



MAR 07 2012

Loren Green
Madera County Engineering Department
200 W. Fourth Street
Madera, CA 93637

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: C-1113280

Dear Mr. Green:

Enclosed for your review and comment is the District's analysis of Madera County Engineering Department's application for an Authority to Construct for the installation of two 1220 bhp diesel-fired emergency standby internal combustion (IC) engines powering electrical generators, at 14191 Road 28 in Madera, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Ms. Ashley Dahlstrom of Permit Services at (661) 392-5612.

Sincerely,

David Warner
Director of Permit Services

DW:abd

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585



MAR 07 2012

Mike Tollstrup, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
PO Box 2815
Sacramento, CA 95812-2815

**Re: Notice of Preliminary Decision - Authority to Construct
Project Number: C-1113280**

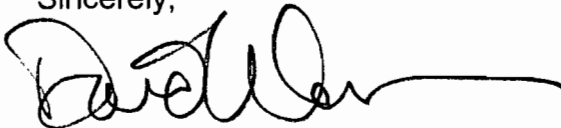
Dear Mr. Tollstrup:

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**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AN AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to Madera County Engineering Department for the installation of two 1220 bhp diesel-fired emergency standby internal combustion (IC) engines powering electrical generators, at 14191 Road 28 in Madera, CA.

The analysis of the regulatory basis for this proposed action, Project #C-1113280, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.

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

Facility Name:	Madera County Engineering Dept	Date:	February 15, 2011
Mailing Address:	200 W. Fourth Street Madera, CA 93637	Engineer:	Ashley Dahlstrom
Contact Person:	Loren Green	Lead Engineer:	Dan Klevann
Telephone:	(559) 661-6333		DK 2-22-12
Application #:	C-3324-2-0 and '-3-0		
Project #:	C-1113280		
Complete:	December 15, 2011		

I. Proposal

Madera County Engineering Department is proposing to install two (2) 1220 bhp diesel-fired emergency standby internal combustion (IC) engines powering electrical generators.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
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 Stationary Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702 Stationary Internal Combustion Engines (8/18/11)
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
California Environmental Quality Act (CEQA)
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

The project is located at 14191 Road 28 in Madera, CA. The District has verified that the equipment 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 not applicable to this project.

IV. Process Description

The emergency standby engines power electrical generators. Other than emergency standby operation, each engine may be operated up to 50 hours per year for maintenance and testing purposes.

V. Equipment Listing

- C-3324-2-0:** **1220 BHP CUMMINS MODEL QSK23-G7 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR**
- C-3324-3-0:** **1220 BHP CUMMINS MODEL QSK23-G7 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR**

VI. Emission Control Technology Evaluation

The applicant has proposed to install Tier 2 certified diesel-fired IC engines that are fired on very low-sulfur diesel fuel (0.0015% by weight sulfur maximum).

The proposed engines meet the latest Tier Certification requirements; therefore, the engines 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 EPA executive order).

The use of very low-sulfur 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)

B. Emission Factors

Emission Factors			
Pollutant	Emission Factor (g/kW-hr)	Emission Factor (g/bhp-hr)	Source
NO _x	5.45	4.06	EPA Certification Summary – Appendix C
SO _x	n/a	0.0051	Mass Balance Equation Below
PM ₁₀	0.13	0.10	EPA Certification Summary – Appendix C
CO	0.5	0.37	EPA Certification Summary – Appendix C
VOC	0.44	0.33	EPA Certification Summary – Appendix C

$$\frac{0.000015 \text{ lb-S}}{\text{lb-fuel}} \times \frac{7.1 \text{ lb-fuel}}{\text{gallon}} \times \frac{2 \text{ lb-SO}_2}{1 \text{ lb-S}} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp-hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0051 \frac{\text{g-SO}_x}{\text{bhp-hr}}$$

*g/bhp-hr = g/kW-hr ÷ 1.341

C. Calculations

1. Pre-Project Emissions (PE1)

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

2. Post-Project PE (PE2)

The daily and annual PE are calculated as follows:

C-3324-2-0

Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO _x	4.06	1220	24	50	262.1	546
SO _x	0.0051	1220	24	50	0.3	1
PM ₁₀	0.1	1220	24	50	6.5	13
CO	0.37	1220	24	50	23.9	50
VOC	0.33	1220	24	50	21.3	44

C-3324-3-0

Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO _x	4.06	1220	24	50	262.1	546
SO _x	0.0051	1220	24	50	0.3	1
PM ₁₀	0.1	1220	24	50	6.5	13
CO	0.37	1220	24	50	23.9	50
VOC	0.33	1220	24	50	21.3	44

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid ATCs or 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 that have occurred at the source, and which have not been used on-site.

SSPE1 is summarized in the following table:

SSPE1					
	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
SSPE1 Total	2,383	55	510	5,939	5,759

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

Pursuant to Section 4.10 of District Rule 2201, the Post-Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (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 Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions 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 engines, permit units C-3324-2-0 and '-3-0. Thus:

SSPE2					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
SSPE1	2,383	55	510	5,939	5,759
C-3324-2-0	546	1	13	50	44
C-3324-3-0	546	1	13	50	44
SSPE2 Total	3,475	57	536	6,039	5,847
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offset Threshold Surpassed?	No	No	No	No	No

5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site."

This facility does not contain ERCs which have been banked at the source; therefore, no adjustment to SSPE2 is necessary.

Major Source Determination					
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Major Source Threshold (lb/yr)	Existing Major Source?	Becoming a Major Source?
NO _x	2,383	3,475	20,000	No	No
SO _x	55	57	140,000	No	No
PM ₁₀	510	536	140,000	No	No
CO	5,939	6,039	200,000	No	No
VOC	5,759	5,847	20,000	No	No

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

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 Section 3.23

Since these are new emissions units, BE = PE1 = 0 for all criteria 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."

As discussed in Section VII.C.5 above, this facility is not a major source for any of the pollutants addressed in this project; therefore, the project does not constitute an SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201, Section 3.18 states that Federal Major Modifications are the same as "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. Additionally, since the facility is not a major source for PM₁₀ (140,000 lb/year), it is not a major source for PM_{2.5} (200,000 lb/year).

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*:

- 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.

*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.

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:

New Emissions Unit BACT Applicability					
Pollutant	Daily Emissions for unit -2-0 (lb/day)	Daily Emissions for unit -3-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	262.1	262.1	> 2.0	n/a	Yes
SO _x	0.3	0.3	> 2.0	n/a	No
PM ₁₀	6.5	6.5	> 2.0	n/a	Yes
CO	23.9	23.9	> 2.0 and SSPE2 ≥ 200,000 lb/yr	6,039	No
VOC	21.3	21.3	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO_x, PM₁₀, 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:

- NO_x: Latest EPA Tier Certification level for applicable horsepower range
- VOC: Latest EPA Tier Certification level for applicable horsepower range
- PM₁₀: 0.10 g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)

The following condition will be listed on the ATC to ensure compliance with the PM₁₀ BACT emissions limit:

- Emissions from this IC engine shall not exceed 0.10 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]

B. Offsets

Since emergency IC engines are exempt from the offset requirements of Rule 2201, per Section 4.6.2, offsets are not required for this engine, and no offset calculations are required.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, SB288 Major Modifications, 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

As calculated in Section VII.C.2, daily emissions for NO_x are greater than 100 lb/day.

- c. Any project which results in the offset thresholds being surpassed

As shown in Section VII.C.4, an offset threshold will not be surpassed.

- 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 source 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.

2. Public Notice Action

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 ATCs for this equipment.

D. Daily Emissions Limits

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.16 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.16.1 and 3.16.2, 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 to ensure compliance:

- Emissions from this IC engine shall not exceed any of the following limits: 4.06 g-NO_x/bhp-hr, 0.37 g-CO/bhp-hr, or 0.33 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
- Emissions from this IC engine shall not exceed 0.10 g-PM₁₀/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

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 Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with 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 Rule 2201.

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.

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) 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 proposed location is in an attainment area for NO_x, CO, and SO_x. The proposed location is in a non-attainment area for PM₁₀. The increase in criteria pollutants due to the proposed equipment will not cause a violation as shown on the table below titled "Criteria pollutant Modeling Results".

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	NA ¹	X	NA ¹	X	X
NO _x	NA ¹	X	X	X	Pass
SO _x	NA ¹	NA ¹	X	NA ¹	Pass
PM ₁₀	X	X	X	NA ¹	Pass ²
PM _{2.5}	X	X	X	NA ¹	Pass ²

*Results were taken from the attached PSD spreadsheet.

¹The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour, and 24-hour) standards is not required.

²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

As shown, the calculated contribution of CO, NO_x, SO_x, PM₁₀, and PM_{2.5}, will not exceed the EPA significance level. This project is not expected to cause or make worse a violation of an air quality standard. See Appendix D of this document for the AAQA summary sheet.

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 following table demonstrates how the proposed engines will comply with the requirements of 40 CFR Part 60 Subpart IIII.

40 CFR 60 Subpart IIII Requirements for New Emergency IC Engines Powering Generators (2007 and Later Model Year)	Proposed Method of Compliance with 40 CFR 60 Subpart IIII Requirements
Engine(s) must meet the appropriate Subpart IIII emission standards for new engines, based on the model year, size, and number of liters per cylinder.	The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range, guaranteeing compliance with the emission standards of Subpart IIII.
Engine(s) must be fired on 500 ppm sulfur content fuel or less, and fuel with a minimum	The applicant has proposed the use of CARB certified diesel fuel, which meets all of the fuel

centane index of 40 or a maximum aromatic content of 35 percent by volume. Starting in October 1, 2010, the maximum allowable sulfur fuel content will be lowered to 15 ppm.	requirements listed in Subpart IIII. A permit condition enforcing this requirement was included earlier in this evaluation.
The operator/owner must install a non-resettable hour meter prior to startup of the engine(s).	The applicant has proposed to install a non-resettable hour meter. The following condition will be included on the permit: <ul style="list-style-type: none"> This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart IIII]
Emergency engine(s) may be operated for the purpose of maintenance and testing up to 100 hours per year. There is no limit on emergency use.	The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year. Thus, compliance is expected.
The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.	The following condition will be included on the permit: <ul style="list-style-type: none"> 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 and 40 CFR 60 Subpart IIII]

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)

Emergency engines are subject to this subpart if they are operated at a major or area source of Hazardous Air Pollutant (HAP) emissions. A major source of HAP emissions is a facility that has the potential to emit any single HAP at a rate of 10 tons/year or greater or any combinations of HAPs at a rate of 25 tons/year or greater. An area source of HAPs is a facility is not a major source of HAPs. The proposed engines are new stationary RICE located at an area source of HAP emissions; therefore, these engines are subject to this Subpart.

40 CFR 63 Subpart ZZZZ requires the following engines to comply with 40 CFR 60 Subpart IIII:

1. New emergency engines located at area sources of HAPs
2. Emergency engines rated less than or equal to 500 bhp and located at major sources of HAPs

The proposed engines will be in compliance with 40 CFR 60 Subpart IIII.

Additionally, 40 CFR 63 Subpart ZZZZ requires engines rated greater 500 bhp and located at major sources of HAPs to meet the notification requirements of §63.6645(h); however, that section only applies if an initial performance test is required. Since an initial performance test is not required for emergency engines, the notification requirement is not applicable.

The proposed engines are expected to be in compliance with 40 CFR 63 Subpart ZZZZ.

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 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 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)

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources (dated 3/2/01) 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. Therefore, a risk management review (RMR) was performed for this project. The RMR results are summarized in the following table, and can be seen in detail in Appendix D.

RMR Results				
Unit	Acute Hazard Index	Chronic Hazard Index	Cancer Risk	T-BACT Required?
S-3324-2-0	N/A	N/A	0.7 in a million	No
S-3324-3-0	N/A	N/A	0.7 in a million	No

The following conditions will be listed on the ATC to ensure compliance with 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]
- Emissions from this IC engine shall not exceed 0.10 g-PM₁₀/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]
- 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 Rule 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 PM₁₀ emission factor of 0.4 g-PM₁₀/bhp-hr.

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

The new engine has a PM₁₀ emission factor less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATC:

- {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 (NO_x), 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 engines are 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, compliance with District Rule 4702 requirements will satisfy requirements of District Rule 4701.

Rule 4702 Internal Combustion Engines

The following table demonstrates how the proposed engine(s) will comply with the requirements of District Rule 4702.

District Rule 4702 Requirements Emergency Standby IC Engines	Proposed Method of Compliance with District Rule 4702 Requirements
Operation of emergency standby engines is limited to 100 hours or less per calendar year for non-emergency purposes, verified through the use of a non-resettable elapsed operating time meter.	The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year. Thus, compliance is expected.
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: <ul style="list-style-type: none"> • {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] • {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]
The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.	A permit condition enforcing this requirement was shown earlier in the evaluation.
The owner/operator must 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: <ul style="list-style-type: none"> • {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]
Records of the total hours of operation of the emergency standby engine, type of fuel used, purpose for operating the engine, all hours of non-emergency and	The following conditions will be included on the permit: <ul style="list-style-type: none"> • {3496} The permittee shall maintain monthly

emergency operation, and 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.

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]

- 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 SO₂) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

$$\text{Volume SO}_2 = (n \times R \times T) \div P$$

n = moles SO₂

T (standard temperature) = 60 °F or 520 °R

$$R \text{ (universal gas constant)} = \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \text{°R}}$$

$$\frac{0.000015 \text{ lb} - S}{\text{lb} - \text{fuel}} \times \frac{7.1 \text{ lb}}{\text{gal}} \times \frac{64 \text{ lb} - \text{SO}_2}{32 \text{ lb} - S} \times \frac{1 \text{ MMBtu}}{9,051 \text{ scf}} \times \frac{1 \text{ gal}}{0.137 \text{ MMBtu}} \times \frac{\text{lb} - \text{mol}}{64 \text{ lb} - \text{SO}_2} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} - \text{mol} \cdot \text{°R}} \times \frac{520 \text{°R}}{14.7 \text{ psi}} \times 1,000,000 = 1.0 \text{ ppmv}$$

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 to ensure compliance:

- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site 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.

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

The following table demonstrates how the proposed engine(s) will comply with the requirements of Title 17 CCR Section 93115.

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, was included earlier in this evaluation.
The engine(s) must emit diesel PM at a rate less than or equal to 0.15 g/bhp-hr or must meet the diesel PM standard, as specified in the Off-road compression ignition standards for off-road engines with the same maximum rated power (Title 13 CCR, Section 2423).	The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range, guaranteeing compliance with the emission standards of Subpart IIII. 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.	The following condition will be included on the permit: <ul style="list-style-type: none"> 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 Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]
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).	The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range.
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	The District has verified that this engine is not located within 500' of a school.

<p>within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM</p>	
<p>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.</p>	<p>Permit conditions enforcing these requirements were shown earlier in the evaluation.</p>

California Environmental Quality Act (CEQA)

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.

IX. Recommendation

Pending a successful NSR Public Noticing period, issue Authority to Construct Permits C-3324-2-0 and '-3-0 subject to the permit conditions on the attached draft Authority to Construct Permits in Appendix A.

X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
C-3324-2-0	3020-10-F	1220 bhp IC engine	\$749.00
C-3324-3-0	3020-10-F	1220 bhp IC engine	\$749.00

Appendixes

- A. Draft ATCs
- B. BACT Guideline and BACT Analysis
- C. Emissions Data Sheet
- D. HRA Summary and AAQA

Appendix A
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-3324-2-0

LEGAL OWNER OR OPERATOR: MADERA COUNTY ENGINEERING DEPT
MAILING ADDRESS: 2037 W CLEVELAND AVE / MAIL DROP D
MADERA, CA 93637

LOCATION: 14191 ROAD 28
MADERA, CA 93637

EQUIPMENT DESCRIPTION:
1220 BHP CUMMINS MODEL QSK23-G7 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE
POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {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]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {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]
5. {4257} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart IIII]
6. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]
7. Emissions from this IC engine shall not exceed any of the following limits: 4.06 g-NOx/bhp-hr, 0.37 g-CO/bhp-hr, or 0.33 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
8. Emissions from this IC engine shall not exceed 0.10 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
9. {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 and 40 CFR 60 Subpart IIII]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services

C-3324-2-0 : Feb 15 2012 9:26AM - DAHLSTRA : Joint Inspection NOT Required

10. {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]
11. {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]
12. {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]
13. {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]
14. {4262} 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 Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart III]
15. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
16. {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]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-3324-3-0

LEGAL OWNER OR OPERATOR: MADERA COUNTY ENGINEERING DEPT
MAILING ADDRESS: 2037 W CLEVELAND AVE / MAIL DROP D
MADERA, CA 93637

LOCATION: 14191 ROAD 28
MADERA, CA 93637

EQUIPMENT DESCRIPTION:
1220 BHP CUMMINS MODEL QSK23-G7 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE
POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {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]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {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]
5. {4257} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart IIII]
6. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]
7. Emissions from this IC engine shall not exceed any of the following limits: 4.06 g-NOx/bhp-hr, 0.37 g-CO/bhp-hr, or 0.33 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
8. Emissions from this IC engine shall not exceed 0.10 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
9. {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 and 40 CFR 60 Subpart IIII]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

C-3324-3-0 : Feb 15 2012 9:29AM - DAHLSTRA : Joint Inspection NOT Required

10. {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]
11. {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]
12. {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]
13. {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]
14. {4262} 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 Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]
15. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
16. {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]

DRAFT

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: 7/10/2009
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/hp-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.

Top Down BACT Analysis for the Emergency IC Engine(s)

BACT Guideline 3.1.1 (July 10, 2009) 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 and VOC Emissions:

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, the following EPA and state regulations were consulted:

- 40 CFR Part 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
- 40 CFR Part 89 – Control of Emissions from New and In-Use Nonroad Compression – Ignition Engines
- 40 CFR Part 1039 – Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines
- Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

40 CFR Parts 89 and 1039, which apply only to nonroad engines, do not directly apply because the proposed emergency engine(s) do not meet the definition of a nonroad engine. Therefore, only Title 17 CCR, Section 93115 and 40 CFR Part 60 Subpart IIII apply directly to the proposed emergency engine(s).

Title 17 CCR, Section 93115.6(a)(3)(A) (CARB stationary diesel engine ATCM) applies to emergency standby diesel-fired engines and requires that such engines be certified to the emission levels in Table 1 (below). Please note that these levels are at least as stringent or more stringent than the emission levels in 40 CFR Subpart IIII.

Table 1: Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines g/bhp-hr (g/kW-hr)					
Maximum Engine Power	Tier	Model Year(s)	PM	NMHC+NOx	CO
50 ≤ HP < 75 (37 ≤ kW < 56)	2	2007	0.15 (0.20)	5.6 (7.5) 3.5 (4.7)	3.7 (5.0)
	4i	2008+			
75 ≤ HP < 100 (56 ≤ kW < 75)	2	2007	0.15 (0.20)	5.6 (7.5) 3.5 (4.7)	3.7 (5.0)
	3	2008+			
100 ≤ HP < 175 (75 ≤ kW < 130)	3	2007	0.15 (0.20)	3.0 (4.0)	3.7 (5.0)
		2008+			
175 ≤ HP < 300 (130 ≤ kW < 225)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
300 ≤ HP < 600 (225 ≤ kW < 450)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
600 ≤ HP ≤ 750 (450 ≤ kW ≤ 560)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
HP > 750 (kW > 560)	2	2007	0.15 (0.20)	4.8 (6.4)	2.6 (3.5)
		2008+			

Additionally, 40 CFR Subpart IIII establishes emission standards for emergency diesel IC engines. These emission standards are the same as those specified in the CARB ATCM, except for engines rated greater than or equal to 50 and less than 75 hp. For such IC engines, the CARB ATCM is more stringent.

Therefore, the most stringent applicable emission standards are those listed in the CARB ATCM (Table 1).

For IC engines rated greater than or equal to 50 hp and less than 75 hp the the highest Tier required is Tier 4i. For IC engines rated greater than or equal to 75 hp and less than 750 hp the highest Tier required is Tier 3. For engines rated equal to or greater than 750 hp the highest Tier required is Tier 2.

Also, please note that neither the state ATCM nor the Code of Federal Regulations require the installation of IC engines meeting a higher Tier standard than those listed above for emergency applications, due to concerns regarding the effectiveness of the exhaust emissions controls during periods of short-term operation (such as testing operational readiness of an emergency engine).

The proposed engines are rated at 1220 hp. Therefore, the applicable control technology option is EPA Tier 2 certification.

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 NO_x and VOC will be the use of an EPA Tier 2 certified engine. The applicant is proposing such a unit. Therefore, BACT will be satisfied.

2. BACT Analysis for PM₁₀ 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 2. Refer to the Top-Down BACT analysis for NO_x for a discussion regarding the determination of the EPA Tier level to be considered.

Please note Tier 2 or 3 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 engines with a PM₁₀ emission rate of 0.10 g/hp-hr. The proposed emission rate is more stringent than the 0.15 g/hp-hr requirement. Therefore, BACT will be satisfied.

Appendix C
Emissions Data Sheet



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2012 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990

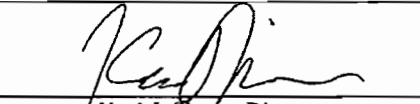
OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Cummins Inc.
(U.S. Manufacturer or Importer)

Certificate Number: CCEXL023.AAB-023

Effective Date:
09/06/2011

Expiration Date:
12/31/2012


Karl J. Simon, Director
Compliance and Innovative Strategies Division

Issue Date:
09/06/2011

Revision Date:
N/A

Model Year: 2012

Manufacturer Type: Original Engine Manufacturer

Engine Family: CCEXL023.AAB

Mobile/Stationary Indicator: Stationary

Emissions Power Category: 560<kW<=2237

Fuel Type: Diesel

After Treatment Devices: No After Treatment Devices Installed

Non-after Treatment Devices: Engine Design Modification, Electronic Control

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

Certification Summary Information Report

Engine Family	CCEXL023.AAB	Model Year	2012
Manufacturer Test Information			
Test Dataset #1			
Test Data Type	Test data for an engine model in a Pre-Verify Carryover Engine Family		
Verify Test Dataset Number	CCEXLM0000574	Manufacturer Test Dataset Number	SEH2007T0085
Engine Model	QSK23-G9 NR2	Engine Code	CPL3083FR50063
Engine Id	313746	Engine Displacement (in liters)	23.15
Number of hours Engine was run prior to test	100	Crankcase Emission Discharge Path	CCEs Routed into the Exhaust Downstream of After Treatment
Test Date	02/24/2007		
Test Fuel	300-500 ppm Low Sulfur Diesel		
Special Test Procedure Used	No		
Test Lab Name	CTC	Test Lab Code	1
Engine Operation	Constant Speed	Steady-State Cycle Type	Steady-State 5-Mode Cycle
Steady-State Modal Testing Type	Discrete-Modal Testing	Transient Test Required	No
Devices Regenerated during Steady State Test (Ramped Model)	None		
Devices Regenerated during Cold Start of a Transient Test	None		
Devices Regenerated during Hot Start of a Transient Test	None		
Test Comments			
Steady-State Discrete Modal Test Results			
Steady-State Discrete Modal Test Result #1			
Mode Identifier	1	Mode Power	792.2
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Carbon Dioxide	496584.786	
	Particulate Matter	23.977	
	Carbon Monoxide	234.675	
	Non-Methane Hydrocarbons	103.44	
	Nitrogen Oxides	5734.737	
Steady-State Discrete Modal Test Result #2			
Mode Identifier	2	Mode Power	593.9
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Carbon Monoxide	130.622	
	Carbon Dioxide	373615.397	
	Particulate Matter	22.62	
	Nitrogen Oxides	3727.371	
	Non-Methane Hydrocarbons	109.79	
Steady-State Discrete Modal Test Result #3			
Mode Identifier	3	Mode Power	396.5
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Particulate Matter	26.735	
	Carbon Monoxide	149.869	

Certification Summary Information Report

Engine Family	CCEXL023.AAB	Model Year	2012	
Non-Methane Hydrocarbons			114.67	
Carbon Dioxide			260237.311	
Nitrogen Oxides			1968.1	
Steady-State Discrete Modal Test Result #4				
Mode Identifier	4	Mode Power	197.5	
Devices Regenerated during this Mode				
Pollutant Name		Pollutant Mode Test Result (Initial)		
Nitrogen Oxides			619.146	
Particulate Matter			57.236	
Carbon Dioxide			147595.555	
Non-Methane Hydrocarbons			150.25	
Carbon Monoxide			235.747	
Steady-State Discrete Modal Test Result #5				
Mode Identifier	5	Mode Power	79.3	
Devices Regenerated during this Mode				
Pollutant Name		Pollutant Mode Test Result (Initial)		
Non-Methane Hydrocarbons			158.78	
Carbon Monoxide			173.037	
Carbon Dioxide			72189.406	
Nitrogen Oxides			288.166	
Particulate Matter			36.237	
Steady-State Discrete Modal Certification Levels				
Pollutant Name	Certification Steady-State Emission Result Value (g/kW-hr)	EPA Standard Limit Value (g/kW-hr)	Family Emission Limit Value (g/kW-hr)	Pass/Fail Indicator
Nitrogen Oxides plus Non-Methane Hydrocarbons	5.8	6.4	--	Pass
Nitrogen Oxides	5.41	--	--	--
Carbon Dioxide	662.19	--	--	--
Particulate Matter	0.11	0.20	--	Pass
Non-Methane Hydrocarbons	0.40	--	--	--
Carbon Monoxide	0.5	3.5	--	Pass
Test Dataset #2				
Test Data Type	Test data for an engine model in a Pre-Verify Carryover Engine Family			
Verify Test Dataset Number	CCEXLM0000572	Manufacturer Test Dataset Number	SEH2006T0521-1	
Engine Model	QSK23-G7 NR2	Engine Code	CPL2621FR50047	
Engine Id	313746	Engine Displacement (in liters)	23.15	
Number of hours Engine was run prior to test	100	Crankcase Emission Discharge Path	CCEs Routed into the Exhaust Downstream of After Treatment	
Test Date	10/24/2006			
Test Fuel	300-500 ppm Low Sulfur Diesel			
Special Test Procedure Used	No			
Test Lab Name	CTC	Test Lab Code	1	
Engine Operation	Constant Speed	Steady-State Cycle Type	Steady-State 5-Mode Cycle	
Steady-State Modal Testing Type	Discrete-Modal Testing	Transient Test Required	No	
Devices Regenerated during Steady State Test (Ramped Model)	None			
Devices Regenerated during Cold Start of a Transient Test	None			

Engine Family	CCEXL023.AAB	Model Year	2012
Devices Regenerated during Hot Start of a Transient Test	None		
Test Comments			
Steady-State Discrete Modal Test Results			
Steady-State Discrete Modal Test Result #1			
Mode Identifier	1	Mode Power	905.7
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Non-Methane Hydrocarbons	110.98	
	Carbon Monoxide	426.05	
	Carbon Dioxide	558564.53	
	Nitrogen Oxides	8148	
	Particulate Matter	66.21	
Steady-State Discrete Modal Test Result #2			
Mode Identifier	2	Mode Power	680.9
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Non-Methane Hydrocarbons	147.25	
	Carbon Monoxide	148.73	
	Carbon Dioxide	435383.89	
	Nitrogen Oxides	4042.86	
	Particulate Matter	33.32	
Steady-State Discrete Modal Test Result #3			
Mode Identifier	3	Mode Power	453.4
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Non-Methane Hydrocarbons	163.84	
	Nitrogen Oxides	2071.08	
	Particulate Matter	36.74	
	Carbon Monoxide	161.48	
	Carbon Dioxide	303566.36	
Steady-State Discrete Modal Test Result #4			
Mode Identifier	4	Mode Power	226.6
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Nitrogen Oxides	866.1	
	Non-Methane Hydrocarbons	176.57	
	Carbon Dioxide	165252.87	
	Carbon Monoxide	240.07	
	Particulate Matter	72.06	
Steady-State Discrete Modal Test Result #5			
Mode Identifier	5	Mode Power	90.8
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Particulate Matter	55.03	
	Nitrogen Oxides	382.88	
	Carbon Monoxide	214.51	
	Non-Methane Hydrocarbons	201.01	

Certification Summary Information Report

Engine Family	CCEXL023.AAB	Model Year	2012
	Carbon Dioxide		87783.25

Steady-State Discrete Modal Certification Levels

Pollutant Name	Certification Steady-State Emission Result Value (g/kW-hr)	EPA Standard Limit Value (g/kW-hr)	Family Emission Limit Value (g/kW-hr)	Pass/Fail Indicator
Carbon Dioxide	667.77	--	--	--
Particulate Matter	0.13	0.20	--	Pass
Non-Methane Hydrocarbons	0.44	--	--	--
Carbon Monoxide	0.5	3.5	--	Pass
Nitrogen Oxides	5.45	--	--	--
Nitrogen Oxides plus Non-Methane Hydrocarbons	5.9	6.4	--	Pass

For model QSK23-G7 NR2

Test Dataset #3

Test Data Type	Test data for an engine model in a Pre-Verify Carryover Engine Family		
Verify Test Dataset Number	CCEXLM0000573	Manufacturer Test Dataset Number	SEH2006T0521-2
Engine Model	QSK23-G9 NR2	Engine Code	CPL3083FR50063
Engine Id	313746	Engine Displacement (in liters)	23.15
Number of hours Engine was run prior to test	100	Crankcase Emission Discharge Path	CCEs Routed into the Exhaust Downstream of After Treatment
Test Date	10/24/2006		
Test Fuel	300-500 ppm Low Sulfur Diesel		
Special Test Procedure Used	No		
Test Lab Name	CTC	Test Lab Code	1
Engine Operation	Constant Speed	Steady-State Cycle Type	Steady-State 5-Mode Cycle
Steady-State Modal Testing Type	Discrete-Modal Testing	Transient Test Required	No
Devices Regenerated during Steady State Test (Ramped Model)	None		
Devices Regenerated during Cold Start of a Transient Test	None		
Devices Regenerated during Hot Start of a Transient Test	None		
Test Comments			

Steady-State Discrete Modal Test Results

Steady-State Discrete Modal Test Result #1

Mode Identifier	1	Mode Power	783.1
Devices Regenerated during this Mode			
Pollutant Name	Pollutant Mode Test Result (Initial)		
Non-Methane Hydrocarbons	59.88		
Carbon Monoxide	796.69		
Nitrogen Oxides	7086.23		
Carbon Dioxide	484796.42		
Particulate Matter	76.7		

Steady-State Discrete Modal Test Result #2

Mode Identifier	2	Mode Power	588.8
Devices Regenerated during this Mode			
Pollutant Name	Pollutant Mode Test Result (Initial)		
Carbon Monoxide	253.18		
Particulate Matter	25.95		

Certification Summary Information Report

Engine Family	CCEXL023.AAB	Model Year	2012	
Carbon Dioxide			382410.53	
Non-Methane Hydrocarbons			76.95	
Nitrogen Oxides			3725.02	
Steady-State Discrete Modal Test Result #3				
Mode Identifier	3	Mode Power	392	
Devices Regenerated during this Mode				
Pollutant Name		Pollutant Mode Test Result (Initial)		
Carbon Dioxide			262383.04	
Particulate Matter			32.91	
Carbon Monoxide			232.63	
Non-Methane Hydrocarbons			90.89	
Nitrogen Oxides			1947.77	
Steady-State Discrete Modal Test Result #4				
Mode Identifier	4	Mode Power	195.9	
Devices Regenerated during this Mode				
Pollutant Name		Pollutant Mode Test Result (Initial)		
Carbon Dioxide			149005.78	
Particulate Matter			81.72	
Nitrogen Oxides			614.23	
Carbon Monoxide			343.41	
Non-Methane Hydrocarbons			126.47	
Steady-State Discrete Modal Test Result #5				
Mode Identifier	5	Mode Power	78.8	
Devices Regenerated during this Mode				
Pollutant Name		Pollutant Mode Test Result (Initial)		
Particulate Matter			39.48	
Carbon Dioxide			71693.8	
Carbon Monoxide			182.29	
Nitrogen Oxides			279.28	
Non-Methane Hydrocarbons			149.7	
Steady-State Discrete Modal Certification Levels				
Pollutant Name	Certification Steady-State Emission Result Value (g/kW-hr)	EPA Standard Limit Value (g/kW-hr)	Family Emission Limit Value (g/kW-hr)	Pass/Fail Indicator
Nitrogen Oxides	5.62	--	--	--
Non-Methane Hydrocarbons	0.33	--	--	--
Carbon Dioxide	675.73	--	--	--
Carbon Monoxide	0.8	3.5	--	Pass
Particulate Matter	0.14	0.20	--	Pass
Nitrogen Oxides plus Non-Methane Hydrocarbons	6.0	6.4	--	Pass
Test Dataset #4				
Test Data Type	Test data for an engine model in a Pre-Verify Carryover Engine Family			
Verify Test Dataset Number	CCEXLM0000571	Manufacturer Test Dataset Number	SEH2009T0141	
Engine Model	QSK23-NR2	Engine Code	CPL3352FR50069	
Engine Id	319546	Engine Displacement (in liters)	23.15	
Number of hours Engine was run prior to test	100	Crankcase Emission Discharge Path	CCEs Routed into the Exhaust Downstream of After Treatment	
Test Date	05/19/2009			

Certification Summary Information Report

Engine Family	CCEXL023.AAB	Model Year	2012
Test Fuel 300-500 ppm Low Sulfur Diesel			
Special Test Procedure Used	No		
Test Lab Name	CTC	Test Lab Code	1
Engine Operation	Constant Speed	Steady-State Cycle Type	Steady-State 5-Mode Cycle
Steady-State Modal Testing Type	Discrete-Modal Testing	Transient Test Required	No
Devices Regenerated during Steady State Test (Ramped Model) None			
Devices Regenerated during Cold Start of a Transient Test None			
Devices Regenerated during Hot Start of a Transient Test None			
Test Comments			
Steady-State Discrete Modal Test Results			
Steady-State Discrete Modal Test Result #1			
Mode Identifier	1	Mode Power	910.6
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Non-Methane Hydrocarbons	104.55	
	Carbon Monoxide	322.6	
	Particulate Matter	22.05	
	Nitrogen Oxides	6111.66	
	Carbon Dioxide	573373.5	
Steady-State Discrete Modal Test Result #2			
Mode Identifier	2	Mode Power	682.3
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Carbon Monoxide	98.91	
	Particulate Matter	23.2	
	Carbon Dioxide	420919	
	Nitrogen Oxides	4088.27	
	Non-Methane Hydrocarbons	143.16	
Steady-State Discrete Modal Test Result #3			
Mode Identifier	3	Mode Power	455.2
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Particulate Matter	24.23	
	Carbon Dioxide	291174.2	
	Nitrogen Oxides	2088.94	
	Carbon Monoxide	112.93	
	Non-Methane Hydrocarbons	150.8	
Steady-State Discrete Modal Test Result #4			
Mode Identifier	4	Mode Power	228.2
Devices Regenerated during this Mode			
	Pollutant Name	Pollutant Mode Test Result (Initial)	
	Carbon Monoxide	201.64	
	Particulate Matter	53.96	
	Nitrogen Oxides	914.82	
	Carbon Dioxide	160479.7	

Certification Summary Information Report

Engine Family	CCEXL023.AAB	Model Year	2012	
Non-Methane Hydrocarbons		142.73		
Steady-State Discrete Modal Test Result #5				
Mode Identifier	5	Mode Power	91.7	
Devices Regenerated during this Mode				
Pollutant Name		Pollutant Mode Test Result (Initial)		
Carbon Dioxide		84706.7		
Non-Methane Hydrocarbons		156.49		
Nitrogen Oxides		386.65		
Particulate Matter		44.23		
Carbon Monoxide		232.26		
Steady-State Discrete Modal Certification Levels				
Pollutant Name	Certification Steady-State Emission Result Value (g/kW-hr)	EPA Standard Limit Value (g/kW-hr)	Family Emission Limit Value (g/kW-hr)	Pass/Fail Indicator
Carbon Monoxide	0.4	3.5	--	Pass
Carbon Dioxide	645.76	--	--	--
Nitrogen Oxides plus Non-Methane Hydrocarbons	5.7	6.4	--	Pass
Non-Methane Hydrocarbons	0.39	--	--	--
Nitrogen Oxides	5.27	--	--	--
Particulate Matter	0.09	0.20	--	Pass

Appendix D
HRA Summary and AAQA

**San Joaquin Valley Air Pollution Control District
Risk Management Review
REVISED**

To: Ashley Dahlstrom - Permit Services
 From: Cheryl Lawler - Permit Services
 Date: February 13, 2012
 Facility Name: Madera County Engineering Department
 Location: 14191 Road 28, Madera
 Application #(s): C-3324-2-0 & 3-0
 Project #: C-1113280

A. RMR SUMMARY

RMR Summary				
Categories	Emergency Diesel ICE (Unit 2-0)	Emergency Diesel ICE (Unit 3-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	N/A ¹	N/A ¹	N/A ¹
Acute Hazard Index	N/A ²	N/A ²	N/A ²	0.00
Chronic Hazard Index	N/A ²	N/A ²	N/A ²	0.00
Maximum Individual Cancer Risk	7.0E-07	7.0E-07	1.40E-06	1.40E-06
T-BACT Required?	No	No		
Special Permit Conditions?	Yes	Yes		

1. Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in a prioritization score greater than 1.0.
2. Acute and Chronic Hazard Indices were not calculated since there is no risk factor, or the risk factor is so low that the risk has been determined to be insignificant for this type of unit.

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Units 2-0 & 3-0

1. The PM10 emissions rate shall not exceed 0.1 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
2. 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]
3. 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 Rule 4702 and 17 CCR 93115]

B. RMR REPORT

I. Project Description

Technical Services received a request on January 30, 2012, to re-run an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for two 1220 bhp emergency diesel-fired internal combustion engines. The AAQA and RMR are being re-run because the engines are different engines than those originally run for this project. Also, an AAQA was not initially performed for this project.

II. Analysis

Technical Services performed a screening level health risk assessment using the District developed DICE database.

The following parameters were used for the review:

Analysis Parameters Units 2-0 & 3-0			
Source Type	Point	Location Type	Urban
BHP	1220	PM ₁₀ g/hp-hr	0.1
Closest Receptor (m)	126.49	Quad	2
Max Hours per Year	50	Type of Receptor	Residence & Business

Technical Services performed modeling for criteria pollutants NO_x, SO_x, PM₁₀, and PM_{2.5}; as well as a RMR. The emission rates used for criteria pollutant modeling were 546 lb/yr NO_x, 1 lb/yr SO_x, 13 lb/yr PM₁₀, and 13 lb/yr PM_{2.5}. The engineer supplied the maximum fuel rate for the IC engine used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	NA ¹	X	NA ¹	X	X
NO _x	NA ¹	X	X	X	Pass
SO _x	NA ¹	NA ¹	X	NA ¹	Pass
PM ₁₀	X	X	X	NA ¹	Pass ²
PM _{2.5}	X	X	X	NA ¹	Pass ²

*Results were taken from the attached PSD spreadsheet.

¹The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour, and 24-hour) standards is not required.

²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusions

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

The cancer risk associated with the operation of the proposed diesel IC engines is less than 1.0 in a million. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT) for PM10.

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for each proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.