SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL DISTRICT

Guideline for Expedited Application Review (GEAR)
11D.1-Diesel-Fired Emergency Standby IC Engines Powering Electrical Generators

Approved By: Signed Arnaud Marjollet Director of Permit Services	Date: 9/28/16 Revised: 7/11/19

Purpose: To outline procedures for expedited processing of Authority to Construct (ATC) applications for emergency IC engines that use diesel fuel and power electrical generators.

I. Applicability

This policy applies to Permit Services' actions relating to and dealing with emergency diesel-fired internal combustion engines. This applies to any diesel-fired internal combustion engine rated greater than 50 hp and is used only as a temporary replacement for electric or mechanical power during an unforeseen event such as an unplanned power outage or fire.

This policy addresses a new emergency standby diesel-fired IC engine or replacement of an existing emergency standby engine, powering electrical generators. Emergency diesel engines powering fire-pumps or drinking water systems are not covered by this policy.

II. Permit Application and Supplementary Forms

The applicant must complete and submit an ATC application form along with an Emergency/Low Use IC Engines for Non-Agricultural Operations Supplemental Form. The applicant should provide an emissions statement from the manufacturer or California Air Resources Board (CARB); a site diagram showing the location of the engine in relation to neighboring residences and businesses; the height and diameter of the exhaust; and a building blueprint depicting distance of the engine to doors and windows, if located in a building.

III. Priority Processing

The applications will be processed on an expedited basis if a complete application, including supplemental information, and correct filing fees for each permit unit are submitted. Final action on all projects will occur within thirty days after the submittal of the complete package.

In order to meet the expedited time frame, the engineer assigned for preliminary review will be automatically assigned the final review and may simultaneously submit the preliminary and final engineering evaluations for review to a lead engineer.

The lead engineer may review the evaluation and suggest corrections for the assigned engineer to address. Once corrections to the evaluation are complete, the lead engineer will sign and return the final ATC and invoice to mailed.

The priority processing will be pre-empted if:

- The application is subject to any public noticing requirements, including school notice per California Health & Safety Code (CH&SC) 42301.6 (within 1000 feet of any K-12 school), or
- The equipment fails to meet the current Best Available Control Technology (BACT), Toxics Best Available Control Technology (T-BACT), Health Risk Analysis (HRA), Ambient Air Quality Analysis (AAQA), or Airborne Toxic Control Measure (ATCM) Tier Standard, or
- The application is part of a stationary source project where issuance of the permit will affect the outcome of the stationary source project.

IV. Application Review

The use of this standard Application Review will ensure:

A. The proposed project complies with BACT and ACTM requirements as specified in the District's current BACT Clearinghouse and ACTM policy.
B. The permit has enforceable daily emission limitations (DELs)
C. The proposed project complies with all applicable prohibitory rules.
D. A site-specific HRA was conducted for all applications.

V. Standard Evaluation Guidelines and IC Engine Regulations

A. Standard Evaluation Guidelines

The following outlines the standard review for emergency standby IC engines fired on diesel. Standard emission factors and emission control efficiencies are included and may be used in lieu of manufacturer's information, provided the engine specific emissions data is not available.

The preliminary review and HRA should be completed first so that the appropriate information for the project can then be used throughout the evaluation. The following guidelines should be considered when processing the GEAR.

1. Project Location, SIC Code, and Equipment Description:

To ensure the appropriate classification and billing, verify that the facility has the SIC code, billing address, facility address, and contact information entered correctly in PAS (see FYI 15). If this is a new facility, enter the information in PAS for the facility and the project.

When creating a new ATC in PAS, the following standard description will be used for a new emissions unit or replacement engine:

X-XXXX-XX-XX: [XXX] BHP [MAKE] MODEL [MODEL #] TIER [X] CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN [ELECTRICAL GENERATOR]

2. Emission Control Technology Evaluation:

Internal combustion engines produce air contaminants such as sulfur oxides (SO_x), nitrogen oxides (NO_x), volatile organic compounds (VOC), carbon moNOxide (CO), particulate matter 10 microns or less in aerodynamic diameter (PM_{10}). Nearly of all the pollutants are emitted through the exhaust; however, some PM and VOC escape from the crankcase as a result of blowby (gases vented from the oil pan).

NO_x, VOC, CO, and PM_{10} emissions are minimized with the use of a compression-ignited engine that is EPA certified as specified in 40 CFR Part 89, which identifies Tier 1 thru Tier 3 emission levels, or the Federal Register, Vol. 69, No. 124, June 29, 2004, which identifies Tier 4 emission levels.

Common control equipment used with IC engines is described below:

<u>NO_x control</u>
NO_x control for diesel IC engines focuses on controlling the ignition process by adjusting the air-to-fuel ratio for either a rich-burn or lean-burn process and reducing combustion temperature. A lean-burn process leaves excess oxygen in the air available to react with nitrogen to form thermal NO_x. In contrast, a rich-burn process impedes NO_x formation by using up the available oxygen, but other pollutants may be increased as a result of the excess un-burnt fuel.

Fuel injection promotes complete combustion by modifying a lean-burn process to burn more fuel-rich. In a similar manner, a turbocharger promotes more complete burning of the fuel, reducing the NO_x emission rate from the engine.

The intercooler/aftercooler functions in conjunction with the turbocharger to reduce the inlet air temperature. By reducing the temperature through sufficient mixing of the air, the peak combustion temperature is lowered, which reduces the formation of thermal NO_x.

When retarding the fuel injection timing by 4° from standard or having the fuel injection timing advanced to no greater than 16° before top dead center (BTDC), combustion occurs when the engine piston is positioned at the maximum combustion chamber volume and lowest

pressure. Thus, peak combustion temperature lowers and reduces the formation of thermal NO_x.

Post combustion control devices like selective catalytic reduction (SCR) and non-selective catalytic reduction (NSCR) are available, but not widely used for diesel engines due to catalyst fouling and high cost. SCR reduces NO_x by reacting with ammonia to convert NO_x into nitrogen. NSCR requires a fuel-rich process to reduce oxygen and promote the effectiveness of the catalyst.

PM_{10} control

PM emissions from diesel combustion occur from burning carbon, sulfur, and other impurities in the fuel. Clean fuel with low-sulfur and complete combustion reduces particulate emissions. Post combustion, a particulate filter decreases exhaust stack PM_{10} emissions. Catalytic filters, such as NSCR, lower PM_{10} exhaust in addition to NO_x.

SO_x control

The use of very low-sulfur diesel fuel (0.0015% by weight sulfur maximum) reduces SO_x emissions from standard diesel fuel. As of September 1, 2006, all diesel fuel sold in California is required to have a sulfur content of 0.0015% by weight. Therefore, SO_x emissions will be calculated using this diesel fuel sulfur content.

CO control

CO emissions depend on the air-to-fuel ratio and combustion temperature. Excess oxygen from a lean-burn process reacts with carbon to form CO and CO_2; CO quantities decrease with excess oxygen since CO converts fully to CO_2. In contrast, a rich-burn process does not supply enough oxygen to react with hydrocarbons in the fuel and complete conversion does not occur from CO to CO_2.

Three-way catalytic filters, or NSCR, drive a fuel rich process toward complete combustion, thus lowering CO formation. Catalytic reduction control efficiency is 90% or better when functioning properly.

VOC control

Clean fuel with few additives and complete combustion reduce VOC emissions. Other than proper combustion techniques, VOC emissions are controlled through catalytic filters.

Fugitive PM_{10} and VOC emissions

The Positive Crankcase Ventilation (PCV) system reduces fugitive crankcase VOC and PM_{10} emissions by capturing emissions from the crankcase then routing through the engine and out the exhaust. Newer engines may incorporate the PCV or manage crankcase emissions in the design of the engine. Therefore, a standard external PCV is not necessary for these newer designed Tier 3 or higher engines.

The emission control devices/technologies and their effect on diesel engine emissions detailed above are from *Non-catalytic NO_x Control of Stationary Diesel Engines*, by Don Koeberlein, CARB.

3. Calculations:

a) Assumptions:

Common assumptions and unit conversion factors used in emissions calculations must be listed under the calculations section of the review. The emergency operating schedule is generally 24 hrs/day, but may be less depending on the HRA results. Non-emergency operating schedule depends on requirements and the HRA results.

b) Emission Factors:

The engine manufacturer's specific emission factors (ISO 8178 or comparable emissions test) are the most accurate and appropriate emission factors to use for this evaluation, unless additional control technology is installed and a source test provided in the application. The family CARB certification may be used only if the engine specific emissions factors are not available.

If this is a new IC engine installation and the emissions factor does not meet the latest EPA Tier Certification level, then this project may not be approvable.

Tier 3 Diesel-Fired IC Engines Estimated Emissions						
Horsepower Range (bhp)	≥ 50 to < 100	≥ 100 to < 175	≥ 175 to < 300	≥ 300 to < 600	≥ 600 to < 750	≥ 750[1]
Emission Factor (g/bhp-hr)						
NO_x	3.3	2.8	2.8	2.8	2.8	4.5
PM_{10}	0.3	0.22	0.15	0.15	0.15	0.15
CO	3.7	3.7	2.6	2.6	2.6	2.6
VOC	0.2	0.2	0.2	0.2	0.2	0.3

For modifications (pre-project emission factors) or in-house PTO only, use the applicable AP-42 emission factors listed below if engine specific emissions factors or the family certification is not available.

Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO_x	14.06	AP-42 (10/96) Table 3.3-1
SO_x	0.0051	Low-sulfur fuel
PM_{10}	0.92	AP-42 (10/96) Table 3.3-1
CO	3.03	AP-42 (10/96) Table 3.3-1

[1] Note, 750 bhp and greater engines do not have an associated Tier 3 emission standards. The standards shown for this horsepower range are Tier 2 standards.

VOC	1.14 or 1.12	AP-42 (10/96) Table 3.3-1[2]

If the modification post-project emissions factor does not meet the current year BACT, i.e. EPA Tier Certification level, then this project may not be approvable.

B. Emergency IC Engine Regulations

District Rule 4702

Emergency standby engines are subject to District Rule 4702 requirements. Emergency standby engines are defined in Section 2.0 of District Rule 4702 as follows:

> *3.15 Emergency Standby Engine: an internal combustion engine which operates as a temporary replacement for primary mechanical or electrical power during an unscheduled outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the operator. An engine shall be considered to be an emergency standby engine if it is used only for the following purposes: (1) periodic maintenance, periodic readiness testing, or readiness testing during and after repair work; (2) unscheduled outages, or to supply power while maintenance is performed or repairs are made to the primary power supply; and (3) if it is limited to operate 100 hours or less per calendar year for non-emergency purposes. An engine shall not be considered to be an emergency standby engine if it is used: (1) to reduce the demand for electrical power when normal electrical power line service has not failed, or (2) to produce power for the utility electrical distribution system, or (3) in conjunction with a voluntary utility demand reduction program or interruptible power contract.*

The 100 hour requirement is less stringent than the Airborne Toxic Control Measure operating limitations for emergency standby engines. Therefore, compliance with the applicable Airborne Toxic Control Measure requirements ensures compliance with the 100 hour requirement.

The following exemption in Section 4.2 of District Rule 4702 applies to emergency standby engines:

> *4.2 Except for the requirements of Section 5.9 and Section 6.2.3, the requirements of this rule shall not apply to:*
> *4.2.1 An emergency standby engine as defined in Section 3.0 of this rule, and provided that it is operated with a nonresettable elapsed operating time meter. In lieu of a nonresettable time meter, the owner of an emergency engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.*

[2]According to AP-42, the use of a PCV valve reduces crankcase VOC emissions to 1.12 g/hp-hr.

Pursuant to the exemption in Section 4.2, the following requirements of Section 5.9 are applicable to emergency standby engines

Section 5.9 requires the owner to:

5.9.2 Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.

5.9.3 Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.

5.9.4 Install and operate a nonresettable elapsed operating time meter. In lieu of installing a nonresettable time meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by Permit-to-Operate or Permit-Exempt Equipment Registration condition. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Finally, the exemption in Rule 4702 Section 4.2 for emergency standby engines requires the engines to comply with Section 6.2.3, shown below.

6.2.3 An owner claiming an exemption under Section 4.2 or Section 4.3 shall maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and provided to the APCO upon request. The records shall include, but are not limited to, the following:

6.2.3.1 Total hours of operation,
6.2.3.2 The type of fuel used,
6.2.3.3 The purpose for operating the engine,
6.2.3.4 For emergency standby engines, all hours of non-emergency and emergency operation shall be reported, and
6.2.3.5 Other support documentation necessary to demonstrate claim to the exemption.

40 CFR Part 60 Subpart IIII

Purusant to §60.4200 of 40 CFR Part 60 Subpart IIII, the requirements of this Subpart are applicable to emergency engines where construction was commenced after July 11, 2005, and where the engine was manufactured after April 1, 2006.

The following emission standards from Subpart IIII apply to emergency IC engines:

§60.4205

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

(c) Owners and operators of fire pump engines with a displacement of less than 30 liters pollutants.

(d) Owners and operators of emergency stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must meet the requirements in paragraphs (d)(1) and (2) of this section.

(1) Reduce NO_x emissions by 90 percent or more, or limit the emissions of NOXin the stationary CI internal combustion engine exhaust to 1.6 grams per KW-hour (1.2 grams per HP-hour).

(2) Reduce PM emissions by 60 percent or more, or limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.15 g/KW-hr (0.11 g/HP-hr).

The District's current BACT Guideline requires the use of an engine that meets the latest applicable EPA Tier standards. The latest EPA Tier standards are lower than or equivalent to the 40 CFR Part 60 Subpart IIII emission limits; thus compliance is expected.

The following fuel requirements apply to emergency IC engines:

§60.4207

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel

CARB certified diesel-fuel meets both the October 1, 2007, and the October 1, 2010, fuel requirements of Subpart IIII.

The following monitoring requirements apply to emergency IC engines:

§60.4209

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine, you must install a non-resettable hour meter prior to startup of the engine.

(b) If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

§60.4211

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.

(e) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. Anyone may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. For owners and operators of emergency engines meeting standards under §60.4205 but not §60.4204, any operation other than emergency operation, and maintenance and testing as permitted in this section, is prohibited.

Note, CARB's Stationary ATCM limits operation of emergency diesel engines to 50 hours/year for readiness and maintenance testing.

Title 17 CCR 93115 (Stationary IC Engines)

Emergency standby engines are subject to Title 17 CCR 93115 (ATCM) requirements.

The stationary compression ignited engine ATCM defines emergency standby engines as follows:

95.3115.4(a)(29) Emergency Standby Engine" means a stationary engine that meets the criteria specified in (A) and (B) and any combination of (C) or (D) or (E) below:

(A) is installed for the primary purpose of providing electrical power or mechanical work during an emergency use and is not the source of primary power at the facility; and

(B) is operated to provide electrical power or mechanical work during an emergency use; and

(C) is operated under limited circumstances for maintenance and testing, emissions testing, or initial start-up testing, as specified in sections 93115.6(a),(b), and (c); or

(D) is operated under limited circumstances in response to an impending outage, as specified in sections 93115.6(a),(b), and (c); or

(E) is operated under limited circumstances under a DRP as specified in section 93115.6(c).

All engines that can be classified as “Emergency Standby Engines” under the District Rule 4702 definition qualify as “Emergency Standby Engines” under the stationary compression ignited engine ATCM definition.
§ 93115.5(a) of the stationary compression ignited engine ATCM, shown below, requires the use of CARB Diesel Fuel or one of the listed alternative fuels.

(a) As of January 1, 2006, except as provided for in sections 93115.3 and 93115.5(c), no owner or operator of a new stationary CI engine or an in-use prime stationary diesel-fueled CI engine shall fuel the engine with any fuel unless the fuel is one of the following:

(1) CARB Diesel Fuel; or
(2) an alternative diesel fuel that is:
(A) biodiesel;
(B) a biodiesel blend that does not meet the definition of CARB Diesel Fuel;
(C) a Fischer-Tropsch fuel; or
(D) an emulsion of water in diesel fuel; or
(3) any alternative diesel fuel that is not identified in section 93115.5(a)(2) above and meets the requirements of the Verification Procedure; or
(4) an alternative fuel; or
(5) CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure; or
(6) any combination of 93115.5(a)(1) through (5) above.

The majority of facilities comply with this requirement by using CARB Diesel Fuel.

The ATCM contains different requirements for in-use engines and new engines.
The ATCM defines a new engine as:

§ 93115.4(50) "New" or "New CI Engine" means the following:

(A) a stationary CI engine installed at a facility after January 1, 2005, including an engine relocated from an off-site location after January 1, 2005, except he following shall be deemed in-use engines:

1. a replacement stationary CI engine that is installed to temporarily replace an in-use engine while the in-use engine is undergoing maintenance and testing, provided the replacement engine emits no more than the in-use engine, and the replacement engine is not used more than 180 days cumulatively in any 12-month rolling period;

2. an engine for which a district-approved application for a district permit or engine registration for stationary sources was submitted to the District prior to January 1, 2005, even though the engine was installed after January 1, 2005;

3. an engine that is one of four or more engines owned by an owner or operator and is relocated prior to January 1, 2008, to an offsite location that is owned by the same owner or operator;

4. an engine, or replacement for an engine, used in agricultural operations that is relocated within the same facility or to another facility under the same owner or operator for use in agricultural operations, unless the engine is sited where an engine is not currently located and has not been previously located.

5. an engine installed at a facility prior to January 1, 2005, and relocated within the same facility after January 1, 2005.

6. a model year 2004 or 2005 engine purchased prior to January 1, 2005, for use in California. The date of purchase is defined by the date shown on the front of the cashed check, the date of the financial transaction, or the date on the engine purchasing agreement, whichever is earliest.

7. a greater than 50 bhp Tier 1 or Tier 2-certified stationary diesel agricultural engine installed after January 1, 2005, shall be considered a new engine subject to the requirements of section 93115.8(a) until 12 years after the date of initial installation, at which time, it shall be considered an in-use engine subject to the requirements of section 93115.8(b)(3).

(B) a stationary CI engine that has been reconstructed after January 1, 2005, shall be deemed a new engine unless the sum of the costs of all individual reconstructions of that engine after January 1, 2005, is less than 50% of the lowest-available purchase price, determined at the time of the most recent reconstruction, of a complete, comparably-equipped new engine (within + 10% of the reconstructed engine's brake horsepower rating). For purposes of this definition, the cost of reconstruction and the

cost of a comparable new engine shall not include the cost of equipment and devices required to meet the requirements of this ATCM.

Stationary compression ignited engine ATCM Requirements for New Emergency Standby Engines (not including fire pump engines):

§ 93115.6(a) lists operating requirements and emission standards for new Emergency Standby Diesel Fueled Compression Ignited Engines.

§ 93115.6(a)(1) of the ATCM, shown below, lists requirements for engines that are located at K-12 or near K-12 schools.

§ 93115.6(a)(1) At-School and Near-School Provisions. No owner or operator shall operate a new stationary emergency standby diesel-fueled CI 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, and

(B) between 7:30 a.m. and 3:30 p.m. on days when school is in session, if the engine is located within 500 feet of school grounds.

Section 93115.6(a)(1) does not apply if the engine emits no more than 0.01 g/bhp-hr of diesel PM.

§ 93115.6(a)(2) of the ATCM lists requirements that must be met if the operator intends to operate a new stationary emergency standby engine in response to notification of an impending outage. District Rule 4702 does not allow operation of the engine in response to the notification of an impending rotating outage.

§ 93115.6(a)(3) of the ATCM includes the following requirements for new emergency standby engines:

§ 93115.6(a)(3) New Engines: As of January 1, 2005, except as provided in section 93115.3, no person shall sell, offer for sale, purchase, or lease for use in California any new stationary emergency standby diesel-fueled CI engine that has a rated brake horsepower greater than 50 unless it meets the following applicable emission standards, and no person shall operate any new stationary emergency standby diesel-fueled CI engine that has a rated brake horsepower greater than 50, unless it meets all of the following applicable operating requirements and emission standards specified in 93115.6(a)(3)):
(A) Diesel PM Standard and Hours of Operating Requirements.

1. General Requirements: New stationary emergency standby diesel-fueled engines (>50 bhp) shall:

a. emit diesel PM at a rate less than or equal to 0.15 g/bhp-hr; or

b. meet the diesel PM standard, as specified in the Off-Road Compression Ignition Engine Standards for off-road engines with the same maximum rated power (title 13 CCR, section 2423), in effect on the date of acquisition or submittal, as defined in section 93115.4 whichever is more stringent; and

c. not operate more than 50 hours per year for maintenance and testing purposes, except as provided in 93115.6(a)(3)(A)2. This subsection does not limit engine operation for emergency use and for emission testing to show compliance with 93115.6(a)(3).

2. The District may allow a new emergency standby diesel-fueled CI engine (> 50 hp) to operate up to 100 hours per year for maintenance and testing purposes on a site-specific basis, provided the diesel PM emission rate is less than or equal to 0.01 g/bhp-hr.

(B) HC, NO_x, NMHC + NO_x, and CO standards: New stationary emergency standby diesel-fueled CI engines (> 50 bhp) must meet the standards for off-road engines of the same model year and maximum rated power as specified in the Off-Road Compression Ignition Engine Standards (title 13, CCR, section 2423). If no standards have been established for an off-road engine of the same model year and maximum rated power as the new stationary emergency standby diesel-fueled CI engine, then the new stationary emergency standby diesel-fueled CI engine shall meet the Tier 1 standards in title 13, CCR, section 2423 for an off-road engine of the same maximum rated power, irrespective of the new stationary emergency standby diesel-fueled CI engine's model year.

While the stationary compression ignition engine ATCM references Title 13 CCR Section 2423 emission requirements, compression ignited engines manufactured for stationary applications are not subject to from Title 13 CCR Sections 2420 through 2423[3]; thus, none of the other Title 13 Section requirements are applicable to stationary emergency standby engines, including the requirement for an engine to be certified. Therefore, the stationary ATCM **DOES NOT** require engines to be certified; rather, the stationary ATCM only requires engines to meet the same emission levels as certified engines.

C. CEQA

The issuance of a District permit does not authorize any facility to operate in violation of any established requirements from any local, state, or federal agency. However, Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over

[3] Verified by Ronald Hand of the California Air Resources Board.

which a public agency exercises only ministerial approval. This project qualifies for ministerial approval since an emergency engine is a secondary function for any facility in which the appropriate permits should already be obtained for the primary business function. Therefore, the District finds that this project is exempt from the provisions of CEQA and does not require a CEQA analysis.

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit are based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

As described above, the project requires only ministerial approval, and is exempt from the provisions of CEQA. As such, an Indemnification Agreement or a Letter of Credit will not be required for this project in the absence of expressed public concern.

VI. Authority to Construct Conditions

To ensure uniformity, a standard set of conditions will be used as a base for all applications (see ATC Conditions at end of the attached application review). Additional conditions may be necessary on a site-specific basis due to New Source Review requirements or health risk assessment.

VII. Updates

This GEAR will be updated as necessary to accommodate any changes in prohibitory rules, changes in the BACT Clearinghouse, or changes in cost information for the top down BACT Analysis.

Attachment I
Application Review

San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
Diesel-Fired Emergency Standby IC Engine

Facility Name:	[Facility Name]	Date:	[Date]
Mailing Address:	[Mailing Address]	Engineer/ Specialist:	[Your Name]
		Lead Engineer:	[Lead Engr Name]
Contact Person:	[Contact Person]		
Telephone:	[Phone #]		
E-mail:	[E-mail address]		
Application #:	[ATC #]		
Project #:	[Project #]		
Deemed Complete:	[Deemed Complete]		

Note: This GEAR is only to be used for new (manufactured after 1/1/05) emergency standby IC engines that power electrical generators at non-major source facilities. If this document is used for any major source, the project will no longer be a GEAR. For projects at a major source facility only, please expand the proposal, discussions, and tables as necessary to accommodate extra units or special cases (PSD significant emissions increase, Major Modification, CEQA etc…) using APR-1010.

Section 3.15 of District Rule 4702 defines an "Emergency Standby Engine" as an internal combustion engine which operates as a temporary replacement for primary mechanical or electrical power during an unscheduled outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the operator.

Prior to starting this evaluation, verify that the new IC engine meets the latest applicable off-road emissions standards (Tier rating) for the bhp rating range of the proposed engine (see Supervisor for guidance), and also verify that the PM10 emissions factor is less than or equal to 0.15 g/bhp-hr. If the engine does not meet these standards, the project may not be approvable (talk to your lead).

I. Proposal

Facility Name is proposing to install a XXX bhp (intermittent) diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (2/18/16)

Rule 2410 Prevention of Significant Deterioration (6/16/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4002 National Emission Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4701 Internal Combustion Engines - Phase 1 (8/21/03)
Rule 4702 Internal Combustion Engines (11/14/13)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

{For facilities with Street Addresses, use the following:}
The equipment will be located at 1132 N. Belmont Rd. in Exeter, CA.

{For facilities with a Mount Diablo Base Meridian Location, use the following:}
The equipment will be located at the 31X oil and water treatment plant in the Cymric Oil Field, within the SW/4 of Section 31, Township 29S, Range 21E.

{For facilities with a descriptive location, use the following:}
The equipment will be located on the eastern side of 25th Avenue, approximately one mile south of State Route (SR) 198, in Kings County.

{Verify whether or not the equipment is or will be located within 1,000 feet of the nearest outer boundary of a K-12 school (using Google maps, etc.). If there is a school within 1,000 feet, check to see if there is another school with ¼ mile of the emissions source and include that school with the school notice.}
The District has verified that the equipment [is/is not] located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 [is/is not] applicable to this project.

IV. Process Description

{Note: Typically, new emergency engines powering generators are limited to 50 hours per year. If the PM emissions rate is less than or equal to 0.01 g/bhp-hr, the engine may be operated up to 100 hours/year for maintenance and testing. Adjust the evaluation accordingly.}

The emergency standby engine powers an electrical generator. Other than emergency standby operation, the engine may be operated up to 50 hours per year for maintenance and testing purposes.

V. Equipment Listing

{Note: The maximum intermittent bhp rating of the engine shall be used in the equipment description.}

X-XXXX-XX-XX: [XXX] BHP (INTERMITTENT) [MAKE] MODEL [MODEL #] TIER [X] CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

VI. Emission Control Technology Evaluation

The applicant has proposed to install a Tier X certified diesel-fired IC engine that is fired on very low-sulfur diesel fuel.

The proposed engine meets the latest Tier Certification requirements for emergency standby engines; therefore, the engine meets the latest ARB/EPA emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide (see Appendix C for a copy of the emissions data sheet and/or the ARB/EPA executive order).

The use of CARB certified diesel fuel (0.0015% by weight sulfur maximum) reduces SO_X emissions by over 99% from standard diesel fuel.

VII. General Calculations

A. Assumptions

Emergency operating schedule:	24 hours/day
Non-emergency operating schedule:	50 hours/year
Density of diesel fuel:	7.1 lb/gal
EPA F-factor (adjusted to 60 °F):	9,051 dscf/MMBtu
Fuel heating value:	137,000 Btu/gal
BHP to Btu/hr conversion:	2,542.5 Btu/bhp-hr
Thermal efficiency of engine:	commonly ≈ 35%
PM_{10} fraction of diesel exhaust:	0.96 (CARB, 1988)
Conversion factor:	1.34 bhp/kw

{Include the following assumption if only a NO_X + VOC emission factor is available.}
The engine has certified NO_X + VOC emissions of X.XX g/bhp-hr. It will be assumed the NOx + VOC emission factor is split 95% NOx and 5% VOC (per the Carl Moyer program).

B. Emission Factors

{Emission Factors Table: Use this table if the applicant has supplied a manufacturer's engine specific data sheet or if you are using ARB/EPA Certification emission factors. If using ARB/EPA Certification emission factors, the CERT values may be used (see FYI 320).

Emission Factors			
Pollutant	**Emission Factor (g/bhp-hr)**	**Emission Factor (g/kw-hr)**	**Source**
NO_X	X.XX	X.XX	Engine Manufacturer
SO_X	0.0051	0.0068	Mass Balance Equation Below
PM_{10}	X.XX	X.XX	ARB/EPA Certification
CO	X.XX	X.XX	ARB/EPA Certification
VOC	X.XX	X.XX	Engine Manufacturer

$$\frac{0.000015\ lb-S}{lb-fuel}\times\frac{7.1\ lb-fuel}{gallon}\times\frac{2\ lb-SO_2}{1\ lb-S}\times\frac{1\ gal}{137{,}000\ Btu}\times\frac{1\ bhp\ input}{0.35\ bhp\ out}\times\frac{2{,}542.5\ Btu}{bhp-hr}\times\frac{453.6\ g}{lb}=\ 0.0051\ \frac{g-SO_x}{bhp-hr}$$

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since this is a new emissions unit, PE1 = 0.

2. Post-Project Potential to Emit (PE2)

{Note: The maximum intermittent bhp rating of the engine shall be used in the emission calculations.}

The daily and annual PE2 are calculated as follows:

Daily PE2 (lb-pollutant/day) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/day) / 453.6 g/lb

Annual PE2 (lb-pollutant/yr) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/yr) / 453.6 g/lb

{Note: Enter data in cells for Emissions Factor, Rating, Daily and Annual Hours of Operation then Highlight cells for PE2 and press F9 to calculate emissions}

Post Project Emissions (PE2)						
Pollutant	**Emissions Factor (g/bhp-hr)**	**Rating (bhp)**	**Daily Hours of**	**Annual Hours of**	**Daily PE2 (lb/day)**	**Annual PE2 (lb/yr)**

			Operation (hrs/day)	Operation (hrs/year)		
NO_x	XXX	XXX	XXX	XXX	**0.0**	**0**
SO_x	XXX	XXX	XXX	XXX	**0.0**	**0**
PM_{10}	XXX	XXX	XXX	XXX	**0.0**	**0**
CO	XXX	XXX	XXX	XXX	**0.0**	**0**
VOC	XXX	XXX	XXX	XXX	**0.0**	**0**

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATCs) or Permits to Operate (PTOs) at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

{For a new facility use the following:}
Since this is a new facility, there are no valid ATCs, PTOs, or ERCs at the Stationary Source. Therefore, the SSPE1 is equal to zero.

{If this is an existing facility use the following statement, otherwise delete:}
SSPE1 is summarized in the following table. See Appendix F for detailed SSPE calculations.

SSPE1 (lb/year)					
	NO_X	**SO_X**	**PM_{10}**	**CO**	**VOC**
SSPE1	XXX	XXX	XXX	XXX	XXX

4. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the Post-Project Stationary Source Potential to Emit (SSPE2) is the PE from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

For this project the change in emissions for the facility is due to the installation of the new emergency standby IC engine. Thus:

SSPE2 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
SSPE1	XXX	XXX	XXX	XXX	XXX
X-XXXX-X-X	XXX	XXX	XXX	XXX	XXX
SSPE2	**0**	**0**	**0**	**0**	**0**

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)						
	NO_X	**SO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**
SSPE1	XXX	XXX	XXX	XXX	XXX	XXX
SSPE2	XXX	XXX	XXX	XXX	XXX	XXX
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

Rule 2410 Major Source Determination:

The facility is not an existing Major Source for PSD for at least one pollutant. Therefore the facility is not an existing Major Source for PSD.

6. Baseline Emissions (BE)

BE = Pre Project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201

Since this is a new emissions unit, BE = PE1 = 0 for all pollutants.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a “Major Modification” as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification.

9. Rule 2410 - Prevention of Significant Deterioration (PSD) Applicability Determination

The project potential to emit, by itself, will not exceed any PSD major source thresholds. Therefore Rule 2410 is not applicable and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District’s PAS emissions profile screen. Detailed QNEC calculations are included in Appendix E.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following[4]:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in an SB288 Major Modification or a Federal Major Modification, as defined by the rule.

As discussed in Section I, the facility is proposing to install a new emergency standby IC engine. Additionally, as determined in Sections VII.C.7 and VII.C.8, this project does not result in an SB288 Major Modification or a Federal Major Modification, respectively. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

The daily emissions from the new engine are compared to the BACT threshold levels in the following table:

[4] Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

New Emissions Unit BACT Applicability				
Pollutant	**Daily Emissions for the new unit (lb/day)**	**BACT Threshold (lb/day)**	**SSPE2 (lb/yr)**	**BACT Triggered?**
NO_X	XXX	> 2.0	n/a	Yes/No
SO_X	XXX	> 2.0	n/a	Yes/No
PM_{10}	XXX	> 2.0	n/a	Yes/No
CO	XXX	> 2.0 and SSPE2 ≥ 200,000 lb/yr	XXX	No
VOC	XXX	> 2.0	n/a	Yes/No

As shown above, BACT will be triggered for NO_X, SO_X, PM_{10}, and VOC emissions from the engine for this project.

2. BACT Guideline

BACT Guideline 3.1.1, which appears in Appendix B of this report, covers diesel-fired emergency IC engines.

3. Top Down BACT Analysis

Per District Policy APR 1305, Section IX, "A top down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District's NSR Rule for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

Pursuant to the attached top down BACT Analysis, which appears in Appendix B of this report, BACT is satisfied with:

{Delete the pollutants listed that do not trigger BACT. Check that the Certification (CERT) factors are less than the Standard (STD) factors}

NO_X: Latest Available Tier Certification level for applicable horsepower
VOC: Latest Available Tier Certification level for applicable horsepower
SO_X: Very low sulfur diesel (15 ppmw sulfur or less)
PM_{10}: 0.15 g/bhp-hr

The facility has proposed to install a XXX bhp Tier X certified IC engine (with a PM_{10} emissions rate of 0.XX g/bhp-hr), and using very low sulfur diesel fuel. Therefore, BACT is satisfied for NO_x, SO_x, VOC, and PM_{10}. (edit as necessary).

B. Offsets

1. Offset Applicability

Pursuant to Section 4.6.2 of this rule, offsets are not required for emergency IC engines. The engine in this project is an emergency IC engine; therefore, this exemption is applicable to this project.

However, even when there is an applicable exemption, the SSPE2 values are compared to the offset threshold to determine if offsets are triggered. In its PAS database, the District keeps track of facilities where offsets are triggered but an exemption applies. The SSPE2 values are compared to the offset trigger thresholds in the following table:

Offset Determination (lb/year)					
	NOx	**SOx**	**PM_{10}**	**CO**	**VOC**
SSPE2	XXX	XXX	XXX	XXX	XXX
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	No	No	No	No	No

2. Quantity of Offsets Required

{Make sure to indicate on the emissions profile page, for pollutants that exceed the offset threshold, that offsets are triggered, but an exemption applies.}

{If no offset thresholds are exceeded, use the following paragraph}
As shown in the table above, no offset thresholds are exceeded with this project. Further, as previously stated, the offset exemption from Section 4.6.2 of District Rule 2201 is applicable to this project; therefore, offset calculations are not necessary and offsets are not required.

{If an offset threshold is exceeded, use the following paragraph and check the box on the emission profile in PAS}
As shown in the table above, offsets are triggered for {PM10} emissions since the {PM10} SSPE2 exceeds the offset trigger threshold; however, as previously discussed, the offset exemption from Section 4.6.2 of District Rule 2201 is applicable to this project; therefore, offset calculations are not necessary and offsets are not required.

C. Public Notification

1. Applicability

Public noticing is required for:

a. New Major Sources, SB288 Major Modifications, and Federal Major Modifications

As shown in Sections VII.C.5, VII.C.7, and VII.C.8, this facility is not a new Major Source, not an SB 288 Major Modification, and not a Federal Major Modification, respectively.

b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant

{Choose the appropriate sentence}
As calculated in Section VII.C.2, daily emissions for all pollutants are less than 100 lb/day. **OR** As calculated in Section VII.C.2, daily emissions for NO_X and CO are greater than 100 lb/day.

c. Any project which results in the offset thresholds being surpassed
Public notification is required if the SSPE1 is increased from a level below the offset threshold to a level exceeding the emissions offset threshold, for any pollutant.

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	**SSPE1 (lb/year)**	**SSPE2 (lb/year)**	**Offset Threshold**	**Public Notice Required?**
NO_X	XXX	XXX	20,000 lb/year	No
SO_X	XXX	XXX	54,750 lb/year	No
PM_{10}	XXX	XXX	29,200 lb/year	No
CO	XXX	XXX	200,000 lb/year	No
VOC	XXX	XXX	20,000 lb/year	No

Example (a): (For a project not surpassing the offset threshold.)
As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

Example (b): (For a project surpassing the offset threshold.)
As detailed above, offset thresholds were surpassed for NO_X with this project; therefore public noticing is required for offset purposes.

(Note: Public notification is independent of whether or not Offsets are required. For example, if this project involves the installation of emergency (offset-exempt) equipment and the offset threshold is surpassed, then public notification would still be triggered.)

d. Any project with a Stationary Source Project Increase in Permitted Emissions (SSIPE) greater than 20,000 lb/year for any pollutant

For this project, the proposed engine is the only emissions unit that will generate an increase in Potential to Emit. Since the proposed engine emissions are well below 20,000 lb/year for all pollutants (See Section VII.C.2), the SSIPE for this project will be below the public notice threshold.

e. Any project which results in a Title V significant permit modification

Since this facility does not have a Title V operating permit, this change is not a Title V significant Modification, and therefore public noticing is not required.

2. Public Notice Action

{For a project not requiring public notice.}
As demonstrated above, this project will not require public noticing.

{For a project requiring public notice.}
As demonstrated above, this project will require public noticing. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emissions Limits

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. Therefore, the following conditions will be listed on the ATC as a mechanism to ensure compliance:

- {4771} Emissions from this IC engine shall not exceed any of the following limits: X.XX g-NOx/bhp-hr, X.XX g-CO/bhp-hr, or X.XX g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

- {4772} Emissions from this IC engine shall not exceed X.XX g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required for emergency standby IC engines to demonstrate compliance with District Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with District Rule 2201.

3. Recordkeeping

Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, District Rule 4702, of this evaluation.

4. Reporting

No reporting is required to ensure compliance with District Rule 2201.

(Note: Section F is applicable only when public notice is triggered, otherwise delete the following section for AAQA.)

F. Ambient Air Quality Analysis (AAQA)

An AAQA is conducted by the Technical Services group, for any project which has an increase in emissions and triggers public notification requirements. Discuss the AAQA results as follows.

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Appendix D of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_X, CO, and SO_X. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_X, CO, or SO_X.

The proposed location is in a non-attainment area for the state's PM_{10} as well as federal and state $PM_{2.5}$ thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM_{10} and $PM_{2.5}$.

(Note: Special permit conditions may be required as a result of the AAQA.)

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

Since this facility's potential to emit does not exceed any Major Source thresholds of Rule 2201, this facility is not a Major Source, and Rule 2520 does not apply.

Rule 4001 New Source Performance Standards (NSPS)

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

The District has not been delegated the authority to implement Subpart IIII requirements for non-Major Sources; therefore, no requirements shall be included on the permit.

Rule 4002 National Emission Standards for Hazardous Air Pollutants

40 CFR 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Emissions (RICE)

The District has not been delegated the authority to implement NESHAP regulations for Area Source requirements for non-Major Sources; therefore, no requirements shall be included on the permit.

Rule 4101 Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. Therefore, the following condition will be listed on the ATC as a mechanism to ensure compliance:

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of

these operations, provided the equipment is well maintained. Therefore, the following condition will be listed on the ATC as a mechanism to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

Discuss whether a Health Risk Assessment is required and/or the results of the HRA, including any special conditions to consider when issuing the ATC(s).

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

Example (a): (For a project with a Prioritization score ≤ 1.)
An HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (Appendix D), the total facility prioritization score including this project was less than or equal to one. Therefore, no further analysis is required to determine the impact from this project and compliance with the District's Risk Management Policy is expected.

Example (b): (For a project with a Prioritization score > 1.)
An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix D), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

a) RMR Summary			
II. Categories	**Emergency IC Engine (Unit #-0)**	**Project Totals**	**Facility Totals**
III. Prioritization Score	**XXX**	XXX	XXX
IV. Acute Hazard Index	XXX	XXX	XXX
Chronic Hazard Index	XXX	XXX	XXX
Maximum Individual Cancer Risk	XXX	XXX	XXX
A. T-BACT Required?	1. XXX		
B. Special Permit Conditions?	1. XXX		

Discussion of T-BACT

Discuss whether a T-BACT is or is not triggered and the requirements which satisfy T-BACT (if any).

Example (a): (For a project where T-BACT not triggered.)
BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

Example (b): (For a project where T-BACT is triggered.)
BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is required for this project because the HRA indicates that the risk is above the District's thresholds for triggering T-BACT requirements.

For this project T-BACT is triggered for PM_{10}. T-BACT is satisfied with BACT (see Appendix B), which is:

PM_{10}: 0.15 g/bhp-hr

Therefore, compliance with the District's Risk Management Policy is expected.

Also discuss whether the project has acute or chronic indices, or a cancer risk greater than the District's significance levels.

For example: (For most projects.)
District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 20 in a million). As outlined by the Technical Services Memo in Appendix D of this report, the emissions increases for this project were determined to be less than significant.

The following conditions will be listed on the ATC as a mechanism to ensure compliance with the RMR:

Note: Delete the following if not applicable. Include any additional RMR conditions, as necessary.

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

- {4772} Emissions from this IC engine shall not exceed X.XX g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

- {4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]

Rule 4201 Particulate Matter Concentration

Rule 4201 limits particulate matter emissions from any single source operation to 0.1 g/dscf, which, as calculated below, is equivalent to a PM_{10} emission factor of 0.4 g-PM_{10}/bhp-hr.

$$0.1 \quad \frac{grain-PM}{dscf} \times \frac{g}{15.43 grain} \times \frac{1\,Btu_{in}}{0.35\,Btu_{out}} \times \frac{9{,}051 dscf}{10^6\,Btu} \times \frac{2{,}542.5\,Btu}{1\,bhp-hr} \times \frac{0.96 g-PM_{10}}{1 g-PM} = 0.4 \frac{g-PM_{10}}{bhp-hr}$$

The new engine has a PM_{10} emission factor less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATC as a mechanism to ensure compliance:

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Rule 4701 Internal Combustion Engines - Phase 1

The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines. Except as provided in Section 4.0, the provisions of this rule apply to any internal combustion engine, rated greater than 50 bhp, that requires a PTO.

The proposed engine is also subject to District Rule 4702, Internal Combustion Engines. Since emissions limits of District Rule 4702 and all other requirements are equivalent or more stringent than District Rule 4701 requirements for emergency engines, compliance with District Rule 4702 requirements will satisfy requirements of District Rule 4701.

2. Rule 4702 Internal Combustion Engines

Emergency standby engines are subject to District Rule 4702 requirements. Emergency standby engines are defined in Section 3.0 of District Rule 4702 as follows:

> *3.15 Emergency Standby Engine: an internal combustion engine which operates as a temporary replacement for primary mechanical or electrical power during an*

unscheduled outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the operator. An engine shall be considered to be an emergency standby engine if it is used only for the following purposes: (1) periodic maintenance, periodic readiness testing, or readiness testing during and after repair work; (2) unscheduled outages, or to supply power while maintenance is performed or repairs are made to the primary power supply; and (3) if it is limited to operate 100 hours or less per calendar year for non-emergency purposes. An engine shall not be considered to be an emergency standby engine if it is used: (1) to reduce the demand for electrical power when normal electrical power line service has not failed, or (2) to produce power for the utility electrical distribution system, or (3) in conjunction with a voluntary utility demand reduction program or interruptible power contract.

Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract. The following conditions will be included on the permit:

- {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702 and 17 CCR 93115]

- {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702 and 17 CCR 93115]

The 100 hour requirement is less stringent than the Air Toxic Control Measure operating limitations for emergency standby engines. Therefore, compliance with the applicable Air Toxic Control Measure requirements ensures compliance with the 100 hour requirement.

Operation of emergency standby engines are limited to 100 hours or less per calendar year for non-emergency purposes. The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine's maintenance and testing to 50 hours/year; therefore, compliance is expected. The following conditions will be included on the permit:

- {4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]

The following exemption in Section 4.2 of District Rule 4702 applies to emergency standby engines:

> *4.2 Except for the requirements of Section 5.9 and Section 6.2.3, the requirements of this rule shall not apply to:*
> *4.2.1 An emergency standby engine as defined in Section 3.0 of this rule, and provided that it is operated with a nonresettable elapsed operating time meter. In lieu of a nonresettable time meter, the owner of an emergency engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.*

Pursuant to the exemption in Section 4.2, the following requirements of Section 5.9 are applicable to emergency standby engines

Section 5.9 requires the owner to:

> *5.9.2 Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.*
>
> *5.9.3 Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.*
>
> *5.9.4 Install and operate a nonresettable elapsed operating time meter. In lieu of installing a nonresettable time meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by Permit-to-Operate or Permit-Exempt Equipment Registration condition. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.*

Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be included on the permit:

- {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]

Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be included on the permit:

- {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]

Install and operate a nonresettable elapsed time meter. In lieu of installing a nonresettable elapsed time meter, the operator may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and EPA and is allowed by Permit-to-Operate condition. The operator shall properly maintain and operate the nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions. The following condition will be included on the permit:

- {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]

The exemption in Rule 4702 Section 4.2 for emergency standby engines requires the engines to comply with Section 6.2.3, shown below.

> *6.2.3 An owner claiming an exemption under Section 4.2 or Section 4.3 shall maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and provided to the APCO upon request. The records shall include, but are not limited to, the following:*
>
> > *6.2.3.1 Total hours of operation,*
> > *6.2.3.2 The type of fuel used,*
> > *6.2.3.3 The purpose for operating the engine,*
> > *6.2.3.4 For emergency standby engines, all hours of non-emergency and emergency operation shall be reported, and*
> > *6.2.3.5 Other support documentation necessary to demonstrate claim to the exemption.*

Records of the total hours of operation, type of fuel used, purpose for operating the engine, all hours of non-emergency and emergency operation, and other support documentation must be maintained. All records shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request. The following conditions will be included on the permit:

- {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]

- {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]

- {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO_2) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

Volume SO_2 = (n x R x T) ÷ P
n = moles SO_2
T (standard temperature) = 60 °F or 520 °R
R (universal gas constant) = $\frac{10.73\,\text{psi}\cdot\text{ft}^3}{\text{lb}\cdot\text{mol}\cdot{}^\circ\text{R}}$

$$\frac{0.000015\ lb-S}{lb-fuel}\times\frac{7.1\text{ lb}}{\text{gal}}\times\frac{64\text{ lb}-SO_2}{32\text{ lb}-S}\times\frac{1\text{ MMBtu}}{9{,}051\text{ scf}}\times\frac{1\text{ gal}}{0.137\text{ MMBtu}}\times\frac{\text{lb}-\text{mol}}{64\text{ lb}-SO_2}\times\frac{10.73\text{ psi}-\text{ft}^3}{\text{lb}-\text{mol}-{}^\circ\text{R}}\times\frac{520{}^\circ\text{R}}{14.7\text{ psi}}\times 1{,}000{,}000 = \quad 1.0\text{ ppmv}$$

Since 1.0 ppmv is ≤ 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition will be listed on the ATC as a mechanism to ensure compliance:

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

California Health & Safety Code 42301.6 (School Notice)

Reference project location and its proximity to a school and state whether or not school notice is required for this project.

Example (a): (For a Non-School Notice project - > 1,000 feet.)
The District has verified that this engine is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

Example (b): (For a Non-School Notice project – no increase in emissions)
The District has verified that this site is located within 1,000 feet of a school. However, pursuant to California Health and Safety Code 42301.6, since this project will not result in an increase in emissions, a school notice is not required.

Example (c): (For a School Notice project.)
The District has verified that this engine is located within 1,000 feet of the following school:

School Name: [Name]
Address: [Address]

Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is required.

Prior to the issuance of the ATC for this equipment, notices will be provided to the parents/guardians of all students of the affected school, and will be sent to all residents within 1,000 feet of the site.

[If there is no school w/in ¼ mile of the emissions increase, include the following discussion, otherwise delete]:
The District has verified that there are no additional schools within one-quarter mile of the emission source.

[If there is a school w/in ¼ mile of the emissions increase, include the following discussion, otherwise delete]:
Since a school notice has been triggered (due to the above-listed school within 1,000 feet of the emission source), notices will also be provided to the parents/guardians of all students from all school sites within one-quarter mile of the emission source. The following school(s) is within one-quarter mile of the emission source:

School Name: [Name]
Address: [Address]
(add additional schools if necessary)

(Note: Refer to FYI - 71 for guidance on how to process a School Notice project.)

Title 17 California Code of Regulations (CCR), Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

The following requirements apply to new engines (those installed after 1/1/05):

Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.	The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, is included on the permit. • {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
The engine(s) must meet the emission standards in Table 1 of the ATCM for the specific power rating and model year of the proposed engine.	The applicant has proposed the use of an engine that is certified to the latest EPA Tier Certification standards for the applicable horsepower range, guaranteeing compliance with the emission standards of the ATCM. Additionally, the proposed diesel PM emissions rate is less than or equal to 0.15 g/bhp-hr.
The engine may not be operated more than 50 hours per year for maintenance and testing purposes unless the PM emissions are ≤ 0.01 g/bhp-hr, then the engine is allowed 100 hours per year. Emissions from this engine are certified at 0.XXX g/bhp-hr, therefore the engine is allowed 50 hours.	The following conditions will be included on the permit: • {4772} Emissions from this IC engine shall not exceed 0.XXX g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115] • {4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]
Engines, with a PM10 emissions rate greater than 0.01 g/bhp-hr and located at schools, may not be operated for maintenance and testing whenever there is a school sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM	{Use the following language if the Unit is located on school grounds; otherwise delete} The following condition will be included on the permit: • {3417} If this engine is located on the grounds of a K-12 school, the engine shall not be operated for non-emergency purposes, including maintenance and testing, whenever there is a school sponsored activity. [17 CCR 93115] {Use the following language if the Unit is located within 500' of a school and is not on school grounds; otherwise delete} The following condition will be included on the permit:

	• {3416} If this engine is located on the grounds of a K-12 school, or if this engine is located within 500 feet of the property boundary of a K-12 school, the engine shall not be operated for non-emergency purposes, including maintenance and testing, between 7:30 a.m. and 3:30 p.m. on days when school is in session. [17 CCR 93115] {Use if the following language if the engine is not within 500' of a school; otherwise delete} The District has verified that this engine is not located within 500' of a school.
A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed upon engine installation, or by no later than January 1, 2005, on all engines subject to all or part of the requirements of sections 93115.6, 93115.7, or 93115.8(a) unless the District determines on a case-by-case basis that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history.	The following condition will be included on the permit: • {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
An owner or operator shall maintain monthly records of the following: emergency use hours of operation; maintenance and testing hours of operation; hours of operation for emission testing; initial start-up testing hours; hours of operation for all other uses; and the type of fuel used. All records shall be retained for a minimum of 36 months.	The following condition will be included on the permit: • {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]

California Environmental Quality Act (CEQA)

Reminder: Use the following language if this project qualifies as a GEAR (engine located at non-Major Source):

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project qualifies for ministerial approval under the District's Guideline for Expedited Application Review (GEAR). Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

As described above, the project requires only ministerial approval, and is exempt from the provisions of CEQA. As such, an Indemnification Agreement or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

{For a project where noticing (public, school, or EPA) is not required, use the following:}

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct X-XXXX-X-X subject to the permit conditions on the attached draft ATC in Appendix A.

{For a project where public noticing is triggered, use the following:}
Pending a successful NSR public noticing period, issue Authority to Construct X-XXXX-X-X subject to the permit conditions on the attached draft ATC in Appendix A.

{For a project where school noticing is triggered, use the following:}
Pending a successful school noticing period, issue Authority to Construct X-XXXX-X-X subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information

{Note: Expand the following table as necessary to include extra units.}

Billing Schedule			
Permit Number	**Fee Schedule**	**Fee Description**	**Fee Amount**
X-XXXX-XX-X	3020-10-X	XXX bhp IC engine	$XXX

Appendixes

Note: Adjust the following appendices as necessary.
A. Draft ATC and Emissions Profile *{Note: For public notice projects, the emissions profile is not included as a part of the Engineering Evaluation package.}*
B. BACT Guideline and BACT Analysis
C. Emissions Data Sheet and/or ARB/EPA Certification
D. RMR and AAQA
E. QNEC Calculations
F. SSPE1 Calculations

Appendix A
Draft ATC and Emissions Profile

Appendix B
BACT Guideline and BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 3.1.1
Last Update: 6/13/2019
Emergency Diesel IC Engine

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	Latest EPA Tier Certification level for applicable horsepower range		
NOX	Latest EPA Tier Certification level for applicable horsepower range		
PM10	0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)		
SOX	Very low sulfur diesel fuel (15 ppmw sulfur or less)		
VOC	Latest EPA Tier Certification level for applicable horsepower range		

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

[Select only the appropriate BACT Analyses]

Top Down BACT Analysis for the Emergency IC Engine

BACT Guideline 3.1.1 (June 13, 2019) applies to emergency diesel IC engines. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

1. **BACT Analysis for NO_X, VOC, and CO Emissions:**
   (delete pollutants for which BACT is not required)

   a. Step 1 - Identify all control technologies

   BACT Guideline 3.1.1 identifies only the following option:

   - *Latest EPA Tier Certification level for applicable horsepower range*

   To determine the latest applicable Tier level, staff should perform an industry survey of the latest Tier certifcation level available for the proposed engine horsepower rating. Please see your Supervisor for guidance.

   b. Step 2 - Eliminate technologically infeasible options

   The control option listed in Step 1 is not technologically infeasible.

   c. Step 3 - Rank remaining options by control effectiveness

   No ranking needs to be done because there is only one control option listed in Step 1.

   d. Step 4 - Cost Effectiveness Analysis

   The applicant has proposed the only control option remaining under consideration. Therefore, a cost effectiveness analysis is not required.

   e. Step 5 - Select BACT

   BACT for NOx, VOC, and CO will be the use of an EPA Tier X certified engine. The applicant is proposing such a unit. Therefore, BACT will be satisfied.

{Delete if BACT not triggered for SOx}

2. **BACT Analysis for SO_X Emissions:**

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

- *Very low sulfur diesel fuel (15 ppmw sulfur or less)*

b. Step 2 - Eliminate technologically infeasible options

The control option listed in Step 1 is not technologically infeasible.

c. Step 3 - Rank remaining options by control effectiveness

No ranking needs to be done because there is only one control option listed in Step 1.

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control option remaining under consideration. Therefore, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for SOx is the use of very low sulfur diesel fuel (15 ppmw sulfur or less). The applicant is proposing the use of CARB certified diesel fuel that is rated at 15 ppmw sulfur or less. Therefore, BACT will be satisfied.

{Delete if BACT not triggered for PM_{10}}

3. BACT Analysis for PM_{10} Emissions:

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

- *0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)*

The latest EPA Tier Certification level for an engine of the proposed model year and horsepower rating is Tier X. Refer to the Top-Down BACT analysis for NOx for a discussion regarding the determination of the EPA Tier level to be considered.

Please note Tier X IC engines do not have a PM emission standard that is more stringent than 0.15 g/hp-hr. Additionally, the ATCM requires a PM emission standard of 0.15 g/hp-hr for all new emergency diesel IC engines.

Therefore, a PM/PM10 emission standard of 0.15 g/hp-hr is required as BACT.

b. Step 2 - Eliminate technologically infeasible options

The control option listed in Step 1 is not technologically infeasible.

c. Step 3 - Rank remaining options by control effectiveness

No ranking needs to be done because there is only one control option listed in Step 1.

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control option remaining under consideration. Therefore, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for PM10 is emissions of 0.15 g/hp-hr or less. The applicant is proposing an engine that meets this requirement. Therefore, BACT will be satisfied.

Appendix C
Emissions Data Sheet and or ARB/EPA Certification

Appendix D
Technical Services Memo and AAQA

Appendix E
QNEC Calculations

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr
PE2 = Post-Project Potential to Emit for each emissions unit, lb/qtr
PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr

Since this is a new unit, PE1 = 0 for all pollutants. Thus, QNEC = PE2 (lb/qtr).

Using the PE2 (lb/yr) values calculated in Section VII.C.2, Quarterly PE2 is calculated as follows:

$PE2_{quarterly}$ = PE2 (lb/yr) ÷ 4 quarters/year = QNEC

{After entering the data in column 2, highlight column 3 and press F9:}

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO_X	XXX	0.0
SO_X	XXX	0.0
PM_{10}	XXX	0.0
CO	XXX	0.0
VOC	XXX	0.0

Appendix F
SSPE1 Calculations

[Attach SSPE1 Calculations if applicable.]

IC Engine Permit Conditions

You may copy and paste the following general condition numbers into the PAS conditions screen, or use the general conditions located in the GEAR 11>Diesel Emergency Standby (7/1/14) general conditions folder in PAS:

Only add general condition {1898} if it is required by the RMR.

98, 15, 14, 1898, 4749, 4258, 4771, 4772, 4261, 3478, 3807, 3808, 3496, 4920, 4263, 3475

If the engine is located within 500' of a school (see below), add: 3416 or 3417

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Add the following condition if required by the RMR:

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

- {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

- {4771} Emissions from this IC engine shall not exceed any of the following limits: X.XX g-NOx/bhp-hr, X.XX g-CO/bhp-hr, or X.XX g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

- {4772} Emissions from this IC engine shall not exceed X.XX g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

- {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]

- {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]

- {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702 and 17 CCR 93115]

- {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702 and 17 CCR 93115]

- {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]

- {4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201, 4102 and 4702, and 17 CCR 93115]

- {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]

- {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

{Use the following condition only if the engine is located within 500’ of a school and is not on school grounds; otherwise delete}

- {3416} If this engine is located on the grounds of a K-12 school, or if this engine is located within 500 feet of the property boundary of a K-12 school, the engine shall not be operated

for non-emergency purposes, including maintenance and testing, between 7:30 a.m. and 3:30 p.m. on days when school is in session. [17 CCR 93115]

{Use the following condition only if the engine is located on school grounds}

- {3417} If this engine is located on the grounds of a K-12 school, the engine shall not be operated for non-emergency purposes, including maintenance and testing, whenever there is a school sponsored activity. [17 CCR 93115]