

Bay Area Air Quality Management District

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**Permit Evaluation
and
Statement of Basis
for
MINOR PERMIT REVISION of
MAJOR FACILITY REVIEW PERMIT**

**for
University of California, Berkeley
Facility #A0059**

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Application: 30570

November 2020

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Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a 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) more than 100 tons per year of nitrogen oxide and carbon monoxide.

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

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

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is A0059.

This application is for a minor permit revision of the Major Facility Review permit, with all changes to the permit, since the last renewal, identified in strikeout/underline format. These changes are discussed in this Statement of Basis. The Statements of Basis for prior issued Major Facility Review permits are incorporated by reference and are available upon request.

B. Facility Description

The facility has a cogeneration facility comprised of a multi-fuel turbine/generator and a duct burner to fire a heat recovery steam generator. The facility produces electricity that is sold to PG&E and steam that is used for space heat. The total electrical output of the facility is 24 MW. The facility has three 137 MMBtu/hr boilers that can be used if the cogeneration facility is not operating or is not producing enough steam. The boilers are limited to 10% of their capacity per BAAQMD Regulation 9-7-112.2.

The facility also has numerous emergency generators and a paint booth.

Emissions from the facility are primarily combustion emissions (NO_x, CO, PM₁₀, SO₂, 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.

The purpose of this minor revision is to add a 2020 762-hp diesel emergency generator. The engine received an Authority to Construct under BAAQMD Application 30568, which is attached in Appendix B and forms part of this Statement of Basis.

The potential emissions for maintenance and testing are shown below.

Pollutant	New Emission Increase (ton/yr)
POC	0.003
NO _x	0.168
PM ₁₀	0.003
PM _{2.5}	0.003
SO ₂	0.000
CO	0.050

C. Permit Content

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

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for 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 the Permit, Section I:

- Not Applicable/No Changes

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S24). Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302.

Significant sources are those sources that have a potential to emit of more than 2 tons 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) but have no District permits. This facility has no significant sources.

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A-24). If a source is also an abatement device, such as when an engine controls VOC emissions, it will be listed in

the abatement device table but will have an “S” number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or “A”) device. If the primary function of a device is a non-control function, the device is considered to be a source (or “S”).

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

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

Changes to the Permit, Section II:

Table II-A- Permitted Sources

Each of the following sources has been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. The capacities in this table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-301.

S#	Description	Make or Type	Model	Capacity
164	Emergency Diesel Generator	Caterpillar	C15 2020	762 hp

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards 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 this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V permit if they are considered “significant sources” as defined in BAAQMD Rule 2-6-239.

Changes to the Permit, Section III:

- Not Applicable/No Changes

IV. Source-Specific Applicable Requirements

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

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

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

Complex Applicability Determinations:

- No determinations are currently proposed in this action.

Changes to the Permit, Section IV:

Table IV-C
Source-specific Applicable Requirements
S148, S149, S150, S152, S153, S154, S155, S156, S157, S158, S160, S162, S163, [S164](#)
New Emergency Diesel Engine Generators

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 6, Rule 1	Particulate Matter, General Requirements (8/1/18)		
6-1-303	Ringelmann Number 2 Limitation	N	
6-1-303.1	Ringelmann Number 2 Limitation for engines	N	
6-1-305	Visible Particles	N	
6-1-310.1	Particulate Weight Limitation	N	
6-1-401	Appearance of Emissions	N	

Table IV-C
Source-specific Applicable Requirements
S148, S149, S150, S152, S153, S154, S155, S156, S157, S158, S160, S162, S163, [S164](#)
New Emergency Diesel Engine Generators

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
SIP Regulation 6	Particulate Matter and Visible Emissions (9/4/98)		
6-303	Ringelmann Number 2 Limitation	Y	
6-303.1	Ringelmann Number 2 Limitation for engines	Y	
6-305	Visible Particles	Y	
6-310	Particulate Weight Limitation	Y	
6-401	Appearance of Emissions	Y	
BAAQMD Regulation 9, Rule 1	Inorganic Gaseous Pollutants - Sulfur Dioxide (3/15/95)		
9-1-301	Limitations on Ground Level Concentrations	Y	
9-1-304	Fuel Burning (Liquid and Solid Fuels)	Y	
BAAQMD Regulation 9, Rule 8	Inorganic Gaseous Pollutants-Nitrogen Oxides and CO from Internal Combustion Engines (7/25/07)		
9-8-330	Emergency Standby Engines, Hours of Operation	N	
9-8-330.1	Unlimited hours during emergency	N	
9-8-330.3	Reliability related hours of operation	N	
9-8-530	Emergency standby engines, monitoring and recordkeeping	N	
40 CFR 60, Subpart A	Standards of Performance for New Stationary Sources – General Provisions (9/13/10)		
60.4	Address	Y	
60.4(b)	Requires Submission of Requests, Reports, Applications, and Other Correspondence to the Administrator	Y	
60.7	Notification and Record Keeping	Y	
60.8	Performance Tests	Y	
60.11	Compliance with Standards and Maintenance Requirements	Y	
60.11(a)	Compliance determined by performance tests	Y	
60.11(d)	Good air pollution control practice	Y	
60.12	Circumvention	Y	
60.13	Monitoring Requirements	Y	
60.13(a)	Applies to all continuous monitoring systems	Y	
60.13(b)	Monitors shall be installed and operation before performing performance tests	Y	
60.13(e)	Continuous monitors shall operate continuously	Y	
60.13(f)	Monitors shall be installed in proper locations	Y	
60.13(g)	Requires multiple monitors for multiple stacks	Y	

Table IV-C
Source-specific Applicable Requirements
S148, S149, S150, S152, S153, S154, S155, S156, S157, S158, S160, S162, S163, S164
New Emergency Diesel Engine Generators

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
60.14	Modification	Y	
60.15	Reconstruction	Y	
60.19	General Notification and Reporting Requirements	Y	
40 CFR 60, Subpart III	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (7/11/2006)		
60.4200	Am I subject to this subpart?	Y	
60.4200(a)	Applicable to owners/operators of stationary compression ignition (CI) internal combustion engines (ICE)	Y	
60.4200(a)(2)(i)	Stationary CI ICE that were manufactured after 7/11/2005 and are not fire pump engines	Y	
60.4205	What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI ICE?	Y	
60.4205(b)	Compliance with Section 60.4202	Y	
60.4206	How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?	Y	
60.4207	What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?	Y	
60.4207(a)	Use diesel fuel that meets the requirements of 40 CFR 80.510(a)	Y	
60.4207(b)	Use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel	Y	
60.4209	What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?	Y	
60.4209(a)	Install a non-resettable hour meter prior to the startup of an emergency engine	Y	
60.4211	What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?	Y	
60.4211(a)	Operate and maintain stationary CI ICE and control device per manufacturer's written instructions.	Y	
60.4211(b)	Methods to Demonstrate Compliance	Y	
60.4211(c)	Compliance by purchasing complying engine	Y	
60.4211(f)	Operation for maintenance and readiness checks are limited to 100 hours per year. No limit on emergency use. Any operation other than for maintenance, readiness checks, or emergencies is prohibited.	Y	
60.4212	What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?	Y	

Table IV-C
Source-specific Applicable Requirements
S148, S149, S150, S152, S153, S154, S155, S156, S157, S158, S160, S162, S163, [S164](#)
New Emergency Diesel Engine Generators

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
60.4214	What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?	Y	
60.4214(b)	Initial notification is not required for emergency engines.	Y	
40 CFR 63 Subpart ZZZZ	NESHAPS for Stationary Reciprocating Internal Combustion Engines (1/18/2008)		
63.6585	Am I subject to this subpart?	Y	
63.6590	What parts of my plant does this subpart cover?	Y	
63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60: meet the requirement of 40 CFR 63, Subpart ZZZZ by complying with 40 CFR Part 60, Subpart IIII	Y	
CCR, Title 17, Section 93115	ATCM for Stationary Compression Ignition Engines		
93115.5	Fuel Requirements	N	
93115.6	ATCM for Stationary CI Engines – Emergency Standby Diesel-Fueled CI Engine (>50 bhp) Operating Requirements and Emission Standards	N	
93115.6(a)	New Emergency Standby Diesel-Fueled CI Engine (> 50 bhp) Operating Requirements and Emission Standards	N	
93115.6(a)(1)	At-School and Near-School Provisions	N	
93115.6(b)(3)	New engines	N	
93115.6(a)(3)(A)	Emissions Standards and Hours of Operating Requirements	N	
93115.6(a)(3)(A)(1)	General Requirements	N	
93115.6(a)(3)(A)(1)(c)	50 hours/yr for maintenance & testing	N	
93115.6(a)(3)(B)	The District may establish more stringent standards	N	
93115.10	Recordkeeping, Reporting, and Monitoring Requirements	N	
93115.10(d)	Monitoring Equipment	N	
93115.10(d)(1)	Non-resettable hour meter	N	
93115.10(f)	Reporting Requirements for Emergency Standby Engines	N	

Table IV-C
Source-specific Applicable Requirements
S148, S149, S150, S152, S153, S154, S155, S156, S157, S158, S160, S162, S163, S164
New Emergency Diesel Engine Generators

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
93115.12	ATCM for Stationary CI Engines – Compliance Schedule for Owners or Operators of Four or More Engines (>50 bhp) Located within a District	N	
93115.12(a)	Compliance by 1/1/06 for engines complying by reducing hours of operation	N	
93115.15	Severability	N	
BAAQMD Condition # 22850		Y	
Part 1	Operating hour limit for reliability related activities (basis: "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.6(a)(4)(A)(1)(b))	Y	
Part 2	Allowable periods of operation (basis: "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.6(b)(3)(A)(1)(a))	Y	
Part 3	Non-resettable totalizing meter requirement (basis: "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.10(e)(1))	Y	
Part 4	Recordkeeping (basis: "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.10(g), Regulation 2-6-501))	Y	
Part 5	School Proximity Requirement (basis: "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.6(a)(1) or 93115.6(b)(2))	Y	
Condition #26537	Applies to S163	Y	
Part 1	Requirement for diesel particulate filter (Basis: Cumulative Increase and Regulation 2-5)	Y	
Part 2	Compliance with CARB Executive Order (Basis: CARB Executive Order DE-07-001-06)	Y	

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.”

The facility is required to continually comply with all applicable requirements cited in this permit. In addition, the facility will also need to comply with applicable requirements that become effective during the term of this permit on a timely basis.

Changes to the Permit, Section V:

- Not Applicable/No Changes

VI. Permit Conditions

During the Title V permit development, the District has reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. Each permit condition is identified with a unique numerical identifier, up to five digits.

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

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

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

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

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition imposed by the APCO 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.

Changes to the Permit, Section VI:

Condition 22850

S130, S131, S132, S148, S149, S150, S152, S153, S154, S155, S156, S157, S158, S160, S162, S163, [S164](#) Emergency Diesel Engine Engines

1. The owner/operator shall not exceed 50 hours per year per engine for reliability-related testing.

[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

2. The owner/operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, State or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited.

[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

3. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.

[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

4. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
 - a. Hours of operation for reliability-related activities (maintenance and testing).
 - b. Hours of operation for emission testing to show compliance with emission limits.
 - c. Hours of operation (emergency).
 - d. For each emergency, the nature of the emergency condition.
 - e. Fuel usage for each engine(s).

[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

5. At School and Near-School Operation:

If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply:

The owner/operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:

- a. Whenever there is a school sponsored activity (if the engine is located on school grounds)
- b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session.

“School” or “School Grounds” means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s).

“School” or “School Grounds” includes any building or structure, athletic field, or other areas of school property but does not include unimproved school property.

[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

VII. Applicable Limits and Compliance Monitoring Requirements

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

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

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

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

Changes to the Permit, Section VII:

Table VII-C
Applicable Limits and Compliance Monitoring Requirements
S148, S149, S150, S152, S153, S154, S155, S156, S157, S158, S160, S162, S163, [S164](#)
New Emergency Diesel Engine Generators

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Opacity	BAAQMD Regulation 6-1-303.1	N		>Ringelmann 2.0 for < 3 minutes in any hour		N	
Opacity	SIP Regulation 6-303.1	Y		>Ringelmann 2.0 for < 3 minutes in any hour		N	
FP	BAAQMD Regulation 6-1-310	N		0.15 gr/dscf		N	
FP	SIP Regulation 6-310	Y		0.15 gr/dscf		N	
SO ₂	BAAQMD 9-1-301	Y		Property Line Ground Level Limits: < 0.5 ppm for 3 minutes and < 0.25 ppm for 60 min. and < 0.05 ppm for 24 hours	None	N	N/A
	BAAQMD 9-1-304	Y		0.5% wt Sulfur in liquid fuel		N	
	CARB ATCM 93115.5(a) (1)	N		Sulfur content of diesel fuel < 15 ppmw		N	
Hours of Operation	BAAQMD 9-8-330.1	N		Unlimited hours for emergencies	BAAQMD 9-8-530.2	C P/M	Hour meter, Records of Operating Hours
	BAAQMD 9-8-330.3	N	1/1/2012	50 hours per calendar year or permit limit whichever is lower for reliability-related activities	BAAQMD 9-8-530	C P/M	Hour meter, Records of Operating Hours

Table VII-C
Applicable Limits and Compliance Monitoring Requirements
S148, S149, S150, S152, S153, S154, S155, S156, S157, S158, S160, S162, S163, [S164](#)
New Emergency Diesel Engine Generators

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
	BAAQMD Condition # 22850, Part 2	Y		Unlimited hours for emergencies	BAAQMD Condition # 22820, Parts 3 and 4	C P/M	Hour meter, record keeping
Hours of Operation	BAAQMD Condition # 22850, Part 1	Y		< 50 hours per year for reliability-related activities	BAAQMD Condition # 22820, Parts 3 and 4	C P/M	Hour meter, record keeping

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” as defined by Regulation 2-6-202.

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

Changes to the Permit, Section VIII:

- Not Applicable/No Changes

IX. Permit Shield:

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

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

This facility has the first type of permit shield.

Following is the detail of the permit shields that were requested by the applicant.

The following permit shield is allowed:

Table IX
S201, Turbine and S202, 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 the Permit, Section IX:

- Not Applicable/No Changes

X. Revision History

The revision history will be updated when the permit is renewed.

XI. Glossary

This section of the permit defines and explains acronyms, abbreviations, and other terms that are used in this permit.

Changes to the Permit, Section XI:

- Not Applicable/No Changes

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Compliance Status:

The responsible official for University of California Berkeley submitted a signed application form for minor revisions to the Title V permit, dated June 9, 2020.

F. Differences between the Application and the Proposed Permit:

The Title V permit minor revision application was submitted on June 11, 2020. The minor revision application and the previous permit are the basis for constructing the proposed Title V permit minor revision. All differences between the Title V minor revision application and the proposed permit have been discussed in this Statement of Basis.

Permit Evaluation and Statement of Basis: Site A0059, UC Berkeley, Berkeley, CA

The following NSR application has been discussed in this Statement of Basis and included in the proposed minor revision of the Title V Permit:

- NSR Application #30568: Permitting a new stationary emergency diesel engine-generator set (S164).

APPENDIX A - GLOSSARY

ACT

Federal Clean Air Act

APCO

Air Pollution Control Officer

ARB

Air Resources Board

BAAQMD

Bay Area Air Quality Management District

BACT

Best Available Control Technology

Basis

The underlying authority which allows the District to impose requirements.

CAA

The federal Clean Air Act

CAAQS

California Ambient Air Quality Standards

CAM

Compliance Assurance Monitoring per 40 CFR Part 64

CAPCOA

California Air Pollution Control Officers Association

CEM

Continuous Emission Monitor

CEQA

California Environmental Quality Act

CFR

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

CO

Carbon Monoxide

Cumulative Increase

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

District

The Bay Area Air Quality Management District

DPF

Diesel Particulate Filter

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.

Major Facility

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

MFR

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

MOP

The District's Manual of Procedures.

NAAQS

National Ambient Air Quality Standards

NESHAPS

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

NMHC

Non-methane Hydrocarbons (Same as NMOC)

NMOC

Non-methane Organic Compounds (Same as NMHC)

NO_x

Oxides of nitrogen.

NSPS

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

NSR

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

Offset Requirement

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

Phase II Acid Rain Facility

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

POC

Precursor Organic Compounds

PM

Particulate Matter

PM10

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

PSD

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

PTE

Potential to Emit as defined by BAAQMD Regulation 2-6-218

SIP

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

SO2

Sulfur dioxide

THC

Total Hydrocarbons (NMHC + Methane)

Title V

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

TOC

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

TPH

Total Petroleum Hydrocarbons

TSP

Total Suspended Particulate

VOC

Volatile Organic Compounds

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cu. ft.	=	cubic foot
cfm	=	cubic feet per minute
dscf	=	dry standard cubic foot
dscfm	=	dry standard cubic foot per minute
g	=	gram
gal	=	gallon
gpm	=	gallons per minute
gr	=	grain
hp	=	horsepower
h r	=	hour
lb	=	pound
in	=	inch
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
tpy	=	tons per year
yr	=	year

**APPENDIX B,
Permit Evaluation for Application 30580**

Engineering Evaluation
University of California, Berkeley
Equipment Location: 2625 Durant Avenue, Berkeley, CA 94720 (Bakar Bioengineer Hub)
Plant No. 59 (Site No. A0059)
Application No. 30568
Project Description: New Emergency Diesel Engine-Generator

BACKGROUND

University of California, Berkeley (UCB) has applied to obtain an Authority to Construct (A/C) and/or Permit to Operate (P/O) for the following equipment:

S-164 Stationary Emergency Diesel Engine-Generator Set

Make: Caterpillar; Model: C15; Model Year: 2020; Family: LCPXL15.2NZS
Horsepower: 762 BHp; Fuel Rate: 36.2 Gal/Hr; Heat Input: 5.068 MMBtu/Hr

The engine will be placed within the Bakar Bioengineer (sic) Hub of Woo Han Fai Hall, located on 2625 Durant Avenue in Berkeley, California. The engine will operate for emergency-use. The engine will operate unrestricted during emergency-use events. Annual maintenance and testing hours will be limited to 50 hours per year. The criteria pollutants associated with the engine are precursor organic compounds (POC), nitrogen oxides (NO_x), particulate matter 10 microns in size (PM₁₀), particulate matter 2.5 microns in size (PM_{2.5}), sulfur dioxide (SO₂), and carbon monoxide (CO). The engine meets the Environmental Protection Agency (EPA) Tier 2 final emission standards for engine-generator sets with an engine power rating greater than 750 horsepower. The engine will burn commercially available California Air Resources Board (CARB) low sulfur diesel fuel. The sulfur content of the diesel fuel shall not exceed 0.0015% by weight. The operation of the engine should not pose any health threat to the surrounding community or the public at large.

EMISSIONS CALCULATIONS

The applicant has submitted supporting documents, which include engine manufacturer specifications and engine emissions data. The following table provide a summary of the information provided by the applicant.

Table 1. Engine Specifications and Certified Emission Factors	
Engine Manufacturer	Caterpillar
Model	C15
Model Year	2020
Family Name	LCPXL15.2NZS
Engine Power Rating (hp)	762
Fuel Consumption¹ (gal/hr)	36.2
Maximum Input Heat Rating¹ (MMBtu/hr)	5.1
Engine Displacement² (cu in)	928
Engine Displacement² (L)	15.2
NO_x + NMHC³ (g/hp-hr)	4.1
NO_x³ (g/hp-hr)	4.00
NMHC^{3,4} (g/hp-hr)	0.07

CO (g/hp-hr)	1.19
PM⁵ (g/hp-hr)	0.07

¹ The energy content of diesel fuel is 140,000 Btu per gallon.

² 1 Liter = 61.0237 in³

³ Manufacturer specifications provide individual certified emission factors for NO_X and non-methane hydrocarbons (NMHC).

⁴ NMHC = POC

⁵ Particulate Matter (PM) = PM₁₀ = PM_{2.5}

Using the submitted information, the emission rate for each pollutant was determined. The following tables provide the potential to emit (PTE) and cumulative increase. The annual PTE is based on an assumed 100 hours for emergency events, plus allowable hours for maintenance and testing. The cumulative increase is based on allowable hours for maintenance and testing. For further information, please reference *Appendix A. "Project Emissions Review for New Source Review Application"* (Appendix A).

Table 2. Potential to Emit Source Emissions				
Pollutant	Hourly Emission Rate (lb/hr)	Daily Emission Rate¹ (lb/day)	Annual Emission Rate² (lb/yr)	Annual Emission Rate² (ton/yr)
POC	0.12	2.82	17.62	0.009
NO _X	6.71	161.13	1,007.05	0.504
PM ₁₀	0.12	2.82	17.62	0.009
PM _{2.5}	0.12	2.82	17.62	0.009
SO ₂ ³	0.01	0.18	1.15	0.001
CO	2.00	47.94	299.60	0.150

¹ Maximum daily operation assumed to be 24 hours.

² For the PTE, the maximum annual operation will include reliability-related activities as defined in Regulation 9-8-232 and 100 hours for emergency events.

³ SO₂ emissions are based upon the Permit Handbook. The Permit Handbook suggests the use of EPA AP-42, Table 3.4-1. Assuming a sulfur content of 15 ppm, pursuant to the fuel requirements of CARB, the emission factor equates to 0.001515 lb SO₂/MMBtu.

Table 3. Cumulative Increase Source Emissions				
Pollutant	Hourly Emission Rate (lb/hr)	Daily Emission Rate (lb/day)	Annual Emission Rate¹ (lb/yr)	Annual Emission Rate¹ (ton/yr)
POC	0.12	2.82	5.87	0.003
NO _X	6.71	161.13	335.68	0.168
PM ₁₀	0.12	2.82	5.87	0.003
PM _{2.5}	0.12	2.82	5.87	0.003
SO ₂	0.01	0.18	0.38	0.000
CO	2.00	47.94	99.87	0.050

¹ For the cumulative increase, the maximum annual operation will only include reliability-related activities as defined in Regulation 9-8-232.

TOXIC RISK SCREENING ANALYSIS

Pursuant to Regulation 2-5-110, a project shall not be subject to this rule if, for each toxic air contaminant (TAC), the total project emissions are below the acute and chronic trigger levels listed in Table 2-5-1 of this regulation. A project includes all new or modified sources of TACs within a 3-year period. The following table provides a review of the project TAC emission rates, which includes TAC emissions from New Source Review (NSR) Applications #27767 and #28429.

Table 4. Diesel Exhaust Particulate Matter Source Emissions				
App#	Date Final Disposition	Equipment Description (Source #)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
27767	P/O 06/21/2017	Emergency Standby Diesel Generator Set (S-162)	5.0E-02	2.5E+00
28429	P/O 03/22/2018	Emergency Standby Diesel Generator Set (S-163)	1.8E-02	8.8E-01
30568	Received 06/11/2020	Emergency Standby Diesel Generator Set (S-164)	1.2E-01	5.9E+00
Project			1.9E-01	9.3E+00

Table 5. Regulation 2-5 Threshold Review						
Pollutant	Hourly Emission Rate (lb/hr)	Acute Threshold (lb/hr)	Exceeds Acute Threshold? (Yes/No)	Annual Emission Rate (lb/yr)	Chronic Threshold (lb/yr)	Exceeds Chronic Threshold? (Yes/No)
Diesel Exhaust Particulate Matter	1.9E-01	--	--	9.3E+00	2.6E-01	Yes

The project exceeds the listed Table 2-5-1 chronic trigger level for diesel exhaust particulate matter. The project is subject to the requirements of this regulation. The hours of use for emergencies are not included pursuant to Regulation 2-5-111.

Pursuant to a Health Risk Assessment (HRA) completed on September 2, 2020, the maximum project cancer risk is 2.6 in a million and the chronic hazard index (HI) is 0.0020. The project is below a cancer risk of 10.0 in a million and a chronic HI of 1.0. Therefore, the project meets the risk requirements of Regulation 2-5-302. Pursuant to Regulation 2-5-301, S-164 exceeds a cancer risk of 1.0 in a million and is subject to Best Available Control Technology for Toxics (TBACT). S-164 meets TBACT with a diesel exhaust particulate matter emission factor equal to or less than 0.15 g/hp-hr.

BEST AVAILABLE CONTROL TECHNOLOGY

Pursuant to Regulation 2-2-301, Best Available Control Technology (BACT) shall apply to new or modified sources with a PTE equal to or greater than 10 lb per highest day of any single regulated air pollutant. S-164 will emit more than 10 lb/day of NO_x and CO. Therefore, S-164 is subject to BACT for NO_x and CO.

BACT for a stationary emergency diesel engine is presented in the *“BAAQMD BACT Guideline – IC Engine-Compression Ignition: Stationary Emergency, Non-Agricultural, Non-Direct Drive Fire Pump”* (BACT Guideline). The following table provides a summary of the BACT requirements.

Table 6. Stationary Emergency Diesel Engine BACT Requirements			
Pollutant	BACT Requirement	Engine Emission Factor (g/hp-hr)	Compliant with BACT Requirement?
NO _x	CARB ATCM Standard for NMHC+NO _x at the applicable power rating, which is 4.8 g/hp-hr for engines rated greater than 750 hp.	4.1	Yes
CO	CARB ATCM Standard for CO at the applicable power rating, which is 2.6 g/hp-hr for engines rated greater than 750 hp.	1.19	Yes

S-164 meets the requirements of BACT.

OFFSETS

Pursuant to Regulation 2-2-302, offsets must be provided for any new or modified source at a facility that emits, or is permitted to emit, more than 10 tons per year of POC or NO_x. Furthermore, pursuant to Regulation 2-2-303 offsets must be provided for any new or modified source at a major facility with a cumulative increase that exceeds 1.0 ton per year of PM₁₀, PM_{2.5}, or SO₂. For purposes of Regulation 2-2-303, a major facility is defined as a facility that is permitted to emit 100 tons per year or more of PM₁₀, PM_{2.5}, or SO₂.

The following table provides a summary of the facility’s PTE.

Table 7. Facility Potential to Emit Review			
Pollutant	Existing Potential to Emit (ton/yr)	New Emission Increase (ton/yr)	New Potential to Emit (ton/yr)
POC	39.231	0.009	39.240
NO _x	144.409	0.504	144.913
PM ₁₀	17.312	0.009	17.321
PM _{2.5}	17.312	0.009	17.321
SO ₂	42.417	0.001	42.418
CO	412.923	0.150	413.073

UCB has a PTE of more than 35 tons per year of POC and NO_x. Therefore, the facility is required to provide POC and NO_x credits for any un-offset cumulative increase at a 1.15 to 1 ratio. In addition, the facility is required to provide POC and NO_x credits, which have been provided Small Facility Banking Account Credits, at a 1 to 1 ratio. Furthermore, the facility is not a major source for PM₁₀, PM_{2.5}, or SO₂. Therefore, the facility is not subject to the offset requirements of Regulation 2-2-303.

The following table provides a summary of the facility's cumulative increase.

Table 8. Facility Cumulative Increase Review			
Pollutant	Existing Cumulative Increase (ton/yr)	New Emission Increase (ton/yr)	New Cumulative Increase (ton/yr)
POC	0.986	0.003	0.989
NO _x	4.333	0.168	4.501
PM ₁₀	0.092	0.003	0.095
PM _{2.5}	0.001	0.003	0.004
SO ₂	0.065	0.000	0.065
CO	133.992	0.050	134.042

¹ The existing cumulative increase for PM_{2.5} includes emission increase from NSR Applications #27767 and #28429.

The following table provides a summary of the offsets required.

Table 9. Facility Emission Reduction Credits Review							
Pollutant	Facility Cumulative Increase (ton/yr)	Small Facility Banking Account Credits Provided (ton/yr)	Small Facility Banking Account Offset Ratio	Emission Reduction Credits Owed to Small Facility Banking Account (ton/yr)	Un-Offset Cumulative Increase (ton/yr)	Un-Offset Ratio	Emission Reduction Credits Owed (ton/yr)
POC	0.989	0.986	1:1	0.986	0.003	1.15:1	0.003
NO _x	4.501	4.333	1:1	4.333	0.168	1.15:1	0.193
PM ₁₀	0.095	--	--	--	--	--	--
PM _{2.5}	0.004	--	--	--	--	--	--
SO ₂	0.065	--	--	--	--	--	--
CO	134.042	--	--	--	--	--	--

The facility is required to provide Emission Reduction Credits (ERC) in the amount of 0.989 ton/yr of POC and 4.526 ton/yr of NO_x. The facility has provided ERC Certificates #1627, #1629, #1631, and #1633 for the offsets owed.

NEW SOURCES PERFORMANCE STANDARDS

The engine is subject to the following New Source Performance Standards (NSPS).

40 CFR Part 60, Subpart III

According to §60.4200(a)(1)(i), the engine is subject to the requirements of this subpart.

Pursuant to §60.4205(b), owners or operators of 2007 model year and later stationary emergency diesel engine-generator sets with a displacement of less than 30 liters must comply with §60.4202. In accordance with §60.4202(a)(2), the emission standards must meet those established in 40 CFR 89.112 and 40 CFR 89.113.

Pursuant to 40 CFR 89.112, engines with a rated power greater than 560 kW (750 hp) must meet the following emission standards.

Table 10. Review of Standards for Engines Rated Greater Than 560 KW (750 Hp)			
Pollutant	NSPS Emission Standard (g/kW-hr)	NSPS Emission Standard (g/hp-hr)	Manufacturer's Emission Rate (g/hp-hr)
NO _x + NMHC	6.4	4.8	4.1
CO	3.5	2.6	1.2
PM	0.20	0.15	0.07

The aforementioned analysis demonstrates that the engine will meet the emission standards of 40 CFR 89.112. In addition, the engine is expected to meet the following opacity standards identified in 40 CFR 89.113.

Table 11. 40 CFR 89.113 Opacity Standards	
Mode	Opacity (%)
Acceleration	20
Lugging	15
Peak (During acceleration or lugging modes)	50

§60.4206 and §60.4211(a) require the owner or operator to maintain and operate the engine according to the manufacturer's written instructions or owner/operator developed procedures approved by the manufacturer for the entire life of the engine. The engine is expected to be maintained and operated in accordance with the requirements of §60.4206 and §60.4211(a).

§60.4207(b) requires diesel fuel consumed after October 1, 2010 to meet the requirements of 40 CFR 80.510(b), which is a maximum sulfur content of 15 parts per million (ppm). The fuel consumed is expected to meet this requirement.

§60.4209(a) requires the installation of a non-resettable hour meter. This will be included as a permit requirement.

The engine is certified to the requirements of 40 CFR Part 89 and is expected to comply with §60.4211(c).

Per §60.4211(f), the engine will be allowed to operate unrestricted during emergencies. In addition, the engine will be limited to less than 100 hours per calendar year for maintenance and testing. However, the requirements of the CARB Airborne Toxic Control Measure (ATCM) may further limit the maintenance and testing hours.

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The engine is subject to the following National Emission Standards for Hazardous Air Pollutants (NESHAP).

40 CFR Part 63, Subpart ZZZZ

Pursuant to §63.6585(c), engines located at an area source of hazardous air pollutants (HAP) are subject to the requirements of this subpart.

However, according to §63.6590(a)(1)(iii) & §63.6590(c)(1), compression ignition engines that commenced construction on June 12, 2006 or later and that operate at a facility that emits or has the potential to emit any single HAP at a rate of less than 10 tons per year or any combination of HAPs at a rate of less than 25 tons per year, must comply instead with 40 CFR Part 60 Subpart III, “Standards of Performance of Stationary Compression Ignition Internal Combustion Engines.” The engine is expected to meet the requirements of this subpart by meeting the standards of 40 CFR Part 60 Subpart III, “Standards of Performance of Stationary Compression Ignition Internal Combustion Engines.”

CALIFORNIA AIR RESOURCES BOARD AIRBORNE TOXIC CONTROL MEASURE FOR STATIONARY COMPRESSION IGNITION ENGINES

§93115.2 requires any person who purchases a stationary compression ignition engine to meet the requirements of the ATCM.

As of January 1, 2006, owners and operators of new engines are required to consume CARB diesel fuel in accordance with §93115.5.

According to §93115.6(a)(1), an engine located within 500 feet of school grounds shall not operate for non-emergency use between 7:30 A.M. and 3:30 P.M. on days when school is in session. However, the source is not located within 500 feet of school grounds.

Pursuant to §93115.6(a)(3), a new engine must meet the following requirements as of January 1, 2005.

- ATCM “Table 1: Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines” for same model year and maximum engine power, which is shown below;

Table 12. ATCM <u>“Table 1 Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines”</u>				
Maximum Engine Power	Model Year	PM (g/bhp-hr)	NMHC+NO_x (g/bhp-hr)	CO (g/bhp-hr)
hp > 750 (kW > 560)	2008+	0.15	4.8	2.6

- After December 31, 2008, be certified to the new non-road compression-ignition engine emission standard for all pollutants for 2007 and later model year engines as specified in 40 CFR, Part 60, Subpart III; and,
- Not operate more than 50 hours per year for maintenance and testing purposes, except as provided in §93115.6(a)(3)(A)(2). This regulation does not limit engine operation for emergency use and for emission testing to show compliance with §93115.6(a)(3).

The engine is expected to meet the aforementioned emission requirements and will be limited, through permit condition, to operate unrestricted only for emergencies and a maximum of 50 hours per year for maintenance and testing purposes. In addition, the permit will include near-school operating provisions that meet the requirements of §93115.6(a)(1).

Pursuant to §93115.10(d)(1) a non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed upon engine installation. Although the ATCM requires the owner/operator of the engine to keep monthly records of the following for a minimum of 36 months, with the prior 24 months readily accessible at the site and the prior 25 to 36 months available to the District within 5 working days from the request, the facility is a major facility and will retain records for a minimum of 5 years.

- Emergency use hours of operation;
- Maintenance and testing hours of operation;
- Hours of operation for emission testing to show compliance with §93115.6(a)(3) and §93115.6(b)(3);
- Initial start-up testing hours;
- If applicable, hours of operation to comply with the requirements of NFPA 25;
- Hours of operation for all uses other than those specified in §93115.10(g)(1)(A) through (D);
- If applicable, DRP engine hours of operation; and,
- The fuel used.

STATEMENT OF COMPLIANCE

Regulation 2, Rule 6

UCB is a major facility and is subject to the requirements of Regulation 2-6. The addition of the engine will require a revision to the federally enforceable conditions of a major facility. The revisions are not considered a significant permit revision or an administrative permit amendment. UCB has submitted Major Facility Review (MFR) Application #30570 for the minor permit revision pursuant to Regulation 2-6-406.

Regulation 6, Rule 1

Pursuant to Regulation 6-1-303 a person shall not emit, from an internal combustion engine with less than a 25-liter displacement, for a period or periods aggregating more than three minutes in any hour, a visible emission that is as dark or darker than No. 2 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree, nor shall said emission, as perceived by an opacity sensing device in good working order, where such device is required by District Regulations, be equal to or greater than 40% opacity. The engine is expected to meet the requirements of Regulation 6-1-303.

Regulation 9, Rule 1

The engine is subject to the SO₂ limitations of Regulation 9-1-301 (Limitations on Ground Level Concentrations of Sulfur Dioxide), Regulation 9-1-302 (Limitations Sulfur Dioxide Emissions) and 9-1-304 (Burning of Solid and Liquid Sulfur Dioxide Fuel). Pursuant to Regulation 9-1-301, the ground level concentrations of SO₂ shall not exceed 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. Pursuant to Regulation 9-1-302, a person shall not emit from any source, a gas stream containing SO₂ in excess of 300 ppm (dry). Lastly, pursuant to Regulation 9-1-304, a person

shall not burn any liquid fuel having a sulfur content in excess of 0.5% by weight. Compliance with Regulation 9-1 is expected due to the use of CARB low sulfur diesel fuel with a sulfur content of 0.0015% by weight.

Regulation 9, Rule 8

This rule limits the emissions of NO_x and CO from stationary internal combustion engines with an output rated by the manufacturer at more than 50 brake horsepower. The engine is intended to operate at a specific site for more than one year and will be attached to a foundation at the site. Therefore, the requirements of this rule apply.

In addition, the engine will be used for emergency use and is defined as an emergency standby engine pursuant to Regulation 9-8-230.

Per Regulation 9-8-110.5, emergency standby engines are exempt from the requirements of Regulations 9-8-301 through 305, 9-8-501, and 9-8-503. However, emergency standby engines are subject to the requirements of Regulation 9-8-330. Pursuant to Regulation 9-8-330, the engine will be allowed to operate 50 hours per calendar year for reliability-related activities. The requirements of the CARB ATCM are equivalent to the allowed annual reliability-related activity hours of this rule.

In accordance with Regulation 9-8-530, the engine shall be equipped with a non-resettable totalizing meter that measures hours of operation or fuel usage. Monthly records for the following shall be kept for at least 2 years and be made available to District staff upon request.

- Total hours of operation;
- Emergency hours of operation; and,
- The nature of the emergency condition for each emergency.

However, the facility is a major facility and will retain records for a minimum of 5 years.

The engine is expected to meet the aforementioned requirements.

California Environmental Quality Act and Regulation 2-1

Pursuant to Regulation 2-1-311, an application for a proposed new or modified source will be classified as ministerial and will accordingly be exempt from the California Environmental Quality Act (CEQA) requirement of Regulation 2-1-310 if the District's engineering evaluation and basis for approval or denial of the permit application for the project is limited to the criteria set forth in Regulation 2-1-428 and to the specific procedures, fixed standards, and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. The evaluation of the proposed project was performed in accordance with comparable criteria set forth in Chapter 2.3.1 of the Permit Handbook and is considered ministerial.

California Health & Safety Code §42301.6 and Regulation 2-1-412

Pursuant to California Health & Safety Code §42301.6(a), prior to approving an application for a permit to construct or modification of a source, which is located within 1,000 feet from the outer boundary of a school site, the District shall prepare a public notice as detailed in §42301.6. §42301.9(a) defines a "school" as any public or private school used for the purposes of the

education of more than 12 children in kindergarten or any grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.

The source will be located greater than 1,000 feet from the nearest school. The requirements of the California Health & Safety Code §42301.6(a) do not apply.

PERMIT CONDITIONS

Permit Condition #22850

1. The owner/operator shall not exceed 50 hours per year per engine for reliability-related testing. [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
2. The owner/operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, State or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited. [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
3. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained. [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
4. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
 - a. Hours of operation for reliability-related activities (maintenance and testing).
 - b. Hours of operation for emission testing to show compliance with emission limits.
 - c. Hours of operation (emergency).
 - d. For each emergency, the nature of the emergency condition.
 - e. Fuel usage for each engine(s).[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

5. At School and Near-School Operation: If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply:

The owner/operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:

- a. Whenever there is a school sponsored activity (if the engine is located on school grounds).

- b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session. "School" or "School Grounds" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, athletic field, or other areas of school property but does not include unimproved school property.
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

End of Conditions

RECOMMENDATION

Issue an Authority to Construct to University of California, Berkeley for the following equipment:

S-164 Stationary Emergency Diesel Engine-Generator Set

**Make: Caterpillar; Model: C15; Model Year: 2020; Family: LCPXL15.2NZZ
Horsepower: 762 BHp; Fuel Rate: 36.2 Gal/Hr; Heat Input: 5.068 MMBtu/Hr**

By: _____

Alfonso Borja

Senior Air Quality Engineer

Date: _____