Bay Area Air Quality Management District
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Permit Evaluation and Statement of Basis for RENEWAL of

MAJOR FACILITY REVIEW PERMIT

for

PE Berkeley, Inc.
Facility #B1326

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Berkeley, CA 94720

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Application: 21344

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Title V Statement of Basis

A. Background

The Bay Area Air Quality Management District (BAAQMD or District) is proposing to renew the Title V Major Facility Review Permit for the PE Berkeley, Inc. (PEB), a natural gas-fired, cogeneration power plant located in Berkeley, California. The plant is a cogeneration plant, meaning it produces electricity and steam. It has been operating since 1987. (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 PEB is **B1326**.

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 PE Berkeley, Inc. is required to have a Title V permit because it is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review, and it is a major facility as defined by BAAQMD Regulation 2-6-212. It is a major facility because it has the "potential to emit," as defined by BAAQMD Regulation 2-6-218, of more than 100 tons per year of a regulated air pollutant.

Pursuant to Regulation 2, Rule 6, section 416, the District has reviewed the terms and conditions of this Major Facility Review permit and determined that they are still valid and correct. This review included an analysis of applicability determinations for all sources, including those that have been modified or permitted since the issuance of the initial Major Facility Review Permit. The review also included an assessment of all monitoring in the permit for sufficiency to determine compliance.

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

Title V Permitting History

Initial Title V Permit (1999):

The District issued the initial Title V permit to PE Berkeley, Inc. on February 16, 1999, for sources S-40 and S-41.

Administrative Amendment (1999):

On December 29, 1999 the District issued an administrative amendment to the permit to include efficiency adjustment to NOx limit of the District Regulation 9-9-303.1.

Significant Revision (2000):

On August 22, 2000 the District issued a significant revision to the permit per Application # 579: (1) to change permit condition # 366 by raising CO mass emission limit due to allowing increase in steam injection to control NOx emissions; (2) subsumption of turbine NSPS fuel monitoring requirements-periodic monitoring for NSPS NOx limit.

Title V Permit Renewal (2005):

On July 18, 2005 the District issued a renewal of Title V permit per Application # 8132. The standard sections of the permit were updated to include new standard language used in all Title V permits. An emergency diesel-engine generator was included in the permit. It was exempt at the time the initial permit was issued. The evaluation of loss of exemption was done per Application # 4694.

Application for Title V Permit Renewal (2009):

PE Berkeley, Inc. submitted an application # 21344 on November 19, 2009 for renewal of their Title V permit. Although the current permit expired on June 30, 2010, it continues in force until the District takes final action on the permit renewal.

B. Facility Description

PE Berkeley, Inc. is a cogeneration facility comprised of a multi-fuel turbine/generator, a duct burner to fire a heat recovery steam generator, and an emergency diesel engine-generator. The facility produces electricity that is sold to PG&E, and steam that is sold to University of California, Berkeley. The total electricity output of the facility is 24 MW. The emergency diesel-engine generator is maintained to provide backup power to restart the turbine in the event of a power interruption. There are five underground diesel storage tanks that are used to store backup fuel, and are exempt from District permits.

Emissions from the facility are primarily combustion emissions (NOx, CO, PM_{10}, SO_2, VOC, and an insignificant amount of HAPs). There has been no significant change in emissions since the issuance of the last Title V permit renewal.

Following is a description of the sources at the facility:

S-1 Emergency Diesel Engine-Generator, General Motor 16VA19034, 950 hp.

S-40 Turbine (natural gas/distillate oil) with steam injection, General Electric LM-2500, 243 MMBTU/hr, 23.5 MW.
S-41 Duct Burner, COEN PowerPlus, 84 MMBTU/hr, natural gas fired.

C. Permit Content

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

I. Standard Conditions

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

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

Changes to permit:

- The dates of adoption and approval of rules in Standard Condition 1.A will be updated.
- New rules will be added in Standard Condition I.A

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 PE Berkeley, Inc. consists of three permitted source (S-1, Emergency Diesel Engine-Generator; S-40, Turbine; and S-41, Duct Burner), and no unpermitted significant source. The permitted sources are listed in Table II A. By definition, the sources have previously been issued a District permit to operate pursuant to the requirements of BAAQMD Regulation 2 (Permits). District permits to operate are issued in accordance with state law and the District's regulations. The capacity listed in Table II A is the maximum allowable capacities for each source, pursuant to Standard Condition I.J and BAAQMD Regulation 2-1-403.

Abatement devices are devices that control emissions from a source. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A-24). An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or "A") device. If the primary function of a device is a non-control function, the device is considered to be a source (or "S").

The PE Berkeley, Inc. has no abatement devices.

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

Changes to permit:

- Source description of S-40 will be reworded for better clarity.

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:

- Table III has been updated by adding the following rules and standards to conform to current practice:
  - SIP Regulation 2-1-429, Federal Emissions Statement
  - BAAQMD Regulation 6, Rule 1, Particulate Matter, General Requirements

- SIP Regulation 6, Particulate Matter and Visible Emissions
- SIP Regulation 8, Rule 2, Organic Compounds-Miscellaneous Operations
- SIP Regulation 8, Rule 3, Organic Compounds-Architectural Coatings
- BAAQMD Regulation 8, Rule 4, Organic Compounds-General Solvent and Surface Coating Operations
- SIP Regulation 8, Rule 40, Organic Compounds- Aeration of Contaminated Soil and Removal of Underground Storage Tanks
- SIP Regulation 8, Rule 47, Organic Compounds-Air Stripping and Soil Vapor Extraction Operations
- SIP Regulation 8, Rule 51, Organic Compounds- Adhesive and Sealant Products
- SIP Regulation 9, Rule 1, Inorganic Gaseous Pollutants-Sulfur Dioxides
- California Health and Safety Code Title 17, Section 93115, Airborne Toxic Control Measures for Stationary Compression Ignition Engines
- California Health and Safety Code Title 17, Section 93116., Airborne Toxic Control Measures for Diesel particulate matter from Portable Engines Rated at 50 Horsepower and greater
- EPA Regulation 40 CFR 82 Subpart F, Protection of Stratospheric Ozone
- EPA Regulation 40 CFR Part 98, Mandatory Greenhouse Gas Reporting

- The dates of adoption or approval of the rules and their "federal enforceability" status in Table III will also be updated.

IV. Source-Specific Applicable Requirements

Section IV of the Title V permit contains tables (Tables IV-A, -B, and -C) that identify the bases of all of the applicable requirements that apply to this facility's permitted (S-1, S-40, S-41) sources. These applicable requirements are imposed on the facility by District, state and federal regulations and/or specific permit conditions. Applicable requirements include monitoring requirements (monitoring is discussed in further detail in Section C.VII of this permit evaluation and statement of basis).

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

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

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are "federally enforceable" and a "Y" (yes) indication will appear in the "Federally Enforceable" column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the "Federally Enforceable" column will have a "Y" for "yes". If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally

enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.

- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Changes to permit:

- Tables IV-A, IV-B, and IV-C will be updated by including new applicable rules, dates of adoption or approval of the rules, and "federal enforceability" status.
- BAAQMD Regulation 6, Rule 1 will be added to Tables IV-A, IV-B, and IV-C.
- SIP Regulation 6 will be added to Tables IV-A, IV-B, IV-C 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-A, because this rule was recently revised.
- CARB Stationary Diesel Engine ATCM will be added to Table IV-A.
- BAAQMD Condition #22010 in Table IV-A will be replaced by BAAQMD Condition #22820 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).
- SIP Regulation 9, Rule 9 will be added to Tables IV-B and IV-C since the most recent amendment of BAAQMD Regulation 9, Rule 9 has not been approved into the SIP.
- Requirements of 40 CFR 60 Subpart GG will be updated in Table IV-B and IV-C because this Subpart was revised.
- 40 CFR Part 72.6(b)(4) – Exemption from Acid Rain Program will be added because it was omitted earlier in error.
- BAAQMD Condition # 366 will be updated in Tables IV-B and IV-C.
- Applicable requirements of 40 CFR 63, Subpart ZZZZ will be added to Table IV-A.

Complex Applicability Determinations

New Source Performance Standards (NSPS):

Turbine, S-40, is subject to the "General Provisions" requirements in 40 CFR 60, Subpart A which provides the general regulatory framework for NSPS regulations.

The turbine, S-40, and the duct burner, S-41, are subject to the NOx and SO2 requirements contained in 40 CFR 60, Subpart GG "Standards of Performance for Stationary Gas Turbines", because the turbine and duct burner were constructed after October 3, 1977, and the heat input of the turbine and the duct burner at peak load is greater than 10 MMBTU/hr for each source.

40 CFR 60, Subpart GG

The turbine is subject to the NOx emission standard of 60.332(a)(1). NOx limit is calculated by using the equation given in this section:

$STD = (0.0075)(14.4/Y) + F$

Where:
STD = allowable ISO corrected NOx emission concentration (percent by volume at 15% oxygen and on a dry basis),
Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour), and
F = NOx emission allowance for fuel-bound nitrogen.

Turbine rating: 243 MMBTU/hr; 23.5 MW
F = 0.0

Y = (243 MMBTU/hr)(1055 joules/BTU)/(23.5 MW)
= 10.909 kilojoules/watt-hr

STD = (0.0075)(14.4/10.909)
= 0.0099% by volume @15% oxygen dry
= 99 ppmdv @ 15% oxygen.

Title IV, 40 CFR 72 through 78 (Acid Rain)

The facility is exempt from the requirements of Acid Rain Program because it is not an affected unit under 40 CFR 72.6(b)(4)(i). This is a cogeneration facility constructed prior to November 15, 1990, and the facility's annual electric sale to the utility power distribution system is less than 219,000 MW-hrs. The primary consumer of the plant's steam and electricity is the University of California, Berkeley campus and PG&E respectively.

National Emission Standards for Hazardous Air Pollutants (NESHAPs):

This facility emits hazardous air pollutants through its operation of S-40, the natural gas-fired combustion turbine, and S-41, the duct burner. HAP emissions from S-40 and S-41 are listed in Table A below. HAP emissions that result from operation of all other equipment at the facility, including the diesel engine-generator (S-1), are insignificant.

As shown in Table A, PEB 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 PEB Gas Turbine & Duct Burner (S-40 & S-41)

Pollutant	Emission Factor (lb/MMBTU)	Annual Emissions (lb/year)	Annual Emissions (TPY)
1,3-Butadiene	4.30E-07	1.23E+00	6.0E-04
Acetaldehyde	4.00E-05	1.15E+02	5.75E-02
Acrolein	6.40E-06	1.80E+01	9.0E-03
Benzene	1.20E-05	3.44E+01	1.72E-02

Table A
HAP Emissions from PEB Gas Turbine & Duct Burner (S-40 & S-41)

Pollutant	Emission Factor (lb/MMBTU)	Annual Emissions (lb/year)	Annual Emissions (TPY)
Ethylbenzene	3.20E-05	9.17E+01	4.6E-02
Formaldehyde	7.10E-04	2.03E+03	1.02E+00
Napthalene	1.30E-06	3.72E+00	1.9E-03
PAH	2.20E-06	6.3E+00	3.2E-03
Propylene Oxide	2.90E-05	8.31E+01	4.16E-02
Toluene	1.30E-04	3.72E+02	1.86E-01
Xylenes	6.40E-05	1.83E+02	9.15E-02
Total			**1.476**

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

40 CFR 63, Subpart ZZZZ

The emergency diesel-engine generator, S-1, is subject to subpart ZZZZ which establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

The facility is not a major source of HAP, therefore the engine-generator, S-1, is considered an area source of HAP emissions for the purposes of Subpart ZZZZ. The applicable requirements will be incorporated in the source-specific Table IV-A.

Protection of Stratospheric Ozone:

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 64.2 (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.

NOx emissions from the turbine, S-40, are abated by steam injection. Steam injection rate is not monitored because the turbine is equipped with a continuous emission monitor for NOx, CO, and

O_2. The turbine is not subject to 40 CFR 64, Compliance Assurance Monitoring for NOx per exemption 64.2(b)(1)(vi), emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method. S-40 is equipped with a CEM for NOx.

CO emissions from the turbine, S-40, are not abated and do not satisfy all the three criteria outlined in 40 CFR 64.2(a)(1) through (a)(3), and therefore are not subject to 40 CFR 64, Compliance Assurance Monitoring.

The duct burner and emergency engine-generator do not have any abatement devices and do not satisfy all the three criteria outlined in 40 CFR 64.2(a)(1) through (a)(3), and therefore are not subject to 40 CFR 64, Compliance Assurance Monitoring.

Regulation 1-107, Combination of Emissions

Several requirements have been added to the turbine and the duct burner because they share one stack. Regulation 1-107, Combination of Emissions, states that: "Where air contaminants from two or more sources are combined prior to emission and there are no adequate and reliable means to establish the nature, extent and quantity of emission from each source, District Regulations shall be applied to the combined emission as if it originated in a single source." Therefore, the turbine is subject to the duct burner's emission limitations and vice versa.

40 CFR 60 Subparts D, Da, and Db

The requirements of 40 CFR 60 Subparts D, Da, and Db do not apply to the duct burner because its heat input rating is less than 250 MMBTU/hr.

V. Schedule of Compliance

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

"409.10 A schedule of compliance containing the following elements:

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

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

The BAAQMD Compliance and Enforcement Division conducted a review of compliance over the past year and found no records of continuing compliance problems at this facility. The compliance report is contained in Appendix A of this permit evaluation and statement of basis.

Changes to permit:

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

VI. Permit Conditions

The District has issued a number of authorities to construct (A/Cs) and permits to operate (P/O) to PEB 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 #22820 applies to the facility's emergency diesel engine-generator, S-1.)

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

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

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

Changes to permit:

- BAAQMD Condition #22010 for the emergency diesel generator, S-1, is out of date and will be replaced by BAAQMD Condition #22820, 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).
- Some of the bases of permit conditions will be rewritten for better clarity.

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 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	Citation of Limit	Federally Enforceable Emission Limit	Monitoring
S-1 Emergency diesel engine-generator, S-40 Gas Turbine, S-41 Duct Burner	BAAQMD 9-1-301	Ground level concentrations of SO_2 shall not exceed: 0.5 ppm for 3 consecutive minutes or 0.25 ppm averaged over 60 consecutive minutes or 0.05 ppm averaged over 24 hours	None
S-40 Gas Turbine, S-41 Duct Burner	BAAQMD 9-1-302	300 ppm (dry)	None
S-1 Emergency diesel engine-generator, S-40 Gas Turbine, S-41 Duct Burner	BAAQMD 9-1-304	Sulfur content of fuel < 0.5% by weight	Fuel Sulfur Content Certification by supplier for each lot
S-40 Gas Turbine, S-41 Duct Burner	BAAQMD Cond #366 Part 2	Maximum of 0.12% by wt. Sulfur in fuel oil	Fuel Sulfur Content Certification by supplier for each lot
	BAAQMD Cond #366 Part 3	Maximum of 0.25% by wt. Sulfur in fuel oil during periods of natural gas curtailment	Fuel Sulfur Content Certification by supplier for each lot
	BAAQMD Cond #366 Part 11	987 lb/day (natural gas); 40 tons/year (combined S-40 & 41)	Fuel Sulfur Content analysis either for each fuel oil delivery or once during each 24-hour period that fuel oil is fired.

SO_2 Discussion:

BAAQMD Regulation 9-1-301 and 9-1-302

All facility combustion sources are subject to the SO_2 emission limitations in District Regulation 9, Rule 1 (ground-level concentration and emission point concentration). In EPA's June 24, 1999 agreement with CAPCOA and ARB, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", EPA has agreed that natural-gas-fired combustion sources do not need additional monitoring to verify compliance with Regulation 9, Rule 1, since violations of the regulation are unlikely. Therefore, no monitoring is necessary for this requirement for S40, turbine, and S41, duct burner, when they are firing natural gas.

S1, S40, and S41 are expected to comply with Regulation 9-1-301, 302 and 304 since the sulfur content of diesel fuel fired at these sources is limited by permit conditions to 0.5% by weight or less as specified. The sulfur content will be monitored by vendor fuel certification.

Per the CAPCOA/ARB/EPA Agreement of 6/24/99 entitled "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", compliance with the diesel fuel sulfur content limit in BAAQMD Regulation 9-1-304 and the permit condition will be assured by certification of the sulfur content by the fuel supplier for each fuel delivery.

PM Sources

S# & Description	Citation of Limit	Federally Enforceable Emission Limit	Monitoring
S-1 Emergency diesel engine-generator	BAAQMD Regulation 6-303.1	≥Ringelmann No. 2 for no more than 3 minutes in any hour	None
	BAAQMD Regulation 6-310	0.15 gr/dscf	None
S-40 Gas Turbine, S-41 Duct Burner	BAAQMD 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
	BAAQMD Regulation 6-310.3	0.15 gr/dscf at 6% O2	None

PM Discussion:

BAAQMD Regulation 6 "Particulate Matter and Visible Emissions"

Visible Emissions

BAAQMD Regulation 6-1-301 limits visible emissions to no darker than 1.0 on the Ringelmann Chart (except for periods or aggregate periods less than 3 minutes in any hour). Visible emissions are normally not associated with combustion of gaseous fuels, such as natural gas. Sources S40 and S41 burn natural gas during normal operation, therefore, per the EPA's June 24, 1999 agreement with CAPCOA and ARB titled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", no monitoring is required to assure compliance with this limit for these sources. However, visible emission monitoring is required when these sources burn distillate oil.

Because S1 Emergency diesel engine-generator is fired exclusively on diesel fuel with a maximum sulfur content of 0.05% by weight, therefore exceedances of visible emissions of Ringelmann No. 2 are not expected. Therefore, S1 is expected to continue to comply

with Regulation 6-1-303.1. Moreover, the generator operates only during emergencies, so additional monitoring is not warranted.

Particulate Weight Limitation

BAAQMD Regulation 6-1-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Section 310.3 limits filterable particulate emissions from "heat transfer operations" to 0.15 gr/dscf @ 6% O_2. This is a "grain loading" standard.

Exceedances of the grain loading standards are normally not associated with combustion of gaseous fuels, such as natural gas. Sources S40 and S41 burn natural gas during normal operation, therefore, per the EPA's July 2001 agreement with CAPCOA and ARB entitled "CAPCOA/CARB/EPA Region IX Recommended Periodic Monitoring for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources: Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", no monitoring is required to assure compliance with this limit for these sources.

Potential to emit PM from S40 and S41 while burning fuel oil during natural gas curtailment is low and the operation is intermittent, additional monitoring to assure compliance with the emission limits is not justified and is not required. Requiring CEM or annual source tests for these sources would be onerous.

Potential to emit PM from S1, emergency diesel engine-generator is so low and the operation is intermittent, additional monitoring to assure compliance with the emission limits is not justified and is not required. Requiring CEM or annual source tests for this source 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-1 is subject to such a monitoring requirement.

Changes to permit:

- The description of the BAAQMD 6-1-301 and 6-1-303.1 limits in Section VII has been corrected to say "for no more than 3 minutes in any hour"
- New monitoring requirements of Subpart GG are added where applicable.
- The tables in Section VII will be updated to correspond with changes made to the tables in Section IV.

VIII. Test Methods

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

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

Changes to Permit:

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

This facility has the first type of permit shield.
This permit has no streamlining.

Following is the detail of the permit shield that is requested by the applicant.

1. The following requested permit shields are disallowed:

- None

2. The following permit shield is allowed:

A. Non-applicable Requirements

Pursuant to District Regulations 2-6-233 and 2-6-409.12, the federally enforceable regulations and/or standards cited in the following table are not applicable to the source or group of sources identified at the top of the table[s]. Enforcement actions and litigation may not be initiated against the source or group of sources covered by this shield based on the regulatory and/or statutory provisions cited.

Table IX
S-40, Turbine and S-41, Duct Burner

Citation	Title or Description (Reason not applicable)
Regulation 8, Rule 2	Organic Compounds - Miscellaneous Operations (Rule not applicable to combustion sources)

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

X. Glossary

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

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Compliance Status:

An inter-office memorandum from the Director of Compliance and Enforcement to the Director of Permit Services, presents a review of the compliance record of PE Berkeley, Inc. (Site #: B1326). The Compliance and Enforcement Division staff has reviewed the records for PE Berkeley, Inc. for the period from February 5, 1999 through October 31, 2011. This review was initiated as part of the District evaluation of an application by PE Berkeley, Inc. for a Title V renewal permit. During the period subject to review, activities known to the District include:

- There were 5 Notices of Violation issued during this review period. However, they have all been resolved to the satisfaction of the District.
- The District found no on-going instances of non-compliance.
- The District did not receive any alleged complaints.
- The facility is not operating under a Variance or an Order of Abatement from the District Board.
- There were no monitor excesses or equipment breakdowns reported or documented by District staff.

F. Differences between the Application and the Proposed Permit:

The renewal Title V permit application for the PEB facility was submitted on November 19, 2009. 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.

APPENDIX A

BAAQMD COMPLIANCE REPORT

COMPLIANCE & ENFORCEMENT DIVISION

Inter-Office Memorandum

November 28, 2011

TO: JOHN CHILADAKIS – DIRECTOR OF ENGINEERING

FROM: BRIAN BATEMAN – DIRECTOR OF ENFORCEMENT

SUBJECT: REVIEW OF COMPLIANCE RECORD OF:

PE BERKELEY, INC. – SITE # B1326

Background

This review was initiated as part of the District evaluation of an application by PE Berkeley, Inc. 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. 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.

Compliance Review

Compliance records were reviewed for the time period from February 5, 1999 through October 31, 2011. The results of this review are summarized as follows.

1. Violation History

Staff reviewed PE Berkeley, Inc. Annual Compliance Certifications and found no ongoing non-compliance and no recurring pattern of violations.

Staff also reviewed the District compliance records for the review period. During this period PE Berkeley, Inc. activities known to the District include:

REVIEW OF COMPLIANCE RECORD OF:
PE Berkeley, Inc – SITE #B1326
November 28, 2011
Page 2 of 4

District-issued **5** Notice of Violation(s):

NOV#	Regulation	Date Occur	# of Days	Comments	Disposition
A04347	2-6-502	3/17/01	1	Failure to submit monitoring reports, S-40	Resolved, Legal
A04348	2-6-502	3/17/01	1	Failure to submit monitoring reports, S-41	Resolved, Legal
A10739	2-6-502	3/17/02	1	Failure to submit monitoring reports by 3/16/02, S-40	Resolved, Legal
A10740	2-6-502	3/17/02	1	Omission of non-compliance in Compliance Certification	Resolved, Legal
A47505	1-522.6	12/20/05	1	Failure to maintain accuracy of Nitrogen Oxides analyzer Source Test #106-06	Resolved, Legal

The District received **17** notifications for Reportable Compliance Activities (RCA).

Episode	Date Occur	# of Days	Comments	Disposition
03F53	8/10/01	1	Service upgrade	No Action
03L74	3/8/02	1	3 hr avg excess for NOx	No Action
03L75	3/8/02	1	3 hr avg excess for CO	No Action
03M29	4/9/02	1	3 hr avg excess for NOx	No Action
03X59	6/25/03	1	Indicated NOx excess during shutdown	No Action
03Z25	9/12/03	1	Broken fan for stuck sample cooler	No Action
04B56	1/12/04	4	Switched to new monitoring equipment	No Action
04C22	2/21/04	3	Power supply failure	No Action
04K00	1/6/05	25	NOx analyzer failure	No Action
04R84	12/20/05	16	NOz analyzer and NOx converter degraded in unit	No Action
05A21	5/7/07	1	NOx analyzer power failure	No Action
05B99	9/1/07	2	NOx monitor failed daily calibration	No Action

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05C25	10/3/07	1	NOx monitor sample pump failure	No Action
05L14	2/24/09	35	Unit in alarm status AGM degrading	No Action
05Q54	11/28/08		Indicated excess during shutdown due to steam leak	No Action
05W17	9/26/10	9	O2 analyzer defective power supply	No Action
05X27	12/6/10	1	CO monitor failing calibration	No Action

2. Complaint History

The District received **0** air pollution complaints alleging PE Berkeley, Inc. as the source.

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 review period, the District received seventeen (17) notifications for RCA's. Zero (0) NOV's were issued as a result of these RCA's.

4. Enforcement Agreements, Variances, or Abatement Orders

There were no enforcement agreements, variances, or abatement orders for PE Berkeley, Inc. over the review period.

Conclusion

Following its review of all available facility and District compliance records from February 5, 1999 (the date of issuance of the initial Title V permit) through October 31, 2011, the District's Compliance and Enforcement Division has determined that PE Berkeley, Inc. was in intermittent compliance from the initial permit period through the present. However, PE Berkeley, Inc. 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 review period, 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.

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APPENDIX B

GLOSSARY

ACT
Federal Clean Air Act

APCO
Air Pollution Control Officer

ARB
Air Resources Board

BAAQMD
Bay Area Air Quality Management District

BACT
Best Available Control Technology

Basis
The underlying authority that allows the District to impose requirements.

CAA
The federal Clean Air Act

CAAQS
California Ambient Air Quality Standards

CAPCOA
California Air Pollution Control Officers Association

CEQA
California Environmental Quality Act

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

CO
Carbon Monoxide

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

District
The Bay Area Air Quality Management District

dscf
Dry Standard Cubic Feet

EPA
The federal Environmental Protection Agency.

Excluded
Not subject to any District regulations.

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

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

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

MACT
Maximum Available Control Technology. Term for the standards contained in 40 CFR 63, National Emission Standards for Hazardous Air Pollutants for Source Categories.

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

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

MOP
The District's Manual of Procedures.

NAAQS
National Ambient Air Quality Standards

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

NMHC
Non-methane Hydrocarbons (Same as NMOC)

NMOC
Non-methane Organic Compounds (Same as NMHC)

NOx
Oxides of nitrogen.

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

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

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

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

POC
Precursor Organic Compounds

PM
Particulate Matter

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

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

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.

SO_2
Sulfur dioxide

THC
Total Hydrocarbons (NMHC + Methane)

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

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

TPH
Total Petroleum Hydrocarbons

TRMP
Toxic Risk Management Plan

TSP
Total Suspended Particulate

VOC
Volatile Organic Compounds

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cfm	=	cubic feet per minute
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m^2	=	square meter
min	=	minute
mm	=	million
MMbtu	=	million btu
MMcf	=	million cubic feet
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