposing to renew the Title V Major Facility Review Permit for the Riverview Energy Center (Riverview or REC), a natural gas-fired, simple-cycle power plant located in Contra Costa County, California. The plant is a “peaker” plant, meaning it operates only during periods of high power demand. It has been operating since 2003. (More details regarding the facility’s location, operation and permit history are provided below.) For easier identification, the District assigns each facility in the Bay Area a facility number that consists of a letter and a 4-digit number. This number is also used to identify this Title V permit. The facility number for the REC is **B4512**.

The Title V operating permit program arose out of Title V of the 1990 federal Clean Air Act Amendments (CAAA), which required the United States Environmental Protection Agency (EPA) to establish a national, federally enforceable operating program for certain significant stationary sources of pollution. Pursuant to the CAAA, the EPA adopted Title 40, Chapter 1, Part 70 of the Code of Federal Regulations (40 CFR Part 70), which required each state and local permitting authority, including the BAAQMD, to develop and submit for EPA approval a federally enforceable permit program. The District’s Title V permit program, which is set forth in District Regulation 2, Rule 6 (Major Facility Review), satisfies the requirements of 40 CFR Part 70 and has been approved by the EPA.

A major goal of the Title V permit program is to consolidate all of the permitted facility’s “applicable requirements” into one document to ensure that the facility understands all of its air quality obligations under District regulations, state law and the federal Clean Air Act. (The term “applicable requirements” is defined in BAAQMD Rule 2-6-202.) The Title V permit also serves the important purposes of informing the public about the emissions, monitoring, recordkeeping, and reporting requirements imposed on sources and allowing public participation in the permitting process.

The Riverview Energy Center is required to have a Title V permit 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 with a capacity over 25 MW that is used to generate electricity for sale, and was built after November 15, 1990. It is not a “major facility” as defined by BAAQMD Regulation 2-6-212.

In addition to the requirements of Title V, Phase II Acid Rain facilities must meet the requirements of Title IV of the federal Clean Air Act (Acid Rain), and the corresponding Acid Rain regulations in Parts 72 through 78 of Volume 40 of the Code of Federal Regulations. These regulations were adopted by the District and incorporated by reference into BAAQMD Regulation 2, Rule 7 (Acid Rain). The main provisions of the regulations that apply to facilities such as LEC are the requirement to obtain one SO<sub>2</sub> allowance for each ton of SO<sub>2</sub> that is emitted, stringent monitoring requirements for NO<sub>x</sub>, CO, CO<sub>2</sub> or O<sub>2</sub>, and SO<sub>2</sub>, and stringent recordkeeping and reporting requirements.

### Title V Permitting History

(Table II-A, Table II-B and Section VI of the renewed permit contain the sources, abatement devices and permit conditions referenced in the following discussion.)

#### *Initial Title V Permit (2003):*

The District issued the initial Title V permit to REC on July 22, 2003, for source, S-1, and abatement devices, A-1 and A-2.

#### *Significant Revision and Administrative Amendments (2006):*

On August 10, 2006, the District issued a significant revision and an administrative amendment to the permit per Application #10569, to change permit condition #20010: (1) to allow for a source test every 8,000 hours of turbine operation or every 3 years, whichever occurs first; (2) to allow for ammonia slip calculation and correction factor to be determined by source test; and (3) to increase the daily NO<sub>x</sub> and CO mass emission limits. The administrative changes were: (1) to change the facility name from “Riverview Energy Center, LLC” to “Gilroy Energy Center, LLC for Riverview Energy Center”; (2) to modify the definition of “hour” to reflect the facility’s operation of continuous emissions monitors by clock hours; and (3) to delete Parts 1 through 10 of condition ID# 20010, which applied to the commissioning period of the gas turbine, since the commissioning period had passed.

#### *Application for Title V Permit Renewal (2007):*

Gilroy Energy Center, LLC submitted an application 17184 on December 28, 2007 for renewal of their Title V permit. Although the current (initial) permit expired on July 22, 2008, it continues in force until the District takes final action on the permit renewal.

## **B. Facility Description**

REC is a peaking power plant located in Antioch, California. The facility consists of one simple-cycle gas-fired combustion turbine, which provides power, and transmission and distribution support to the electric grid during periods of high electricity demand.

Emissions from the facility are primarily combustion emissions (NO<sub>x</sub>, CO, PM<sub>10</sub>, SO<sub>2</sub>, VOC, and an insignificant amount of Hazardous Air Pollutants [HAPs]). There has been no significant change in emissions since the initial issuance of the initial Title V permit.

Following is a description of the sources at the facility:

- S-1 Combustion Gas Turbine with Water Injection, General Electric LM6000 PC Sprint, natural gas fired, 49.6 MW net simple-cycle, 500 MMBtu/hr maximum heat input rating; abated by A-1 Oxidation Catalyst, and A-2 Selective Catalytic Reduction System.**
- S-2 Cooling Tower, Marley, Model NC8312HL2, 4,160 GPM (Exempt)**

## **C. Permit Content**

The legal and factual basis for the permit follows. The permit sections are described in the order that they are presented in the permit. Changes to the standard permit text will be made since the initial Title V Permit for this site was issued. These changes are reflected in the new proposed permit in strikeout/underline format.

### **I. Standard Conditions**

Section I of the Title V permit contains administrative requirements and conditions that apply to all facilities. This section also contains standard conditions I.L and I.K since this facility must comply with the Title IV (Acid Rain) requirements of 40 CFR Part 72 and the accidental release requirements of 40 CFR Part 68, respectively. 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 Provisions and Permitting rules.

#### **Changes to permit:**

- The dates of adoption and approval of rules in Standard Condition I.A will be updated.
- Application shield language will be added to Standard Condition I.B.1.
- Basis (BAAQMD Regulation 2-6-407) for Standard Condition I.B.1 will be added.
- Standard Condition I.B.12 with Basis (BAAQMD Regulation 2-6-307) will be added.
- The previously stated basis for Standard Condition I.E.2 and I.F (BAAQMD Regulation 3) does not apply and therefore will be deleted.
- Reference to first reporting period will be deleted from Standard Condition I.F since that period has passed.
- Dates of the certification period and reporting deadlines will be added to Standard Condition I.G. to provide additional clarity.
- SO<sub>2</sub> allowance starting date was changed in Standard Condition I.L.1.

### **II. Equipment**

Section II of the Title V permit lists all permitted or significant sources and all abatement (control) devices that control emissions from permitted or significant sources. This section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types and contents or sizes of tanks. This information forms part of the factual basis of the Title V permit.

Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302, whereas significant sources are sources that are exempt from District permit requirements but have the potential to emit significant sources of pollution (more than

2 tons per year of a “regulated air pollutant,” as defined in BAAQMD Rule 2-6-222, or 400 pounds per year of a “hazardous air pollutant,” as defined in BAAQMD Rule 2-6-210). Each source is identified by an S and a number (e.g., S-1). The Riverview Energy Center consists of one permitted source (S-1, Natural Gas Fired Combustion Gas Turbine) and one unpermitted but significant source (S-2, Cooling Tower). The permitted source is listed in Table II A. By definition, it has previously been issued a District permit to operate pursuant to the requirements of BAAQMD Regulation 2 (Permits). District permits to operate are issued in accordance with state law and the District’s regulations. The capacity listed in Table II A is the maximum allowable capacities for each source, pursuant to Standard Condition I.J and BAAQMD Regulation 2-1-403.

Abatement devices are devices that control emissions from a source. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A-24). 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”). REC has two abatement devices (A-1, Oxidation Catalyst and A-2, Selective Catalytic Reduction) that control emissions from the facility’s gas turbine (S-1). The abatement devices are listed in Table II B.

There are no differences between the equipment list in the permit and the equipment list in the original Title V permit application.

**Changes to permit:**

- No changes will be made to this part of the permit.

**III. Generally Applicable Requirements**

Section III of the Title V permit lists requirements that apply generally to all sources at a facility. Some are applicable requirements (e.g., particulate, architectural coating, odorous substance, and sandblasting standards) that apply to all facilities.

If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV (Source-Specific Applicable Requirements) and the monitoring for that requirement will appear in Sections IV and VII of the Title V permit.

In addition, requirements that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in Section III.

**Changes to permit:**

- Section III will be modified to say that SIP standards are now found on EPA's website and are not included as part of the permit.

- The dates of adoption or approval of the rules and their "federal enforceability" status in Table III will be updated.
- 40 CFR Part 82, Protection of Stratospheric Ozone will be added to Table III to conform to current practice.
- SIP Regulation 2-1-429, BAAQMD Regulation 2 Rule 5, BAAQMD Regulation 6, Rule 1, SIP Regulation 6, BAAQMD Regulation 8, Rule 2, SIP Regulation 8, Rule 2, BAAQMD Regulation 8, Rule 3, SIP Regulation 8, Rule 3, BAAQMD Regulation 8, Rule 40, SIP Regulation 8, Rule 40, BAAQMD Regulation 8, Rule 47, SIP Regulation 8, Rule 47, BAAQMD Regulation 8, Rule 51, SIP Regulation 8, Rule 51, BAAQMD Regulation 9, Rule 1, and SIP Regulation 9, Rule 1 will be added to the Table III. SIP Regulations have been added since the most recent amendments of the District regulations have not been approved into the SIP.
- California Health & Safety Code Section 41750 et.seq. will be added.

#### **IV. Source-Specific Applicable Requirements**

Section IV of the Title V permit contains tables (Tables IV-A and -B) that identify the bases of all of the applicable requirements that apply to this facility's permitted (S-1) and unpermitted but significant (S-2) sources. These applicable requirements are imposed on the facility by District, state and federal regulations and/or specific permit conditions. Applicable requirements include monitoring requirements (monitoring is discussed in further detail in Section C.VII of this permit evaluation and statement of basis).

Tables IV-A through IV-C provide only citations to rules, regulations and permit conditions. Where the applicable requirement derives from a District or federal regulation, the full text of the regulation can be found on the District or EPA websites. Alternatively, if the applicable requirement derives from a permit condition, all of the permit conditions that apply to this facility are reproduced in full in Section VI of the Title V permit.

In the tables, the citations are listed in the following order:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that will be 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.

**Changes to the permit:**

- Section IV will be modified to say that SIP standards are now found on EPA's website and are not included as part of the Title V permit.
- The dates of adoption or approval of the rules and their "federal enforceability" status in Table IV-A will be updated.
- BAAQMD Regulation 6, Rule 1 will be added to Table IV-A.
- SIP Regulation 6 will be added to Table IV-A since the most recent addition of BAAQMD Regulation 6, Rule 1 has not been approved into the SIP.
- The reference to BAAQMD Regulation 9-9-301.3 in Table IV-A will be changed to BAAQMD Regulation 9-9-301.1.3 to reflect the modification made in the most recent rule amendment.
- SIP Regulation 9, Rule 9 will be added to Table IV-A since the most recent amendment of BAAQMD Regulation 9, Rule 9 has not been approved into the SIP.
- Some requirements of 40 CFR 60 Subpart A will be added to Table IV-A because they were omitted in error.
- Requirements of 40 CFR 60 Subpart GG will be updated in Table IV-A because this Subpart was revised.
- BAAQMD Condition # 20010 in Table IV-A will be updated.
- BAAQMD Regulation 6, Rule 1 will be added to Table IV-B.
- SIP Regulation 6 will be added to Table IV-B since the most recent addition of BAAQMD Regulation 6, Rule 1 has not been approved into the SIP.

**Complex Applicability Determinations:**

**New Source Performance Standards (NSPS):**

Source S-1, the gas turbine, is subject to the "General Provisions" requirements in 40 CFR 60, Subpart A, which provides the general regulatory framework for NSPS regulations. The gas turbine is also subject to the NOx and SO2 requirements contained in 40 CFR 60, Subpart GG "Standards of Performance for Stationary Gas Turbines", because the turbine was constructed after October 3, 1977 and the heat input at peak load of the turbine is greater than 10 MMBTU/hr.

**National Emission Standards for Hazardous Air Pollutants (NESHAPs):**

The REC facility does not emit nor has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAPs at a rate of 25 tons (22.68 megagrams) or more per year. Therefore, the facility is not subject to the 40 CFR 63 Maximum Achievable Control Technology (MACT) standards for combustion turbines, which were promulgated on March 5, 2004. Please refer to Table A for HAP emissions from REC's gas turbine, S-1.

**Table A**  
HAP Emissions from Gas Turbine S-1



Pollutant	Emission Factor (lb/MMBTU)	Annual Emissions (lb/year)	Annual Emissions (TPY)
1,3-Butadiene	4.30E-07	1.88E+00	9.0E-04
Acetaldehyde	4.00E-05	1.75E+02	8.75E-02
Acrolein	6.40E-06	2.80E+01	1.4E-02
Benzene	1.20E-05	5.25E+01	2.63E-02
Ethylbenzene	3.20E-05	1.40E+02	7.0E-02
Formaldehyde	7.10E-04	3.13E+03	1.57E+00
Napthalene	1.30E-06	5.69E+00	2.8E-03
PAH	2.20E-06	9.64E+00	4.8E-03
Propylene Oxide	2.90E-05	1.27E+02	6.35E-02
Toluene	1.30E-04	5.69E+02	2.85E-01
Xylenes	6.40E-05	2.80E+02	1.4E-01

Total

Note: Emission factors taken from AP-42, Table 3.1.3, Version 2000

**Acid Rain:**

The REC facility meets the criteria for a Phase II<sup>1</sup> Acid Rain Facility per the definition in Section 217 of District Regulation 2-6, “Major Facility Review”. Specifically, REC is a peaking unit that exclusively combusts natural gas, was installed after November 15, 1990, and is used to generate electricity for sale. The peaking unit at the facility is subject to the requirements of Title IV of the federal Clean Air Act outlined in 40 CFR Part 72 “Acid Rain Program” and 40 CFR Part 75 “Continuous Emission Monitoring”. District Regulation 2, Rule 7, “Acid Rain,” incorporates by reference the provisions of 40 CFR Part 72 and the District administers the Acid Rain program through its Title V Operating Permit program.

The facility continues to meet 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 SO<sub>2</sub> limit. The facility must hold sufficient SO<sub>2</sub> allowances by March 1 (February 29 of a leap year) of every year to offset each ton of SO<sub>2</sub> emitted for the previous calendar year. 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.

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<sup>1</sup> Acid Rain Program period beginning January 1, 2000, and continuing into the future thereafter.

### **40 CFR Part 75, Continuous Emission Monitoring**

Part 75, Subpart A, contains the applicability criteria, compliance dates, and prohibitions. The emissions units at the facility are subject to Part 72 and are therefore subject to Part 75. The NO<sub>x</sub> 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 emissions units at this facility are required to meet the SO<sub>2</sub>, NO<sub>x</sub>, CO<sub>2</sub> 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 continue 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 continue to meet 75.10(f) and (g).

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

75.12 contains specific provisions for NO<sub>x</sub> emission rates. The facility uses a NO<sub>x</sub> CEM and an O<sub>2</sub> monitor to meet this requirement.

75.13 contains CO<sub>2</sub> monitoring requirements. The facility monitors CO<sub>2</sub> in accordance with this section using the procedures in part 75 Appendix G.

75.14 contains 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 CEMs, quality assurance/quality control requirements, reference test methods, and out-of-control periods and adjustment for system bias. The facility is expected to continue to meet these requirements.

Part 75, Subpart D (75.30 through 75.36) contains Missing Data Substitution Procedures for SO<sub>2</sub>, NO<sub>x</sub>, flowrate, CO<sub>2</sub>, and heat input procedures. The facility is expected to continue 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 SO<sub>2</sub>, NO<sub>x</sub>, CO<sub>2</sub>, and O<sub>2</sub> 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 continue to meet these requirements.

#### **40 CFR Part 98, Mandatory Greenhouse Gas Reporting**

The facility is expected to meet the federal greenhouse gas reporting requirements.

#### **Title 17 California Code of Regulations, Subchapter 10, Article 2**

The facility is expected to meet the state greenhouse gas reporting requirements.

#### **Protection of Stratospheric Ozone:**

The Thermal Energy Storage System at the facility uses a refrigeration unit to make ice in the off-peak hours when electric prices are low. During peak price hours, the ice is used, via a chilled water loop, to cool the inlet air. The requirements of 40 CFR 82 “Protection of Stratospheric Ozone” apply to the refrigerants used in cooling systems, and will be incorporated in Table III of the Title V (“Generally Applicable Requirements”).

#### **40 CFR Part 64 Compliance Assurance Monitoring (CAM):**

A pollutant-specific emissions unit (unit) at a major source that is required to obtain a part 70 (state operating permit) or part 71 (federal operating permit) is subject to CAM if it satisfies all of the following criteria outlined in 40 CFR 64 (a)(1) through (a)(3):

- The unit is subject to an emission limit/standard for the applicable regulated air pollutant; and
- The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100% of the amount, in tons per year, required for a source to be classified as a major source.

The gas turbine, S-1, is subject to the Acid Rain Program requirements for NO<sub>x</sub>, and therefore is exempt from CAM with respect to NO<sub>x</sub> per 40 CFR 64.2(b)(1)(iii)

CO emissions from the gas turbine, S-1, are abated by an oxidation catalyst, A-1. The CO emissions from the turbine are continuously monitored through CO CEMS to demonstrate compliance with the federally enforceable limit specified in permit condition #20010, part 18.c. The CO emissions from the gas turbine exceed 100 tons per year, prior to abatement by A-1. Per 40 CFR 64.2(a), an emission unit is subject to 40 CFR 64, Compliance Assurance Monitoring, if the unit is subject to a federally enforceable requirement for a pollutant, the pollutant is controlled by an abatement device, and the emissions of the pollutant before abatement are more than 100% of the major source thresholds. The CO emissions from the gas turbine are therefore subject to CAM requirements.

The CO CEM meets the requirement of 40 CFR 64.3(a)(1) to obtain data by directly measuring CO concentrations instead of an indicator of emissions. The monitoring meets 64.3(a)(2) which requires the owner/operator to establish an appropriate range to provide a reasonable assurance of ongoing compliance. The CO CEMs are registered with the District and are subject to Volume V of the District Manual of Procedures. The District source test section reviewed the installation of the CO CEMs including the range of the monitor. The CO CEMs meet the requirements of 64.3(a)(3)(i) by measuring the pollutant directly and not relying on an indicator.

The CO CEM meets the requirement of Section 64.3(b)(1) to obtain representative data because the CO CEM is registered with the District and is subject to Volume V of the District Manual of Procedures. The District source test section has reviewed the installation of the CO CEM to ensure that the CO concentration data is representative of actual CO emissions.

The CO CEM meets 64.3(b)(2) since the District source test section approved the initial installation of the monitors and because the facility follows the District's verification procedures in the District Manual of Procedures. The facility meets the quality assurance requirements in 64.3(b)(3) by meeting Title V of the District Manual of Procedures and by having the District source test section review the CO CEM data on a monthly basis.

The CO CEM meets 64(b)(4) by measuring the CO concentration at the exhaust stack at least once every fifteen minutes (excluding normal calibration periods) as required by Condition No. 16676 part 35. The CO concentration measurements are averaged over any rolling 3-hour period (part 21). This frequency agrees with the 64(b)(4)(ii) requirement that the owner/operator collect four or more values equally spaced over each hour. The CO monitoring frequency of measuring once every fifteen minutes is adequate to characterize any variability due to the oxidation catalyst. The facility uses a computerized data acquisition system to record the CO concentration data.

The CO CEM measures the CO concentration at the exhaust stack directly and meet the requirement of 64.3(c). The CO CEM monitoring accounts for process and control device operational variability and documents the actual CO emissions relative to the permit limit.

64.3(d)(1) requires the owner/operator to use a CEM required by the Act, state or local law to satisfy the requirements of part 64. 64.3(d)(2)(vi) states that a CEM that satisfies monitoring requirements and specifications established by the permitting authority shall be deemed to satisfy the general design criteria specified in 64.3(a) and (b).

64.3(d)(3)(i) requires the owner/operator to design the monitoring system subject to 64.3(d) to report exceedances consistent with any period in an underlying requirement. The data acquisition and handling for the CO CEM allows the owner/operator to meet 64.3(d)(3)(i).

64.4(a) requires the owner/operator to submit to the permitting authority monitoring that satisfies the design requirements of 64.3. The CO CEM meets 64.4(a)(1) through (4) since the units directly measure CO concentration, are registered with the District, and are subject to Volume V of the District Manual of Procedures. The District source test section reviewed the installation of the CO CEM to ensure that the CO concentration data is representative. The review included CO monitor ranges. The monitors meet the performance criteria in 64.3(b) since these monitors meet 64.3(d)(2)(vi) which allows the permitting authority to establish monitoring requirements and specifications.

64.4(b) requires the owner/operator to submit a justification for the proposed elements of the monitoring. If the owner/operator relies on a presumptively acceptable monitoring no further justification for the appropriateness of the monitoring should be necessary other than an explanation of the applicability of such monitoring to the unit in question. The use of a CEM is considered presumptively acceptable in accordance with 64.4(b)(2).

64.4(c)(1) requires the owner/operator to collect process and control device data during compliance or performance testing when the facility is justifying or establishing the use of an indicator of emission subject to part 64. 64.4(c)(2) requires the owner/operator must document that no changes to the emissions unit and control device that could result in a significant change in control system performance or the selected ranges or designated conditions for the indicators to be monitored since the performance or compliance tests were conducted. The CO CEM measure emissions directly and meet the requirements contained in 64.4(c)(1) and (2). Any changes to the emissions unit or control device and the associated impact on CO emissions is quantified on a continuous basis.

64.5(a) requires the owner/operator to submit information required under 64.4 with the initial Title V permit application (submitted on May 11, 2001). The facility has not submitted a document specifically addressing the information under 64.4, but the CO CEM monitoring information meeting 64.4 was submitted to the District source test section. The installation and operation of the CO CEM has been approved by the District source test section. The use of a CEM is considered presumptively acceptable in accordance with 64.4(b)(2).

64.6(c) requires the permitting authority to establish permit terms and conditions that specify the required monitoring in accordance with 70.6(a)(3)(i) of this chapter. According to 64.6(c)(1) at a minimum, the permit shall specify: the approved monitoring approach, indicators to be monitored, means or device used to measure the indicators, the performance requirements established by 64.3(b) or (d) as applicable.

Condition No. 20010 specifies that the CO emissions are monitored with continuous monitors in Part 23(c). Part 23(c) also specifies that the CEM must comply with the requirements of 40 CFR Part 60, Appendices B and F, and 40 CFR Part 75. This condition satisfies the requirements of 64.6(c)(1).

64.6(c)(2) specifies the means by which the owner/operator will define an exceedance or excursion for the purposes of reporting exceedances or excursions under 64.7 and 64.8. The permit shall specify the level at which an exceedance or excursion will be deemed to occur, including the appropriate averaging period. Condition 20010, part 18(c), specifies an emission limit for CO in ppm corrected to 15% oxygen averaged over any rolling 3-hour period. Condition 20010, part 21 specifies a mass emission limit for CO in pounds per day and tons per year. Compliance with these limits is demonstrated with the CO CEM, O<sub>2</sub> monitor, and fuel usage monitoring required by part 23. Part 31 requires the owner/operator to submit written quarterly reports to the Compliance and Enforcement Division detailing emission excesses, corrective actions taken, and CEM downtime.

64.6(c)(3) requires the owner/operator to conduct monitoring and other obligations as required in 64.7 and 64.9. The facility is required to monitor CO concentrations from the affected emission units by Condition No. 20010, part 23. The facility has measured CO emissions using District approved CEMs from the two affected emissions units since the start of commercial operation (2003). The facility continues to submit monthly CEM summary reports to the District's source test section. The facility continues to operate the CO CEMs in accordance with District requirements and meets District recordkeeping and reporting requirements.

64.6(c)(4) discusses minimum data availability for an given averaging period or for averaging periods for a specific reporting period. Volume V of the District's Manual of Procedures requires the facility to notify the District if one of the CO CEMs is down for over 24 hours and to report any malfunctions on a monthly basis. Downtime in excess of 15 consecutive days may be deemed a failure to monitor unless if adequate proof of expeditious repair is not furnished to the APCO.

64.7(a) requires the owner/operator to conduct monitoring required by part 64 upon issuance of the part 70 or 71 operating permit or by such later date specified in the permit pursuant to 64.6(d). According to 64.6(d) the part 70 permit shall include an enforceable schedule with appropriate milestones for completing such installation, testing, of final verification. The District permit condition 20010, which is part of the part 70 permit, required initial monitoring for CO with a CEM during the commissioning period prior to completing the commissioning period the monitors were required to be certified in accordance with Volume V of the District Manual of Procedures. The facility has operated the CO CEMs in accordance with the Manual of Procedures since that time.

64.7(b) requires the owner/operator to maintain the monitoring equipment at all times. Volume V of the District's Manual of Procedures requires that all monitoring systems shall be maintained in a good state of repair. At the discretion of the APCO, either complete performance specification tests or field accuracy tests may be required after repairs have been made.

64.7(c) requires the owner/operator to conduct monitoring at all times that the emissions unit is operating excluding monitoring malfunctions, associated repairs, and required quality assurance or control activities. Volume V of the District's Manual of Procedures requires the facility to notify the District if one of the CO CEM is down for over 24 hours and to report any malfunctions on a monthly basis. Downtime in excess of 15 consecutive days may be deemed a failure to monitor unless if adequate proof of expeditious repair is not furnished to the APCO.

64.7(d) requires the owner/operator to restore operation of the specific emissions unit including the control device to its normal manner of operation as expeditiously as practicable to minimize emissions. The facility is required to promptly report deviations from Title V permit requirements and identify the appropriate corrective action.

64.7(e) requires the owner/operator to notify the permitting authority and if necessary submit a proposed modification to the monitoring program if a failure to achieve compliance with an emission limitation or standard is identified while providing valid data for an indicator. The facility measures CO concentration from the affected emissions units directly and it is unlikely that the owner/operator would need to document a need for improved monitoring.

64.8 allows the Administrator or permitting authority to require a facility subject to part 64 to develop and implement a Quality Improvement Plan. The facility continues to comply with Volume V of the District's Manual of Procedures for CEMs and this document contains sufficient quality assurance and quality control requirements.

64.9 describes the recordkeeping and reporting requirements required to meet part 64. The facility submits monthly CEM summaries to the District source test section. The facility is required to submit semiannual compliance certifications in accordance with the Title V permit. The facility is required to promptly report deviations from Title V permit requirements and identify the appropriate corrective action.

64.10 states that compliance with part 64 does not excuse the owner/operator from complying with other applicable requirements, prevent the permitting authority from imposing additional monitoring requirements, and/or restrict the Administrator or permitting authority from taking enforcement action. The facility is subject to this requirement and no additional permit conditions are required.

**Risk Management Plan (RMP):**

REC's Selective Catalytic Reduction (SCR) system, A-2, abates emissions from the gas turbine, S-1. The SCR process works by injecting a 19% aqueous ammonia solution into the turbine exhaust gas, in the presence of a catalyst. The ammonia reacts with the NOx emissions in the turbine exhaust gas to form nitrogen and water.

The storage and transport of ammonia used in the SCR is subject to 40 CFR 68 "Chemical Accident Prevention Provisions", Subpart G "Risk Management Plan". 40 CFR 68, Subpart G and standard condition I.K. "Accidental Release" in the Title V permit require facilities such as Riverview to maintain and implement a RMP to prevent accidental releases. The RMP provides information on the hazards of the substance handled at the facility and the programs in place to prevent and respond to accidental releases. Although ammonia is toxic if swallowed or inhaled and can irritate or burn the skin, eyes, nose, or throat, it is a commonly used material that is typically handled safely and without incident. The accident prevention and emergency response requirements reflect existing safety regulations and sound industry safety codes and standards.

**Changes to 40 CFR 60, Subpart GG (NSPS GG):**

The gas turbine at REC is subject to the NO<sub>x</sub> and SO<sub>2</sub> limits in NSPS GG. Several sections in NSPS GG were amended and were later adopted into the Federal Register on February 24, 2006.

The net effect of the above changes to NSPS GG will provide Riverview operational flexibility with regards to monitoring. Specifically, the pre-revision version of NSPS GG required Riverview to install and operate continuous monitoring systems to monitor and record the fuel consumption and the ratio of water to fuel fired in the turbine, which uses water injection to control NO<sub>x</sub> emissions. In addition, Riverview also had to monitor and record the nitrogen content and sulfur content of the fuel fired in turbine, S-1, on a daily basis.

The post-revision version or the amended NSPS GG provides Riverview the flexibility of installing and monitoring emissions at turbine, S-1 through CEMS consisting of NO<sub>x</sub> and O<sub>2</sub> monitors instead of continuously monitoring and recording the fuel consumption and the ratio of water to fuel being fired in the turbine. In addition, Riverview can avail of a provision to discontinue monitoring the nitrogen and sulfur content of the fuel fired in the afore-referenced turbine on a daily basis, if it can demonstrate through either purchase contracts, transportation contracts, or tariff sheets or by furnishing fuel sampling data that shows that the sulfur content of the gaseous fuel fired in the turbines is less than or equal to 20.0 grains/100 scf (~ 340 ppmv)<sup>2</sup>.

CEMS requirements outlined in the amended Section 60.334 will be incorporated into the renewed permit. As discussed in Section C.IX of this statement of basis, below, the NSPS GG requirements will no longer be subsumed requirements. It is likely that Riverview will discontinue monitoring the sulfur content of the fuel fired in the turbines on a daily basis to demonstrate compliance with NSPS GG's 20.0 grains/100 scf standard (~ 340 ppmv), since part 22.b of permit condition 20010 limits the total sulfur content in the natural gas combusted in the turbine to the lower standard of 1.0 grains/100 scf (~ 17 ppmv)<sup>3</sup>.

**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.”

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<sup>2</sup> (20 gr S/100 scf x lb/7000 gr x lb-mol/32 lb S x 381 scf/lb-mol) = 340 ppmv

<sup>3</sup> (1.0 gr S/100 scf x lb/7000 gr x lb-mol/32 lb S x 381 scf/lb-mol) = 17 ppmv



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

The BAAQMD Compliance and Enforcement Division conducted a review of compliance over the past year and found no records of continuing compliance problems at this facility. Furthermore, the District reviewed compliance records for the past five years and found no recurring pattern of compliance violations that would suggest the need for additional permit conditions. The compliance report is contained in Appendix A of this permit evaluation and statement of basis.

**Changes to permit:**

- No changes will be made to this part of the permit.

**VI. Permit Conditions**

The District has issued a number of authorities to construct (A/Cs) and permits to operate (P/O) to REC that contain permit conditions such as limits on operation, abatement requirements, and monitoring and recordkeeping requirements. 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. Each permit condition applies to a certain source or group of sources and is identified with a unique numerical identifier, up to five digits. (For example, permit condition #20134 applies to the facility's gas turbine, S-1.)

Section VI of the Title V permit sets out, in full, all of the permit conditions that apply to this facility. During the development of the proposed renewal permit, the District reviewed the existing permit conditions, deleted obsolete conditions and, as appropriate, revised the conditions for clarity and enforceability. 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; all "underline" language will be retained, subject to consideration of comments received. After issuance of the renewal Title V permit, any further changes to any permit condition in any underlying permit will be made according to the procedures in Regulation 2, Rule 6 (Major Facility Review) to ensure consistency between the Title V permit and the underlying permits.

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 that 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.
- TRMP: This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

**Changes to permit:**

- Condition # 20010, part 15 will be deleted because it pertains to start-up notification requirement.
- Basis for Condition # 20010, part 17 will be updated.
- Condition # 20010, part 23b is reworded.
- Condition # 20010, part 33 will be deleted since it is an initial acid rain monitor certification requirement.

**VII. Applicable Limits and Compliance Monitoring Requirements**

Section VII of the Title V permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation to each applicable monitoring requirement, the frequency of monitoring required, and type of monitoring required. All applicable requirements for monitoring are also listed in Sections IV (Source-Specific Applicable Requirements) and VI (Permit Conditions) of the Title V permit.

As part of the development process for the proposed renewal permit, the District has reviewed all existing monitoring requirements and has determined that the existing requirements imposed on this facility are adequate to provide a reasonable assurance of compliance. Included in this review was a review of emissions limits that apply to this facility but that have no explicit monitoring requirements associated with them. The District has listed these emissions limits in the tables below and has provided an explanation following each table of the District's reasoning in concluding that adding monitoring is unnecessary. Where the District's decision rested on the size of a source, the District has provided calculations for the source's potential to emit.

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 the 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.

Although Title V calls for a re-examination of all monitoring prior to the issuance of any Title V permit (including renewals), there is a presumption that these factors were 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 generally will revise the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate for the purpose of determining compliance with the applicable requirement.

**SO2 Sources**

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
Simple Cycle Turbine: S-1	BAAQMD Regulation 9-1-301	GLC <sup>1</sup> of 0.5 ppm for 3 min or 0.25 ppm for 60 min or 0.05 ppm for 24 hours	None
	BAAQMD Regulation 9-1-302	300 ppm (dry)	Fuel sulfur analysis
	NSPS 40 CFR 60.333(a)	0.015% (vol.) @ 15% O <sub>2</sub> (dry)	Fuel sulfur analysis, calculations

<sup>1</sup> Ground level concentration

**SO2 Discussion:**

**Compliance with Regulation 9-1-301:**

(For source S-1)

BAAQMD Regulation 9-1-301 sets forth limitations on ground level concentrations of SO<sub>2</sub>. It provides, in pertinent part, that “[a] person shall not emit from sources other than ships, sulfur dioxide in quantities which result in [off-site] ground level concentrations in excess of 0.5 ppm continuously for 3 consecutive minutes or 0.25 ppm averaged over 60 consecutive minutes, or 0.05 ppm averaged over 24 hours.”

Per BAAQMD Regulation 9-1-501, area monitoring to demonstrate compliance with Regulation 9-1-301 is at the discretion of the APCO. As shown by the calculations below, the District has determined that this facility does not emit large quantities of SO<sub>2</sub>. Therefore, the facility will not be required by the APCO to have ground level monitoring.

SO<sub>2</sub> emissions from this facility are limited to the gas turbine, S-1. The maximum individual heat input rate of S-1 is 500 MMBTU/hr. The SO<sub>2</sub> emission rate in US EPA AP-42, Table 3.1-2a “Emission Factors for Criteria Pollutants and Greenhouse Gases From Stationary Gas Turbines”, April 2000, is 0.94\*S lb/MMBTU, where “S” is the percent sulfur in the fuel. US EPA AP-42 guidance recommends an emission factor of 3.4E-3 lb/MMBTU, when “S” is not available.

Based on a conservative assumption of a sulfur concentration of 1 grain/100 scf, sulfur dioxide emission factor of natural gas input is as follows:

$$= (1 \text{ gr}/100 \text{ scf}) \times (\text{scf}/1050 \text{ BTU}) \times (1\text{E}6 \text{ BTU}/\text{MMBTU}) \times (1 \text{ lb}/7000 \text{ gr}) \times (64 \text{ lbs SO}_2/32 \text{ lbs S})$$

$$= 2.72\text{E-}3 \text{ lb}/\text{MMBTU}$$

The SO<sub>2</sub> Emission Rate from S-1 is therefore the following:

$$= (2.72\text{E-}3 \text{ lb}/\text{MMBTU})(500 \text{ MMBTU}/\text{hr})$$

$$= 1.36 \text{ lb}/\text{hr}$$

= 32.64 lb/day  
 = 5.96 tons/year

**Compliance with Regulation 9-1-302:**

BAAQMD Regulation 9-1-302 contains a general emission limitation that prohibits gas streams containing more than 300 ppm SO<sub>2</sub>. In EPA’s June 24, 1999 agreement with CAPCOA and ARB entitled, “Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP”, EPA agreed that natural-gas-fired combustion sources such as S-1 do not need additional monitoring to verify compliance with Regulation 9, Rule 1, since the sulfur content of natural gas is very low. Therefore, no monitoring is necessary at S-1 to demonstrate compliance with the 300 ppm SO<sub>2</sub> limit in Regulation 9-1-302.

**Compliance with 40 CFR 60.333(a) in NSPS GG:**

Section 60.333(a) requires an owner/operator of stationary turbines to demonstrate compliance with either one of the following two conditions:

- Discharge SO<sub>2</sub> at less than or equal to 0.015% by volume at 15% oxygen on a dry basis  
or
- Combust fuel with sulfur content less than or equal to 0.8% by weight (8000 ppmw).

As previously discussed under the “Compliance with Regulation 9-1-301” section above, the sulfur concentration of the PUC-quality natural gas combusted in S-1 is unlikely to exceed 0.25 grains/100 scf. By conservatively assuming a sulfur concentration of 1 grain/100 scf, the resulting SO<sub>2</sub> concentration can be compared to the above-referenced conditions in Section 60.333(a) as follows:

Convert the sulfur emission factor i.e. 2.72E-3 lb/MMBTU, previously derived in the preceding “Compliance with Regulation 9-1-301” paragraph to obtain an SO<sub>2</sub> emission concentration as follows:

$$= (2.72E-3 \text{ lb/MMBTU}) \times (385.3 \text{ dscf/1 lbmol}) \times (1 \text{ lb-mol/64.06 lb SO}_2) \text{ (MMBTU/8535 dscf)}$$

$$= 1.92 \text{ ppmvd SO}_2 \text{ @ 0\% O}_2$$

The above concentration is equivalent to:  
 (1.92 ppmvd) (20.95-15/20.95-0) = 0.55 ppmv SO<sub>2</sub>, dry @ 15% O<sub>2</sub>  
 = 0.000055% by volume at 15% O<sub>2</sub> on a dry basis

Accordingly, the fuel combusted at the stationary turbine complies with the first condition of NSPS GG. In addition, permit condition #20010 requires monitoring of the natural gas sulfur content. Therefore, no additional monitoring is necessary at the above source to demonstrate compliance with Section 60.333(a) in NSPS GG.

**PM Sources**

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
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<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
Simple Cycle Turbine: S-1	BAAQMD Regulation 6-1-301	≥ Ringelmann No. 1 for no more than 3 minutes in any hour	None
	SIP Regulation 6-301	≥ Ringelmann No. 1 for no more than 3 minutes in any hour	None
	BAAQMD condition #20010, part 18	≥ Ringelmann No. 1 for no more than 3 minutes in any hour or equivalent 20% opacity	None
	BAAQMD Regulation 6-310	0.15 gr/dscf	None
	SIP Regulation 6-310	0.15 gr/dscf	None
Cooling Tower: S-2	BAAQMD Regulation 6-1-301	≥ Ringelmann No. 1 for no more than 3 minutes in any hour	None
	SIP Regulation 6-301	≥ Ringelmann No. 1 for no more than 3 minutes in any hour	None
	BAAQMD Regulation 6-310	0.15 gr/dscf	None
	SIP Regulation 6-310	0.15 gr/dscf	None

**PM Discussion:**

**Compliance with Regulation 6-1-301 and Permit condition # 20010, Part 18**

(For source S-1)

BAAQMD Regulation 6-1-301 limits visible emissions to no darker than 1.0 on the Ringelmann Chart for periods or aggregate periods of more than 3 minutes in any hour. Visible emissions are normally not associated with combustion of gaseous fuels, such as natural gas. Source S-1 combusts natural gas exclusively. Therefore, per the EPA’s June 24, 1999 agreement with CAPCOA and ARB entitled, “Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP”, no monitoring is required to assure compliance with Regulation 6-1-301 for sources-1.

Similarly, no additional monitoring is required to demonstrate compliance with part 18 of permit condition #20010, which contains a Ringelmann 1.0 or equivalent 20% opacity limit for S-1 emissions.

**Compliance with Regulation 6-310:**

(For source S-1)

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. This is a “grain loading” standard.

Exceedances of the grain loading standards are normally not associated with combustion of gaseous fuels, such as natural gas. Source S-1 exclusively combusts natural gas. 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 the above source.

**Compliance with Regulation 6 standards:**

(For S-2)

As discussed in the preceding paragraphs, BAAQMD Regulation 6-301 limits visible emissions to no darker than 1.0 on the Ringelmann Chart for periods or aggregate periods of more than 3 minutes in any hour. Particulate emissions from cooling towers come from dissolved solids in the cooling tower water and are therefore expected to be fairly constant and not subject to operational control.

BAAQMD Regulation 6-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. The worst-case grain loading from S-3 is calculated, per information provided in the cooling tower vendor data sheet, as follows:

Cooling water circulation rate	4,160 gpm
Drift rate	0.005%
Maximum total dissolved solids	1,500 ppm
Exhaust gas flow rate:	285,000 dscfm

Cooling tower drift:

$$(4,160 \text{ gal/min})(60 \text{ min/hr})(8.34 \text{ lb/gal})(0.00005) = 104 \text{ lb/hr}$$

$$\begin{aligned} \text{Max. PM}_{10} \text{ emission rate} &= (104 \text{ lb/hr})(1,500 \text{ ppm}) \\ &= 0.16 \text{ lb/hr} \end{aligned}$$

$$\begin{aligned} \text{Grain loading} &= (0.16 \text{ lb/hr})(\text{hr}/60 \text{ min})(7000 \text{ gr/lb})/(285,000 \text{ dscfm}) \\ &= 0.0001 \text{ gr/dscf} \end{aligned}$$

As demonstrated above, the worst-case grain loading rate from S-2 is much lower than Regulation 6-310 limit. Since the grain loading is so low, the cooling tower is not expected to have visible emissions. Accordingly, the District has determined that periodic monitoring requirements to assure compliance with Regulations 6-301 and 6-310 for S-2 are not necessary.

**Changes to permit:**

- A note has been added at the beginning of the section to clarify that this section is a summary of the limits and monitoring, and that in the case of a conflict between Sections I-VI and Section VII, the preceding sections take precedence.
- The tables in Section VII have been updated to correspond with changes made to the tables in Section IV.

### **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.

#### **Changes to Permit:**

- The adoption date of the revised NSPS Subpart GG has been updated in the table.
- The permit condition number has been corrected.

### **IX. Permit Shield**

The District rules allow two types of permit shields: (1) A provision in a Title V permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, and (2) A provision in a Title V 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 the subsumed emission limits.

The initial Title V permit for REC contained both types of permit shields. First, Table X A-1 set out the federally enforceable regulations and standards that do not apply to certain sources. Here, BAAQMD Regulation 4 and SIP Regulation 4 do not apply to S-1, because the regulations apply only to facilities with a potential to emit more than 100 tons per year of any pollutant whereas LEC's permit conditions limit the facility's potential to emit any pollutant to less than that level. This permit shield will remain intact in the proposed renewal permit.

Further, Table X B-1 in the initial permit contained the "Permit Shield for Subsumed Requirements" applicable to S-1. However, this permit shield has been deleted from the proposed renewal permit. Previously, NSPS GG, 40 CFR 60.334(a), which required REC to monitor and record the fuel consumption and the ratio of water to fuel fired in S-1, were subsumed by BAAQMD permit condition #20010, part 24, which required REC to directly monitor NOx emissions with a CEM. In 2006, however, NSPS GG was amended to allow the use of a CEM to monitor NOx directly per 40 CFR 60.334(b), as an alternative to monitoring fuel use and water to fuel ratio as a surrogate for NOx emissions. Therefore, the permit shield for 40 CFR 60.334(a) is no longer necessary and will be deleted from the permit.

40 CFR 60.3349(c)(1)(i) required the reporting of excess emissions for turbines employing water or steam to fuel monitoring. Because Subpart GG was modified to allow direct monitoring of NOx emissions and LEC employs this method, the shield from 60.339(c)(1)(i) is no longer required. Therefore, the permit shield for 40 CFR 60.334(c)(1)(i) will be deleted from the permit. Please note that the permit shield incorrectly cited 60.334(c)(1) as the subsumed requirement and not 60.334(c)(1)(i). Furthermore, this section has been renumbered as 60.334(j)

in the current version of subpart GG and that 60.334(j)(1)(iii) specifies excess emission reporting requirements for turbines using NO<sub>x</sub> CEMs.

**Changes to permit:**

- Table X B-1 previously identified 40 CFR 60.334(a) and (c)(1) as subsumed requirements, but they are no longer subsumed. As a result, Table X B-1 will be deleted.

**D. Alternate Operating Scenarios**

No alternate operating scenario has been requested for this facility.

**E. Compliance Status**

An office memorandum from the Director of Compliance and Enforcement, to the Director of Permit Services, presents a review of the compliance record of Gilroy Energy Center (Site #: B4512). The Compliance and Enforcement Division staff has reviewed the records for Gilroy Energy Center's for the period from 7/1/2003 through 12/15/2010. This review was initiated as part of the District evaluation of an application by Gilroy Energy Center for a Title V permit renewal. During the period subject to review, activities known to the District include:

- There were no Notices of Violation issued for the period of 7/1/2008 to 12/15/2010.
- The District did not receive any air pollution complaints alleging Gilroy Energy Center as the source for the period of 7/1/2003 to 12/15/2010.
- The District reviewed Gilroy Energy Center's Annual Compliance Certifications for the initial period, and period thereafter, and found no on-going non-compliance.
- There are no enforcement agreements, open variances, or open abatement orders for Gilroy Energy Center.

**F. Differences between the Application and the Proposed Permit**

The renewal Title V permit application was submitted by Gilroy Energy Center, LLC, on behalf of REC on August 31, 2007. That application is the basis for constructing the proposed Title V renewal permit. There are no significant differences between Gilroy's renewal application and the proposed permit.

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**APPENDIX A**  
**BAAQMD COMPLIANCE REPORT**

**COMPLIANCE & ENFORCEMENT DIVISION**

**Inter-Office Memorandum**

**December 15, 2010**

TO: BRIAN BATEMAN – DIRECTOR OF ENGINEERING 

FROM: KELLY WEE – DIRECTOR OF ENFORCEMENT 

SUBJECT: REVIEW OF COMPLIANCE RECORD OF:

**GILROY ENERGY CENTER, LLC; SITE #B4512**

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**Background**

This review was initiated as part of the District evaluation of an application by GILROY ENERGY CENTER, LLC, (GEC), for a Title V Permit Renewal. It is standard practice of the Compliance and Enforcement Division to undertake a compliance record review in advance of a renewal of a Title V Permit to Operate. The purpose of this review is to assure that any non-compliance problems identified during the prior five-year permit term have been adequately addressed, or, if non-compliance persists, that a schedule of compliance is properly incorporated into the Title V permit compliance schedule. In addition, the review checks for patterns of recurring violation that may be addressed by additional permit terms. Finally, the review is intended to recommend, if necessary, any additional permit conditions and limitations to improve compliance.

GEC is a power generation facility using gas turbines and Heat Recovery Steam Generators as well as an auxiliary boiler when needed. Continuous Emission Monitors are in place to measure applicable pollutants.

**Compliance Review**

**1. Violation History**

Staff reviewed GILROY ENERGY CENTER, LLC, Annual Compliance Certifications from its initial permit period between 7/1/03 to 6/30/08 and found no ongoing non-compliance and no recurring pattern of violations. All of the listed NOV's (Notices of Violations) were single day occurrences and compliance was achieved the same day. During this period GILROY ENERGY CENTER, LLC activities known to the District were 2 violations including the following:

NOV#	Regulation	Date Occur	# of Days	Comments	Disposition
A45577	2-6-307	8/24/03	66	Late CEMS Initial Rep. Cert	Settled
A45578	2-6-307	8/24/03	1	No quarterly report	Settled

Staff also reviewed the District compliance records for GILROY ENERGY CENTER, LLC during the period between **7/1/08 through 12/15/10**. During this period GILROY ENERGY CENTER, LLC was found not to have any ongoing non-compliance issues or any recurring pattern of violations. Activities known to the District were the following: 0 District-issued Notices of Violation:

## 2. Complaint History

The District did not receive any air pollution complaints alleging GILROY ENERGY CENTER, LLC as the source over the period of the initial permit period or thereafter..

## 3. Reportable Compliance Activity

Reportable Compliance Activity (RCA), also known as "Episode" reporting, is the reporting of compliance activities involving a facility as outlined in District Regulations and State Law. Reporting covers breakdown requests, indicated monitor excesses, pressure relief device releases, inoperative monitor reports and flare monitoring.

Within the initial permit period, **7/1/03 to 6/30/08**, the District received 2 notifications for RCA's. 0 NOV's were issued as a result of these RCA's.

Between **7/1/08 through 12/15/10**, the District received 0 more notifications for RCA's, resulting in 0 NOV's being issued.

## 4. Enforcement Agreements, Variances, or Abatement Orders

There were no enforcement agreements, variances, or abatement orders for GILROY ENERGY CENTER, LLC over the period of the initial permit period or thereafter.

## Conclusion

Following its review of all available facility and District compliance records from the date of issuance of GILROY ENERGY CENTER, LLC'S initial Title V permit until the present (**7/1/03 and 12/15/10**), the District's Compliance and Enforcement Division has determined that, GILROY ENERGY CENTER, LLC was in intermittent compliance from the initial permit period through the present. However, GILROY ENERGY CENTER, LLC has demonstrated no evidence of ongoing noncompliance and no recurring pattern of violations that would warrant consideration of a Title V permit compliance schedule for this facility.

Based on this review and analysis of all the violations for the 5 -year period, and the period thereafter, the District has concluded that no schedule of compliance or

change in permit terms is necessary beyond what is already contained in the facility's current Title V permit.

Msb 12/15/10

## **APPENDIX B**

### **GLOSSARY**

**ACT**

Federal Clean Air Act

**APCO**

Air Pollution Control Officer

**API**

American Petroleum Institute

**ARB**

Air Resources Board

**BAAQMD**

Bay Area Air Quality Management District

**BACT**

Best Available Control Technology

**BARCT**

Best Available Retrofit Control Technology

**C5**

An Organic chemical compound with five carbon atoms

**C6**

An Organic chemical compound with six carbon atoms

**CAA**

The federal Clean Air Act

**CAAQS**

California Ambient Air Quality Standards

**CAPCOA**

California Air Pollution Control Officers Association

**CEC**

California Energy Commission

**CEQA**

California Environmental Quality Act

**CEM**

A "continuous emission monitor" is a monitoring device that provides a continuous direct measurement of some pollutant (e.g. NO<sub>x</sub> concentration) in an exhaust stream.

**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

**CO2**

Carbon Dioxide

**Cumulative Increase**

The sum of permitted emissions from each new or modified source since a specified date. Used to determine whether threshold-based requirements are triggered.

**District**

The Bay Area Air Quality Management District

**dscf**

Dry Standard Cubic Feet

**dscm**

Dry Standard Cubic Meter

**E 6, E 9, E 12**

Very large or very small number values are commonly expressed in a form called scientific notation, which consists of a decimal part multiplied by 10 raised to some power. For example, 4.53 E 6 equals  $(4.53) \times (10^6) = (4.53) \times (10 \times 10 \times 10 \times 10 \times 10 \times 10) = 4,530,000$ . Scientific notation is used to express large or small numbers without writing out long strings of zeros.

**EGT**

Exhaust Gas Temperature

**EPA**

The federal Environmental Protection Agency.

**Excluded**

Not subject to any District Regulations.

**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 (HAP), and Part 72 (Permits Regulation, Acid Rain), and also 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.

**FR**

Federal Register

**GDF**

Gasoline Dispensing Facility

**GLC**

Ground level concentration.

**GLM**

Ground Level Monitor

**grains**

1/7000 of a pound

**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 both 40 CFR Part 63, and District Regulation 2, Rule 5.

**H<sub>2</sub>S**

Hydrogen Sulfide

**HHV**

Higher Heating Value. The quantity of heat evolved as determined by a calorimeter where the combustion products are cooled to 60F and all water vapor is condensed to liquid.

**LHV**

Lower Heating Value. Similar to the higher heating value (see HHV) except that the water produced by the combustion is not condensed but retained as vapor at 60F.

**Major Facility**

A facility with potential emissions of regulated air pollutants greater than 100 tons per year, greater than or equal to 10 tons per year of any single hazardous air pollutant, and/or greater than or equal to 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity 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 Act and implemented by District Regulation 2, Rule 6.

**MOP**

The District's Manual of Procedures.

**MSDS**

Material Safety Data Sheet

**MW**

Megawatts

**NA**

Not Applicable

**NAAQS**

National Ambient Air Quality Standards

**NESHAPS**

National Emission Standards for Hazardous Air Pollutants. Contained in 40 CFR Part 61.

**NMHC**

Non-methane Hydrocarbons

**NMOC**

Non-methane Organic Compounds (Same as NMHC)

**NO<sub>x</sub>**

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 Act, and implemented by both 40 CFR Part 60 and District Regulation 10.

**NSR**

New Source Review. A federal program for preconstruction review and permitting of new and modified sources of air pollutants for which the District is classified "non-attainment". Mandated by Title I of the Clean Air Act and implemented by 40 CFR Parts 51 and 52 as well as District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

**O<sub>2</sub>**

The chemical name for naturally-occurring oxygen gas.

**Offset Requirement**

A New Source Review requirement to provide federally enforceable emission offsets at a specified ratio for the emissions from a new or modified source and any pre-existing cumulative increase minus any onsite contemporaneous emission reduction credits. Applies to emissions of POC, NO<sub>x</sub>, PM10, and SO<sub>2</sub>.

**Phase II Acid Rain Facility**

A facility that generates electricity for sale through fossil-fuel combustion and by virtue of certain other characteristics (defined in Regulation 2, Rule 6) is subject to Titles IV and V of the Clean Air Act.

**POC**

Precursor Organic Compounds

**PM**

Total Particulate Matter



**PM10**

Particulate matter with aerodynamic equivalent diameter of less than 10 microns

**PSD**

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of 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.

**SCR**

A "selective catalytic reduction" unit is an abatement device that reduces NO<sub>x</sub> concentrations in the exhaust stream of a combustion device. SCRs utilize a catalyst, which operates at a specific temperature range, and injected ammonia to promote the conversion of NO<sub>x</sub> compounds to nitrogen gas.

**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

**SO2 Bubble**

An SO<sub>2</sub> bubble is an overall cap on the SO<sub>2</sub> emissions from a defined group of sources, or from an entire facility. SO<sub>2</sub> bubbles are sometimes used at refineries because combustion sources are typically fired entirely or in part by "refinery fuel gas" (RFG), a waste gas product from refining operations. Thus, total SO<sub>2</sub> emissions may be conveniently quantified by monitoring the total amount of RFG that is consumed, and the concentration of H<sub>2</sub>S and other sulfur compounds in the RFG.

**SO3**

Sulfur trioxide

**THC**

Total Hydrocarbons (NMHC + Methane)

**therm**

100,000 British Thermal Unit

**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)

**TRMP**

Toxic Risk Management Plan

**TSP**

Total Suspended Particulate

**TVP**

True Vapor Pressure

**VOC**

Volatile Organic Compounds

**Units of Measure:**

bhp	=	brake-horsepower
Btu	=	British Thermal Unit
g	=	grams
gal	=	gallon
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m <sup>2</sup>	=	square meter
min	=	minute
MM	=	million
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year

**Symbols:**

<	=	less than
>	=	greater than
≤	=	less than or equal to
≥	=	greater than or equal to