Bay Area Air Quality Management District

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Permit Evaluation
and
Statement of Basis
for
RENEWAL of

MAJOR FACILITY REVIEW PERMIT

for

GILROY ENERGY CENTER, LLC
for the Lambie Energy Center

Facility # B4415

Facility Address:
5975 Lambie Road
Suisun City, CA 94585

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Application and Site Engineer:
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Application:
16646

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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 of the Lambie Energy Center, LLC (Lambie or LEC), a natural gas-fired, simple-cycle power plant located in Solano 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 LEC is **B4415**.

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 Lambie 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_2 allowance for each ton of SO_2 that is emitted, stringent monitoring requirements for NO_x, CO, CO_2 or O_2, and SO_2, and stringent recordkeeping and reporting requirements.

LEC Title V Permitting History

Initial Title V Permit (2003):

The District issued the initial Title V permit to Lambie Energy Center on March 6, 2003.

Significant Revision (2007):

On January 29, 2007, the District issued a significant revision, per Application #11002, to change condition #20134 by: (1) amending the definition of "hour" to reflect the facility's operation of continuous emissions monitors by clock hours; (2) to correct the method previously required for the calculation of ammonia slip; and (3) to allow for a source test every 8,000 hours of turbine operation or every 5 years, whichever comes first.

Application for Title V Permit Renewal (2007):

This proposed Title V permit renewal corresponds to Application #16646, which was submitted by Gilroy Energy Center, LLC for LEC on August 31, 2007. Although LEC's initial permit expired on February 28, 2008, it continues in force until the District takes final action on this permit renewal.

B. Facility Description

The Lambie Energy Center is a peaker power plant that is located in Suisun City, Solano County, California. The facility consists of one simple-cycle, natural 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_x, CO, PM_{10}, SO_2, VOC, and an insignificant amount of hazardous air pollutants). There has been no significant change in emissions from this facility since the District's issuance of the initial Title V permit.

The sources at the facility are:

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 Diesel Firewater Pump, Clarke Model JU4H-UF40, 94 HP

S-3 Cooling Tower, 4160 GPM (Exempt)

S-4 Fire Pump Diesel Storage Tank (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. The proposed renewal permit contains changes to the initial Title V Permit. These changes are described below and are reflected in the proposed renewal 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 the standard 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.
- Basis (BAAQMD Regulation 2-6-307) for Standard Condition I.B.12 will be added.
- The previously stated basis (BAAQMD Regulation 3) for Standard Condition I.E.2. and I.F does not apply and therefore will be deleted.
- Reference to the first reporting period (March 6, 2003 to April 30, 2003) 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. for additional clarity.
- SO_2 allowance starting date will be updated from 2003 to 2008 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 Lambie Energy Center consists of two

permitted sources (S-1, Natural Gas Fired Combustion Gas Turbine, and S-2, Diesel Driven Firewater Pump) and one unpermitted but significant source (S-3, Cooling Tower). The permitted sources are listed in Table II A. By definition, each of the permitted sources at this facility has previously been issued a District permit to operate pursuant to the requirements of BAAQMD Regulation 2 (Permits). These District permits to operate are issued in accordance with state law and the District's regulations. The capacities listed in Table II A are 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"). LEC 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 proposed renewal permit and the equipment list in the initial Title V permit.

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 include a link to the text of SIP-approved District standards on the EPA's website. The text of SIP requirements is not reproduced in the Title V permit.
- The dates of adoption or approval of the rules cited 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.

- BAAQMD Regulation 6, Rule 1, BAAQMD Regulation 8, Rule 40, BAAQMD Regulation 9, Rule 1, and SIP Regulation 9, Rule 1 will be added to the Table III.
- SIP BAAQMD Regulation 2-1-429, SIP Regulation 5, SIP Regulation 8, Rule 40, and SIP Regulation 8, Rule 51 will be added to Table III since the most recent amendments of the District regulations have not been approved into the SIP.

IV. Source-Specific Applicable Requirements

Section IV of the Title V permit contains a series of tables (Tables IV-A through IV-C) that identify the bases of all of the applicable requirements that apply to this facility's permitted sources (S-1 and S-2) and unpermitted significant source (S-3). 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. 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 version 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.
- 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 include a link to the text of SIP-approved District standards on the EPA's website. The text of SIP requirements is not reproduced in the Title V permit.
- The dates of adoption or approval of the rules and their "federal enforceability" status in Table IV-A and IV-B 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 from the initial permit.
- Requirements of 40 CFR 60 Subpart GG will be updated in Table IV-A because this Subpart was revised.
- BAAQMD Condition # 20134 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.
- Requirements of BAAQMD Regulation 9 Rule 8 will be updated in Table IV-B because this rule was recently revised.
- CARB Stationary Diesel Engine ATCM will be added to Table IV-B.
- BAAQMD Condition #20135 in Table IV-B will be replaced by BAAQMD Condition #22851 to reflect the current state Air Toxics Control Measure (ATCM) that applies to stationary diesel engines ("Stationary Diesel Engine ATCM", Title 17, CA Code of Regulations, Section 93115.10, revised, effective October 18, 2007).
- BAAQMD Regulation 6, Rule 1 will be added to Table IV-C. SIP Regulation 6 will be added to Table IV-C 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 of the turbine at peak load is greater than 10 MMBTU/hr.

National Emission Standards for Hazardous Air Pollutants (NESHAPs):

This facility emits hazardous air pollutants through its operation of S-1, the natural gas-fired combustion turbine. HAP emissions from S-1 are listed in Table A below. HAP emissions that result from operation of all other equipment at the facility, including the diesel firewater pump (S-2), are insignificant.

As shown in Table A, LEC does not emit and does not have the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP 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 by the U.S. EPA on March 5, 2004.

Table A
HAP Emissions from LEC 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			**2.265**

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

Acid Rain:

The facility meets the criteria for a Phase II[1] Acid Rain Facility per the definition in BAAQMD Regulation 2-6-217 (Major Facility Review). Specifically, it is a peaking unit that exclusively combusts natural gas, was installed after November 15, 1990, and is used to generate electricity for sale. It therefore 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_2 limit. The facility must hold sufficient SO_2 allowances by March 1 (February 29 of a leap year) of every year to offset each ton of SO_2 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.

[1] 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_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 emissions units at this facility are required to meet the SO_2, NO_x, CO_2 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_2 monitoring. 75.11(d)(2) allows the use of Appendix D to monitor SO_2 emissions from gas fired units. The facility monitors sulfur content of the natural gas to meet Part 75 SO_2 monitoring requirements.

75.12 contains specific provisions for NO_x emission rates. The facility uses a NO_x CEM and an O_2 monitor to meet this requirement.

75.13 contains CO_2 monitoring requirements. The facility monitors CO_2 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_2, NO_x, flowrate, CO_2, 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_2, NO_x, CO_2, and O_2 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 then 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 permit (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 permit pursuant to part 70 (state operating permit) or part 71 (federal operating permit) of Volume 40 of the Code of Federal Regulations is subject to CAM if the unit 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.

LEC's gas turbine, S-1, satisfies all of the above criteria with respect to its NO_x and CO emissions. With respect to NO_x emissions, S-1 is subject to the Acid Rain Program requirements and therefore is exempt from CAM for NOx per 40 CFR 64.2(b)(1)(iii).

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 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 CEM is 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 including the range of the monitor. The CO CEM meets 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 are 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.

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. 20134 part 23(c). The CO concentration measurements are averaged over any rolling 3-hour period per part 18.3. 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 meets 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 CEMs 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 measures 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 July 12, 2002). 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. 20134 specifies that the CO emissions are monitored with continuous monitors in Part 23(c). Part 23(c) also specifies that the continuous emissions monitors shall comply with the requirements of 40 CFR Part 60, Appendices B and F, and 40 CFR Part 75. These two requirements meet 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 20134, part18(c), specifies emission limits for CO in ppm corrected to 15% oxygen averaged over any rolling 3-hour period. Condition 20134, part 21 specifies mass emission limits for CO in pounds per day and tons per year. Compliance with these limits is demonstrated with the CO CEM, O_2 monitor, and fuel usage monitoring as specified in part 23.

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. 20134, part 23. The facility has measured CO emissions using a District-approved CEM from the affected emission unit 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 CEM 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 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(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 20134, 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 CEM 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):

Selective Catalytic Reduction (SCR) system A-2 abates NO_x 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 NO_x emissions in the turbine exhaust gas to form nitrogen and water.

The storage and transport of ammonia used in the SCRs 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 LEC 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, S-1, is subject to the NO_x and SO_2 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 changes to NSPS GG will be to provide Lambie flexibility with regards to monitoring. The previous version of NSPS GG required Lambie 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_x emissions). In addition, Lambie also was required to monitor and record the nitrogen content and sulfur content of the fuel fired in the gas turbine, S-1, on a daily basis.

The amended NSPS GG provides Lambie the option of installing and monitoring emissions at S-1 through a CEMS consisting of NO_x and O_2 monitors instead of continuously monitoring and recording the fuel consumption and the ratio of water to fuel being fired in the turbine. In addition, Lambie can discontinue monitoring the nitrogen and sulfur content of the fuel fired in the gas turbine on a daily basis, if it can demonstrate—through purchase contracts, transportation contracts, tariff sheets or fuel sampling data—that the sulfur content of the gaseous fuel fired in the turbine is less than or equal to 20.0 grains/100 scf (~ 340 ppmv)[2].

CEMS requirements outlined in the amended NSPS GG, Section 60.334, will be added to the renewal 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 Lambie will not need to monitor 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 20134 limits the total sulfur content in the natural gas combusted in the turbine to lower standard of 1.0 grains/100 scf (~ 17 ppmv)[3].

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."

[2] (20 gr S/100 scf x lb/7000 gr x lb-mol/32 lb S x 381 scf/lb-mol) = 340 ppmv
[3] (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 LEC is out of compliance with any applicable requirement, the schedule of compliance for this permit contains only BAAQMD Regulations 2-6-409.10.1 and 2-6-409.10.2.

The BAAQMD Compliance and Enforcement Division conducted a review of compliance records from 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.

V. Permit Conditions

The District has issued a number of authorities to construct (A/Cs) and permits to operate (P/O) to LEC 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 requirements in BAAQMD 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 BAAQMD 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 BAAQMD 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:

- BAAQMD Permit Condition ID# 20134 governs the operation of the gas turbine, S-1. Parts (1 through 10) of the permit condition pertaining to and/or referencing the commissioning period will be deleted in the proposed permit since the commissioning period has elapsed. In addition, the stated basis for part 17 will be updated. Part 15 will be deleted because it pertains to notification of turbine's commencement of operation. Part 23(b) will be reworded for better clarification. Part 26 will be deleted because sulfur monitoring is not required as per amended 40 CFR Part 60, Subpart GG. Part 33 will be deleted because it pertains to certification of acid rain monitors within a period of first fire.
- BAAQMD Permit Condition # 20135 for the diesel firewater pump, S-2, is out of date and will be replaced by BAAQMD Permit Condition # 22851, which consists of standard conditions that are routinely applied by the District to diesel engines that are subject to the current state Air Toxics Control Measure (ATCM) for stationary diesel engines ("Stationary Diesel Engine ATCM", Title 17, CA Code of Regulations, Section 93115.10, revised, effective October 18, 2007).

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**.**

SO_2 Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
Simple Cycle Turbine: S-1	BAAQMD Regulation 9-1-301	GLC[1] 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)	Total sulfur analysis
	NSPS 40 CFR 60.333(a)	0.015% (vol.) @15% O_2 (dry)	Total sulfur analysis, calculations
Emergency Standby Diesel Firewater Pump: S-2	BAAQMD 9-1-301	GLC[1] of 0.5 ppm for 3 min or 0.25 ppm for 60 min or 0.05 ppm for 24 hours	Fuel certification by vendor
	BAAQMD 9-1-304	Sulfur Content of Fuel < 0.5% by weight	Fuel certification by vendor

1 ground level concentration

SO_2 Discussion:

Compliance with Regulation 9-1-301:

BAAQMD Regulation 9-1-301 sets forth limitations on ground level concentrations of SO_2. 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. The District has determined that none of the sources at this facility emits large quantities of SO_2, and therefore the facility will not be required by the APCO to have ground level monitoring.

SO_2 emissions from this facility are limited to the gas turbine and diesel firewater pump (S-1 and S-2) and the levels of those emissions are as follows:

(For source S-1)

The maximum individual heat input rate of S-1 is 500 MMBTU/hr. The SO_2 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 of 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, the sulfur dioxide emission factor of natural gas input is as follows:
= (1 gr/100 scf) x (scf/1050 BTU) x (1E6 BTU/MMBTU) x (1 lb/7000 gr) x (64 lbs SO_2/32 lbs S)
= 2.72E-3 lb/MMBTU

SO_2 Emission Rates:
= (2.72E-3 lb/MMBTU)(500 MMBTU/hr)
= 1.36 lb/hr
= 32.64 lb/day
= 5.96 tons/year

(For source S-2)

Based on a worst case scenario of 500 hours of operation per year (including emergency operation), and an emission factor of 0.1 g/hp-hr (provided by the vendor), the SO_2 emissions from S-2 are calculated as follows:

= (500 hr/yr) (94 hp) (0.1 g SO_2/hp-hr) (1 lb/453.6 g) (1 ton SO_2/2000 lb SO_2)
= 0.005 ton/yr

Thus, the sum total of SO_2 emissions from S-1 and S-2 is 5.965 TPY. For comparison purposes, the petroleum refineries in the Bay Area have SO_2 emissions ranging from 760 TPY to 6900 TPY. Data collected from ground level monitors at the refineries show that the refineries rarely exceed Regulation 9-1-301 limits even with those levels of emissions. Therefore, no periodic monitoring is necessary at LEC to assure compliance with Regulation 9-1-301.

Compliance with Regulation 9-1-302:

(For S-1)

BAAQMD Regulation 9-1-302 contains a general emission limitation that prohibits gas streams containing more than 300 ppm SO_2. In EPA's June 24, 1999 agreement with the California Air Pollution Control Officers Association (CAPCOA) and the California Air Resources Board (ARB) titled, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", EPA agreed that natural-gas-fired combustion sources such as LEC's gas turbine, 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 Regulation 9-1-302.

Compliance with Regulation 9-1-304:

(For S-2)

In EPA's June 24, 1999 agreement with CAPCOA and ARB titled, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", EPA agreed that compliance with the diesel fuel sulfur content limit in BAAQMD Regulation 9-1-304 will be assured by certification by the fuel supplier of the sulfur content of the fuel at each fuel delivery. Therefore, no monitoring is necessary at S-2 to demonstrate compliance with in Regulation 9-1-304.

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

(For S-1)

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

- Discharge SO_2 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 in the "Compliance with Regulation 9-1-301" section above, we conservatively assume a sulfur concentration of 1 grain/100 scf in the natural gas fuel for the turbine, S-1. We then convert the sulfur emission factor derived in the "Compliance with Regulation 9-1-301" section, *i.e.*, 2.72E-3 lb/MMBTU, to obtain an SO_2 emission concentration as follows:

= (2.72E-3 lb/MMBTU) x (385.3 dscf/1 lbmol) x (1 lb-mol/64.06 lb SO2) (MMBTU/8535 dscf)
= 1.92 ppmvd SO_2 @ 0% O_2

The above concentration is equivalent to:
(1.92 ppmvd) (20.95-15/20.95-0) = 0.55 ppmv SO_2, dry @ 15% O_2
= 0.000055% by volume at 15% O_2 on a dry basis

Accordingly, the fuel combusted at S-1 complies with the first condition of NSPS GG. Therefore, no additional monitoring is necessary at S-1 to demonstrate compliance with Section 60.333(a) in NSPS GG.

PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
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

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
	BAAQMD condition #20134, part 17	≥ 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
Emergency Standby Diesel Firewater Pump: S-2	BAAQMD Regulation 6-1-303	≥ Ringelmann No. 2 for no more than 3 minutes in any hour	None
	SIP Regulation 6-303	≥ Ringelmann No. 2 for no more than 3 minutes in any hour	None
	BAAQMD Regulation 6-1-310	0.15 grain/dscf	None
	SIP Regulation 6-310	0.15 grain/dscf	None
Cooling Tower: S-3	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 #20134, Part 17:

(For 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 the 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 titled, "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", no monitoring is required to assure compliance with Regulation 6-1-301 for S-1.

Similarly, no additional monitoring is required to demonstrate compliance with part 17 of permit condition #20134, part 17, which contains a Ringelmann 1.0 or equivalent 20% opacity limit for S-1 emissions.

Compliance with Regulation 6-303:

(For S-2)

Source S-2 is subject to the Ringelmann 2.0 limit, which is equivalent to 40% opacity. The diesel engine that powers the fire pump will operate only during emergencies. This infrequent use, coupled with the fact that the Ringelmann 2.0 limit is a high limit that is highly unlikely to be exceeded by emissions from the engine, has led the District to not impose periodic monitoring requirements for visible emissions for S-2.

Compliance with Regulation 6-310:

(For 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 FP 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 not normally associated with combustion of gaseous fuels such as natural gas. Source S-1 combusts natural gas exclusively. Therefore, per the EPA's July 2001 agreement with CAPCOA and ARB titled, "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 S-1.

(For source S-2)

The diesel engine that powers the fire pump S-2 is rated at 94 hp. The emission factor used to estimate PM_{10} emissions from S-2—0.04 g/hp-hr—was provided by the vendor. Based on 500 hrs/yr of operation (including emergency operation), PM_{10} emissions are calculated as follows:

= (0.04 g/hp-hr)(94 hp)(lb/453.6 g)(500 hrs/yr)(ton/2000 lb)
= 0.002 ton/yr

Since S-2's potential to emit PM is so low, and the operation of the source will be intermittent, additional monitoring to assure compliance with the emission limit is not justified and will not be required by the District. Requiring CEM or annual source tests in this instance would be onerous.

In addition, EPA's July 2001 agreement with CAPCOA and ARB titled, "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", proposes the following monitoring to demonstrate compliance with the grain loading standard for non-utility distillate-oil-fueled emergency piston-type IC Engines: Maintain records of all engine usage (such as time or fuel meter readings) and maintenance. S-2 is subject to such a monitoring requirement.

Compliance with Regulation 6 standards:

(For S-3)

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 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, using information provided by the vendor, to be:

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 gal/min)(60 min/hr)(8.34 lb/gal)(0.00005) = 104 lb/hr

Max. PM_{10} emission rate = (104 lb/hr)(1,500 ppm)
= 0.16 lb/hr

Grain loading = (0.16 lb/hr)(hr/60 min)(7000 gr/lb)/(285,000 dscfm)
= 0.0001 gr/dscf

As demonstrated above, that the worst-case grain loading rate from S-3 (0.0001 gr/dscf) is much less than Regulation 6-310 limit of 0.15 gr/dscf. Since the grain loading from S-3 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-3 are not necessary.

Changes to permit:

- A note will be added at the beginning of Section VII of the Title V permit to clarify that this section is a summary of the applicable limits that have associated monitoring requirements, 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 will be updated to correspond with changes made to the tables in Section IV.

VIII. Test Methods

Section of the Title V 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. The test methods are not "applicable requirements" as defined by Regulation 2-6-202.

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

Changes to Permit:

- Table VIII will be updated by changing the adoption date of amended NSPS Subpart GG (2/24/06).

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 LEC 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 LEC to monitor and record the fuel consumption and the ratio of water to fuel fired in S-1, were subsumed by BAAQMD permit condition #20134, part 24, which required LEC 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 NOx 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 dated January 13, 2011 from the Director of Compliance and Enforcement to the Director of Permit Services, attached as Appendix A to this Statement of Basis, presents a review of the compliance record of the Lambie Energy Center (Site # B4415). The Compliance and Enforcement Division staff has reviewed the records for LEC for the period from 3/6/2003 through 1/26/2011. This review was initiated as part of the District's evaluation of an application submitted by Gilroy Energy Center, LLC for a Title V permit renewal for LEC. During the period subject to review, activities known to the District include:

- There were no Notices of Violation issued for the period of 3/6/2008 to 1/26/2011.
- The District did not receive any air pollution complaints alleging LEC as the source for the period of 3/6/2003 to 1/26/2011.
- The District reviewed LEC's Annual Compliance Certifications for the 5 year period, and the period thereafter, and found no on-going non-compliance.
- There are no enforcement agreements, open variances, or open abatement orders for LEC.

F. Differences between the Application and the Proposed Permit

The renewal Title V permit application for the LEC facility was submitted by Gilroy Energy Center, LLC on August 31, 2007. This application served as the basis for the District's development of the proposed renewal permit. There are no significant differences between the application and the proposed permit.

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APPENDIX A

BAAQMD COMPLIANCE REPORT

COMPLIANCE AND ENFORCEMENT DIVISION

Inter-Office Memorandum

January 13, 2011

TO: BRIAN BATEMAN, DIRECTOR, ENGINEERING DIVISION

FROM: KELLY WEE, DIRECTOR OF ENFORCEMENT

SUBJECT: REVIEW OF COMPLIANCE RECORD OF:

GILROY ENERGY CENTER LLC for LAMBIE ENERGY CENTER
SITE #B4415

Background

This review was initiated as part of the District evaluation of an application by GILROY ENERGY CENTER, 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.

GILROY ENERGY CENTER is a power generation facility utilizing gas turbines equipped with Continuous Emission Monitors to measure applicable pollutants.

Compliance Review

1. Violation History

Staff reviewed GILROY ENERGY CENTER, Annual Compliance Certifications from its initial permit period between 3/6/03 to 3/5/08 and found no ongoing non-compliance and no recurring pattern of violations. All of the listed NOV's (Notices of Violation) were single day occurrences and compliance was achieved the same day. During this period GILROY ENERGY CENTER activities known to the District were **1** violation including the following:

NOV #	Regulation	Date Occur	# of Days	Comments	Disposition
A46146A	1-522.7	9/8/04	1	Episode 04G50 reported > 96 hours	Uncollectable
A46146B	2-6-307	9/8/04	1	Not reported under Title V Regulation	Uncollectable

Staff also reviewed the District compliance records for GILROY ENERGY CENTER, during the period between 3/6/08 to 1/26/11. During this period GILROY ENERGY CENTER was found not to have any ongoing 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 as the source over the period of initial review 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, 3/6/03-3/5/08, the District received **13** notifications for RCA's. **1** NOV was issued as a result of these RCA's.

Between 3/6/08-1/26/11, 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 over 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 initial Title V permit until the present (**3/6/03 to 1/26/11**), the District's Compliance and Enforcement Division has determined that GILROY ENERGY CENTER was in intermittent compliance

from the initial permit period through the present. However, GILROY ENERGY CENTER 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.

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. NOx 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) x (10^6) = (4.53) x (10 x 10 x 10 x 10 x 10 x 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.

H2S
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_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 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.)

O2
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_X, PM10, and SO_2.

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 NOx 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 NOx 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 SO2 bubble is an overall cap on the SO2 emissions from a defined group of sources, or from an entire facility. SO2 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 SO2 emissions may be conveniently quantified by monitoring the total amount of RFG that is consumed, and the concentration of H2S 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^2	=	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
$\leq$	=	less than or equal to
$\geq$	=	greater than or equal to

APPENDIX C

ENGINEERING EVALUATION
GILROY ENERGY CENTER, LLC # 14415
APPLICATION # 11003

BACKGROUND

Calpine's Gilroy Energy Center is requesting administrative changes to their existing operating permit conditions to amend formalize previous discussions with the District to incorporate original comments that were not included in the Permit to Operate. The same administrative permit condition changes were requested for and were approved in application #10472 at Calpine's Gilroy /Wolfskill Energy Center for an identical gas turbine engine.. There is no impact on emissions from these changes. The source is described as follow:

> **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.**

EMISSIONS SUMMARY

Requested changes are as follows:

1. Amend Definitions as follows:
   Clock Hour: Any consecutive 60-minute period beginning on the hour

2. Amend Condition 18.2 as follows:
   Ammonia emissions from S-1 Gas Turbine into the atmosphere shall not exceed 10.0 ppmvd @ 15% O2 (1-hour rolling average), except during periods of startup and shutdown as defined in this permit. The owner/operator shall verify the ammonia concentration by a District approved corrected ammonia slip calculation. ~~the continuous recording of the ratio of the ammonia injection rate to the NOx inlet rate to the SCR control system (molar ratio).~~ The owner/operator shall establish the correction factor ~~maximum allowable NH3/NOx molar ratio~~ during a District approved source test. ~~and shall not exceed the established limits unless a new ratio has been established during another District approved source~~

3. Amend Condition 24 to reflect the infrequent operation of the peak Gas Turbine as follows:
   Source Testing/RATA: Within sixty days after first fire of the gas turbines, and at a minimum on an annual

basis thereafter, a relative accuracy test audit (RATA) shall be conducted on the CEMS in accordance with 40 CFR Part 60 Appendix B Performance Specifications. A source test shall be conducted at least every 8,000 hours of tubine operation or once every three years, whichever comes first. . The owner/operator shall provide written test results of the source tests to the District within 60 days after testing. The owner/operator shall submit a complete test protocol to the District no later than 30 days prior to testing, and notification to the District at least ten days prior to the actual date of testing.

PLANT CUMULATIVE INCREASE

There are no net increase associated with the proposed changes.

TOXIC RISK SCREENING ANALYSIS

In the original application #4881, a District Risk Screen was performed yielding a cancer risk of 2 in a million and passes the Toxic Risk Screen. The proposed changes in this report will not have a change in the cancer risk. Therefore, another Toxic Risk Screen is not necessary.

STATEMENT OF COMPLIANCE

A CEQA study was conducted by the lead agency (County of Solano) in the original application #4881. A Negative Declaration for the project was issued. This project continues to comply with the requirements of Reg.2-1-426.2.

BACT

BACT is not triggered. However, this project will continue to meet BACT 2 Standards (achieve in practice) for NOx, CO, POC, and PM10 by the use of Selective Catalytic Reduction (SCR) as was determined in application #5013.

Offsets

Since there was no change in emissions, offsets were not triggered. However, the original project in application # 4881 was evaluated with two similar projects under the same ownership. As a result, Calpine had provided 423.6 TPY of NOx offset credits.

NSPS

This facility will continue to comply with NSPS standards (subpart GG Stationary Gas Turbines) as was determined in application #4881.

NESHAPS and PSD do not apply.

The facility will continue to meet all other District requirements as stated in application #4881.

PERMIT CONDITIONS

COND# 20134 ----------

Permit Conditions
Calpine Corporation
Gilroy Energy Center
Solano County, CA
Source S-1: Combustion Gas Turbine with Water
Injection, General Electric LM6000 PC Sprint,
Natural gas fired, 49 MW net simple-cycle, 500 MMBtu/hr

Definitions:

Clock Hour: Any continuous 60-minute period beginning on the hour

Calendar Day: Any continuous 24-hour period beginning at 12:00 AM or 0000 hours.

Year: Any consecutive twelve-month period of time

Heat Input: All heat inputs refer to the heat input at the higher heating value (HHV) of the fuel, in Btu/scf.

Firing Hours: Period of time, during which fuel is flowing to a unit, measured in fifteen-minute Increments.

MM Btu: Million British thermal units

Gas Turbine Start-up Mode: The time beginning with the introduction of continuous fuel flow to the Gas Turbine until the requirements listed in Part 18 are met, but not to exceed 60 minutes.

Gas Turbine Shutdown Mode: The time from non-compliance with any requirement listed in Part 18 until termination of fuel flow to the Gas Turbine, but not to exceed 30 minutes.

Corrected Concentration: The concentration of any pollutant (generally NOx, CO or NH3) corrected to a standard stack gas oxygen concentration. For an emission point (exhaust of a Gas Turbine) the standard stack gas oxygen concentration is 15% O2 by volume on a dry basis

Commissioning Activities: All testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the construction contractor to insure safe and reliable steady state operation of the gas turbines, heat recovery steam generators, steam turbine, and associated electrical delivery systems.

Commissioning Period: The Period shall commence when all mechanical, electrical, and control systems are installed and individual system start-up has been completed, or when a gas turbine is first fired, whichever occurs first. The period shall terminate when the plant has completed performance testing and is available for commercial operation, or 180 days after commencement, whichever occurs first.

Precursor Organic Compounds (POCs): Any compound of carbon, excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate

Equipment Description

This Authority To Construct Is Issued And Is Valid For This Equipment Only While It Is In The Configuration Set Forth In The Following Description:

Installation of One Simple-Cycle Gas Turbine Generator Consisting Of:

Simple Cycle Gas Turbine, General Electric LM6000 PC, Maximum Heat Input 500 MMBtu/hr, Nominal Electrical Output 49 MW, Natural Gas-Fired.

Selective Catalytic Reduction NOx Control System.

Ammonia Injection System.
(including the ammonia storage tank and control system)

Oxidation Catalyst System.

Continuous emission monitoring system (CEMS) designed to continuously record the measured gaseous concentrations, and calculate and continuously monitor and record the NOx and CO concentrations in ppmvd corrected to 15% oxygen on a dry basis.

Parts 1 through 10 have been deleted as they only apply to the commissioning period as defined above. Unless noted, parts 11 through 33 shall only apply after the commissioning period has ended.

1. Deleted
2. Deleted
3. Deleted
4. Deleted
5. Deleted
6. Deleted
7. Deleted
8. Deleted
9. Deleted
10. Deleted

The Equipment For Which This Authority To Construct Is Issued May Be Operated Only When In Compliance With The Following Conditions:

11. Consistency with Analyses: Owner/Operator of S-1 Gas Turbine shall operate S-1 Gas Turbine only in accordance with all information submitted with the application (and supplements thereof) and the analyses under which this permit is issued unless otherwise noted below. (Basis: BAAQMD Regulation 2- 1-403).

12. Conflicts Between Paragraphs: In the event that any paragraph herein is determined to be in conflict with any other paragraph contained herein, then, if principles of law do not provide to the contrary, the owner/operator must comply with the paragraph most protective of air quality and public health and safety. (Basis: BAAQMD Regulation 1-102)

13. Reimbursement of Costs: The owner/operator of S-1 Gas Turbine shall reimburse all reasonable expenses, as set forth in the District's rules or regulations, incurred by the District for all activities that follow the issuance of this permit, including but not limited to permit condition implementation, compliance verification and emergency response, directly and necessarily related to enforcement of the permit. (Basis: BAAQMD Regulation 2-1-303)

14. Access to Records and Facilities: As to any condition that requires for its effective enforcement the inspection of records or facilities by representatives of the District, the Air Resources Board (ARB), the U.S. Environmental Protection Agency (U.S. EPA), or the California Energy Commission (CEC), the owner/operator shall make such records available or provide access to such facilities upon notice from representatives of the District, ARB, U.S. EPA, or CEC. Access shall mean access consistent with California Health and Safety Code Section §41510 and Clean Air Act Section §114A. (Basis: BAAQMD Regulation 1-440, 1-441)

15. Notification of Commencement of Operation: The owner/operator shall notify the District of the date of anticipated commencement of turbine operation not less than 10 days prior to such date. Temporary operation under this permit is granted consistent with the District's rules and regulations. (Basis: BAAQMD Regulation 2-1-302)

16. Operations: The owner/operator of S-1 Gas Turbine shall only operate S-1 Gas Turbine if the gas turbine, emissions controls, CEMS and associated equipment are properly maintained and kept in good operating condition. (Basis: BAAQMD Regulation 2-1- 403)

17. Visible Emissions: The owner/operator shall not operate S-1 Gas Turbine if air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark or darker than Ringelmann 1or equivalent 20% opacity. . (Basis: BAAQMD Regulation 6-301)

18. Emissions Limits: The owner/operator of S-1 Gas Turbine shall only operate S-1 Gas Turbine if all of the following emission limits are met:

    18.1 Oxides of nitrogen (NOx) emissions from the gas turbine shall not exceed 2.5 ppmvd @ 15% O2 (3-hour rolling average), except during periods of startup and shutdown as defined in this permit. The NOx emission concentration shall be verified by a District-approved continuous emission monitoring system (CEMS) and during any required source test. (Basis: BACT)

    18.2 Ammonia emissions from the gas turbine shall not exceed 10 ppmvd @ 15% O2, except during periods of startup and shutdown as defined in this permit. The ammonia emission concentration shall be verified by District approved corrected ammonia slip calculation the continuous recording of the ratio of the ammonia injection rate to the NOx inlet rate to the SCR control system (molar ratio). The maximum allowable NH3/NOx molar ratio shall be determined during any required District approved source test, and shall not be exceeded until reestablished through another valid District approved source test. The owner/operator shall establish the correction factor during a District approved source test. (Basis: TRMP)

    18.3 Carbon monoxide (CO) emissions from the gas turbine shall not exceed 6 ppmvd @ 15 % O2 (3-hour rolling average), except during periods of startup and shutdown as defined in this permit. The CO emission concentration shall be verified by a District-approved CEMS and during any required source test. (Basis: BACT)

    18.4 Precursor organic compound (POC) emissions from the gas turbine 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 during any required source test. (Basis: BACT)

    18.5 Particulate matter emissions less than ten microns in diameter (PM10) from the gas turbine shall not exceed 3.0 pounds per hour, except during periods of startup and shutdown as defined in this permit. The PM10 mass emission rate shall be verified during any required source test. (Basis: BACT & cumulative increase)

    18.6 Oxides of sulfur emissions (SOx) from the gas turbine shall not exceed 1.39 pounds per hour, except during periods of startup and shutdown as defined in this permit. The SOx emission rate shall be verified during any required source test. (Basis: BACT & cumulative increase)

19. Turbine Startup: Startup of the gas turbine shall not exceed a time period of 60 minutes each per occurrence, or another time period based on good engineering practice and approved in advance by the District. The startup clock begins with the turbine's initial firing and continues until the unit meets the emission concentration limits. (Basis: Cumulative increase)

20. Turbine Shutdown: Shutdown of the gas turbine shall not exceed a time period of 30 minutes each per occurrence, or another time period based on good engineering practice and approved in advance by the District. Shutdown begins with initiation of the turbine shutdown sequence and ends with the cessation of turbine firing. (Basis: Cumulative increase)

21. Mass Emission Limits: Owner/operator can only operate S-1 Gas Turbine if the total mass emissions from the S-1 Gas Turbine do not exceed the daily, and annual mass emission limits listed in Table 1 below.

TABLE 1 - MASS EMISSION LIMITS (INCLUDING STARTUPS AND SHUTDOWNS)

Pollutant	**Daily(lb.)**	**Annual(tons)**
NOx (as NO2)	121	16.4
CO	163	29.1
POC	30	4.9
PM10	72	13.1
SOx (as SO2)	33	6.0

The daily and annual mass limits are on a calendar basis. Daily limits shall be based on average one-hour readings and annual limits shall be based on 12-month rolling average readings from the process monitors (e.g., fuel use meters), CEMS, and source test results; and the monitoring, recordkeeping and reporting conditions of this permit. (Basis: Cumulative increase)

22. Operational Limits: In order to comply with the emission limits of this rule, the owner/operator of S-1 Gas Turbine shall operate S-1 Gas Turbine only if the following operational limits are met:
    (a) The heat input to the gas turbine shall not exceed:
    Hourly: 500 MMBtu/hr
    Daily: 12,000 MMBtu/day
    Annual: 4,380,000 MMBtu/year
    (b) Only PUC Quality natural gas (General Order 58-a) shall be used to fire the gas turbine. The natural gas shall not contain total sulfur in concentrations exceeding 1 gr./100 scf.
    (c) The owner/operator of the gas turbine shall comply with the daily and annual emission limits listed in Table 1 by keeping running totals based on CEM data. (Basis: Cumulative increase)

23. Monitoring Requirements: The owner/operator of S-1 Gas Turbine shall not operate S-1 Gas Turbine unless the following monitoring systems are installed, maintained and available for service:
    (a) The gas turbine exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. (Basis: BAAQMD Regulation 2-1-403)
    (b) The ammonia injection system shall be equipped with an operational ammonia flow meter and injection pressure indicator accurate to plus or minus five percent at full scale and calibrated once every twelve months. (Basis: BACT)

(d) The gas turbine exhaust shall be equipped with continuously recording emissions monitor(s) for NOx, CO, and O2 or CO2. Continuous emissions monitors shall comply with the requirements of 40 CFR Part 60, Appendices B and F, and 40 CFR Part 75, and shall be capable of monitoring concentrations and mass emissions during normal operating conditions and during startups and shutdowns. (Basis: 40CFR Part 60, Appendices B and F, and 40CFR Part 75)

(e) The fuel gas supply system shall be continuously recorded using District-approved fuel flow meters along with quarterly fuel compositional analyses for the fuel's higher heating value (wet basis). (Basis: Cumulative Increase)

(f) The fuel gas system shall have sample points and the total sulfur content of the fuel gas shall be analyzed on a quarterly basis. (Basis: BAAQMD Regulation 9-1-302)

24. Source Testing/RATA: Within sixty days after startup of the gas turbines, and at a minimum on an annual basis thereafter, the owner/operator shall perform a relative accuracy test audit (RATA) on the CEMS in accordance with 40 CFR Part 60 Appendix B Performance Specifications. A source test shall be conducted at least 8,000 hrs of turbine operation or once every three years, whichever comes first. Additional source testing may be required at the discretion of the District to address or ascertain compliance with the requirements of this permit. The written test results of the source tests shall be provided to the District within 60 days after testing. A complete test protocol shall be submitted to the District no later than 30 days prior to testing, and notification to the District at least ten days prior to the actual date of testing shall be provided so that a District observer may be present. The source test protocol shall comply with the following: measurements of NOx, CO, POC, and stack gas oxygen content shall be conducted in accordance with ARB Test Method 100; measurements of PM10 shall be conducted in accordance with ARB Test Method 5; and measurements of ammonia shall be conducted in accordance with Bay Area Air Quality Management District test method ST-1B. Alternative test methods, and source testing scope, may also be used to address the source testing requirements of the permit if approved in advance by the District. The initial and annual source tests shall include those parameters specified in the approved test protocol, and shall at a minimum include the following:

a. NOx (as NO2) - ppmvd at 15% O2 and lb/MMBtu;
b. Ammonia - ppmvd at 15% O2 (Exhaust);
c. CO - ppmvd at 15% O2 and lb/MMBtu (Exhaust);
d. POC - ppmvd at 15% O2 and lb/MMBtu (Exhaust);
e. PM10 - lb/hr (Exhaust);
f. SOx - lb/hr (Exhaust);
g. Natural gas consumption, fuel High Heating Value (HHV), and total fuel sulfur content;
h. Turbine load in megawatts;
i. Stack gas flow rate (SDCFM) calculated according to procedures in U.S. EPA Method 19.
J Exhaust gas temperature (°F)
k. Ammonia injection rate (lb/hr or moles/hr) (Basis: Cumulative Increase)

25. The owner/operator of S-1 Gas Turbine shall not operate S-1 Gas Turbine until after a written quality assurance program is established in accordance with 40 CFR Part 75, Appendix B and 40 CFR Part 60 Appendix F. (Basis: 40 CFR Part 75, Appendix B and 40 CFR Part 60 Appendix F)

26. The owner/operator shall not operate S-1 Gas turbine unless S-1 is in compliance with the applicable requirements of 40 CFR Part 60 Subpart GG, excluding sections 60.334(a) and 60.334(c)(1). The sulfur content of the natural gas fuel shall be monitored in accordance with the following custom schedule approved by the USEPA on August 14, 1987:
    a. The sulfur content shall be measured twice per month for the first six months of operation.
    b. If the results of the testing required by Part 26a are below 0.2% sulfur by weight, the sulfur content shall be measured quarterly for the next year of operation.
    c. If the results of the testing required by Part 26b are below 0.2% sulfur by weight, the sulfur shall be measured semi-annually for the remainder of the permit term.
    d. The nitrogen content of the fuel gas shall not be monitored in accordance with the custom schedule. (Basis: NSPS)

27. The owner/operator shall notify the District of any breakdown condition consistent with the District's breakdown regulations. (Basis: BAAQMD Regulation 1-208)

28. The District shall be notified by the owner/operator of S-1 Gas Turbine in writing in a timeframe consistent with the District's breakdown regulations following the correction of any breakdown condition. The breakdown condition shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the actions taken to restore normal operations. (Basis: BAAQMD Regulation 1-208)

29. Record keeping: The owner/operator of S-1 Gas Turbine shall not operate S-1 Gas turbine unless the following records are maintained:
    (a) hourly, daily, quarterly and annual quantity of fuel used and corresponding heat input rates (Basis: Cumulative Increase);
    (b) the date and time of each occurrence, duration, and type of any startup, shutdown, or malfunction along with the resulting mass emissions during such time period (Basis: BACT, Cumulative Increase);
    (c) emission measurements from all source testing, RATAs and fuel analyses (Basis: BACT, Cumulative Increase, 40CFR60, 40CFR75);
    (d) daily, quarterly and annual hours of operation (Basis: Cumulative Increase);
    (e) hourly records of NOx and CO, emission concentrations and hourly ammonia injection rates and ammonia/NOx ratio (Basis: BACT).
    (g) for the continuous emissions monitoring system; performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period of non-operation of any continuous emissions monitor. (Basis: BAAQMD Regulation 1-522)

30. All records required to be maintained by this permit shall be retained by the owner/operator for a period of five years and shall be made readily available for District inspection upon request. (Basis: BAAQMD Regulation 2-6-501)

31. Reporting: The owner/operator shall submit to the District a written report for each calendar quarter, within 30 days of the end of the quarter, which shall include:
    (a) Daily and quarterly fuel use and corresponding heat input rates (Basis: Cumulative Increase);
    (b) Daily and quarterly mass emission rates for all criteria pollutants during normal operations and during other periods (startup/shutdown, breakdowns) (Basis: BACT, Cumulative Increase);
    (c) Time intervals, date, and magnitude of excess emissions (Basis: BACT, Cumulative Increase);
    (d) Nature and cause of the excess emission, and corrective actions taken (Basis: BACT, Cumulative Increase);
    (e) Time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments (Basis: BAAQMD Regulation 1-522);
    (f) A negative declaration when no excess emissions occurred (Basis: BACT, Cumulative Increase);
    (h) Results of quarterly fuel analyses for HHV and total sulfur content. (Basis: BACT, 40CFR75)

32. District Operating Permit: The owner/operator shall apply for and obtain all required operating permits from the District according to the requirements of the District's rules and regulations. (Basis: BAAQMD Regulations 2, Rule 2 & BAAQMD Regulation 2, Rule 6)

33. Title IV and Title V Permits: The acid rain monitors (Title IV) must be certified within the earlier of 90 operational days or 180 calendar days of first-fire. (Basis: BAAQMD Regulation 2, Rule 6)

RECOMMENDATION

Issue a change in Permit Condition for the following source:

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.

By: _____ _____
AQ Engineer II Date