San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

NOV 05 2012

Lucien Thomas
Consolidated Emergency Dispatch
3705 Oakdale Road
Modesto, CA 95355

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: N-1122763

Dear Ms. Thomas:

Enclosed for your review and comment is the District's analysis of Consolidated Emergency Dispatch's application for an Authority to Construct for the installation of two 757 bhp diesel-fired emergency engines each powering an electrical generator, located at 3705 Oakdale Road, Modesto, 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 Mr. Fred Cruz of Permit Services at (209) 557-6456.

Sincerely,

David Warner
Director of Permit Services

DW:FJC/st

Enclosures

Cc: Ms. Patricia Hill Thomas
c/o Stanislaus County
1010 10th Street – Suite 6800
Modesto, CA 95354

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
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1990 E. Gettysburg Avenue
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www.valleyair.org www.healthyairliving.com

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AIR POLLUTION CONTROL DISTRICT

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NOV 0 5 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: N-1122763

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Consolidated Emergency Dispatch's application for an Authority to Construct for the installation of two 757 bhp diesel-fired emergency engines each powering an electrical generator, located at 3705 Oakdale Road, Modesto, 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.

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Modesto Bee
Modesto Bee

**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AUTHORITIES 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 Consolidated Emergency Dispatch for the installation of two 757 bhp diesel-fired emergency engines each powering an electrical generator, located at 3705 Oakdale Road, Modesto, CA.

The analysis of the regulatory basis for this proposed action, Project #N-1122763, 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, 4800 ENTERPRISE WAY, MODESTO, CA 95356**

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

Facility Name:	Consolidated Emergency Dispatch Center (Stanislaus County)	Date:	October 30, 2012
Mailing Address:	1010 10th Street, Suite 6800 Modesto, CA 95354	Engineer: Lead Engineer:	Fred Cruz Nick Peirce
Contact Person:	Patricia Hill Thomas		
Telephone:	(209) 525-6333		
FAX:	(209) 544-6226		
Email:	ThomasP@stancounty.com		
Application Nos:	N-4251-2-0 & -3-0		
Project No:	N-1122763		
Complete:	October 22, 2012		

I. PROPOSAL:

The Consolidated Emergency Dispatch Center (Stanislaus County 911 Center) submitted Authority to Construct (ATC) applications to install two 757 bhp Generac diesel-fired emergency standby internal combustion (IC) engines each powering an electrical generator.

II. APPLICABLE RULES:

Rule 2201 New and Modified Stationary Source Review Rule (4/21/2011)
Rule 2520 Federally Mandated Operating Permits (6/21/2001)
Rule 4001 New Source Performance Standards (4/14/1999)
Rule 4002 National Emission Standards for Hazardous Air Pollutants (5/20/2004)
Rule 4101 Visible Emissions (2/17/2005)
Rule 4102 Nuisance (12/17/1992)
Rule 4201 Particulate Matter Concentration (12/17/1992)
Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/2003)
Rule 4702 Stationary Internal Combustion Engines – Phase 2 (8/18/2011)
Rule 4801 Sulfur Compounds (12/17/1992)
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 facility is located at 3705 Oakdale Road, Modesto, 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:

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

V. EQUIPMENT LISTING:

N-4251-2-0: 757 BHP GENERAC MODEL TAD1641GE DIESEL-FIRED (TIER 2 CERTIFIED) EMERGENCY ENGINE POWERING AN ELECTRICAL GENERATOR. (ENGINE #1)

N-4251-3-0: 757 BHP GENERAC MODEL TAD1641GE DIESEL-FIRED (TIER 2 CERTIFIED) EMERGENCY ENGINE POWERING AN ELECTRICAL GENERATOR. (ENGINE #2)

VI. EMISSION CONTROL TECHNOLOGY EVALUATION:

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

NOx, CO, VOC and PM10:

The proposed engines do not meet the latest published Tier Certification requirements. However, compliance with both BACT and CARB's stationary ATCM requirements will be met as described below (see Appendix B for a copy of the emissions data sheet and/or the ARB/EPA executive order).

Although Tier 4i requirements for this category of engine went into effect in 2011, CARB regulations and District policy allows for the availability of Tier 4i units to be accounted for. CARB's Stationary ATCM exemption §93115.3(u) says, "If the Executive Officer or District finds, based on verifiable information from the engine manufacturer, distributor, or dealer, that current model year engines meeting the current emission standards are not available or not available in sufficient numbers or in a sufficient range of makes, models, and horsepower ratings, then the

Executive Officer or the District may allow the sale, purchase, or installation of a new stock engine meeting the emission standards from the previous model year to meet the new stationary diesel-fueled engine emission standards pursuant to Title 13 of the California Code of Regulations or 40 CFR part 89." The District has thoroughly investigated, with each of the common engine manufacturers, the availability of Tier 4i units in this size range and has found them to be currently unavailable. Since Tier 4i units are not available, as described above, the installation of Tier 2 units is acceptable, as Tier 2 is the prior published Tier in this engine's size range.

SOx:

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)

The applicant supplied the emissions factor for NO_X and VOC emissions as a combined emission factor. Therefore, the District will use data from the EPA document *"Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling – Compressions Ignition"*, dated November 2002, as presented in the following table to estimate NO_X and VOC emissions (District assumption).

Tier 2 and Tier 3 Diesel-Fired IC Engines NO_X and VOC Estimated Emissions						
Horsepower Range (bhp)	Combined Standard, NO_X + VOC (g/bhp-hr)		Estimated NO_X Emissions (g/bhp-hr)		Estimated VOC Emissions (g/bhp-hr)	
	Tier 2	Tier 3	Tier 2	Tier 3	Tier 2	Tier 3
≥ 750	4.8	N/A	4.5	N/A	0.3	N/A

These 757 bhp engines are each a Tier 2 certified IC engine and the applicant supplied the combined NO_X + VOC emissions factor as 4.0 g/bhp-hr. The emission factors will be the same for each engine. Therefore, the NO_X and VOC emissions factors are calculated as follows:

NO_X (g/bhp-hr) = NO_X + VOC (g/bhp-hr) x (4.5 g/bhp-hr ÷ 4.8 g/bhp-hr)
NO_X g/bhp-hr = 4.0 g/bhp-hr x (4.5 g/bhp-hr ÷ 4.8 g/bhp-hr)
NO_X = 3.75 g/bhp-hr

VOC (g/bhp-hr) = NO_X + VOC (g/bhp-hr) x (0.3 g/bhp-hr ÷ 3.5 g/bhp-hr)
VOC g/bhp-hr = 4.0 g/bhp-hr x (0.3 g/bhp-hr ÷ 4.8 g/bhp-hr)
VOC = 0.25 g/bhp-hr

B. Emission Factors

Emission factors for each engine are as follows:

Pollutant	Emission Factor (g/bhp-hr)	Source
NOx	3.75	Engine manufacturer
CO	0.50	Engine manufacturer
VOC	0.25	Engine manufacturer
PM10	0.14	Engine manufacturer
SOx	0.005	Calculated below

$$\frac{0.000015\ lb-S}{lb-fuel}\times\frac{7.1\ lb-fuel}{gallon}\times\frac{2\ lb-SO_2}{1\ lb-S}\times\frac{1\ gal}{137{,}000\ Btu}\times\frac{1\ bhp\ input}{0.35\ bhp\ out}\times\frac{2{,}542.5\ Btu}{bhp-hr}\times\frac{453.6\ g}{lb}=0.005\ \frac{g-SO_x}{bhp-hr}$$

C. Calculations

1. Pre-Project Emissions (PE1)

These are new emission units and PE1 will equal zero for all pollutants for each engine.

2. Post-Project PE (PE2)

The potential to emit for this emergency IC engine is based on the maximum operating capacity of the engine for 24 hours per day. The following calculation for NO_x emissions is representative of emission calculations for all pollutants. Annual emissions are based on 50 hours per year for non-emergency operation.

NO_x: 3.75 g/hp-hr × 757 hp × lb/453.6 g

NO_x: 6.26 lb/hr, 150.2 lb/day, 313 lb/yr
CO: 0.80 lb/hr, 20.0 lb/day, 42 lb/yr
VOC: 0.42 lb/hr, 10.0 lb/day, 21 lb/yr
PM_{10}: 0.23 lb/hr, 5.6 lb/day, 12 lb/yr

SO_x: 0.01 lb/hr, 0.2 lb/day, 0.4 lb/yr [1]

	NO_x	CO	VOC	PM_{10}	SO_x
Daily PE	150.2	20.0	10.0	5.6	0.2
Annual PE	313	42	21	12	0

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. There is one permit unit on site.

Pre-Project Stationary Source Potential to Emit (SSPE1) (lb/year)

Permit No.	NOx	CO	VOC	PM_{10}	SOx
N-4251-1-0	182	27	4	4	0
Total	182	27	4	4	0

*Based on emission calculations performed for project N-990998.

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.

[1] Per District Policy APR 1105, Use of Significant Figures, annual emissions less than 0.5 lb are set to zero.

Post Project Stationary Source Potential to Emit (SSPE2) (lb/year)					
Permit No.	NOx	CO	VOC	PM_{10}	SOx
N-4251-1-0	182	27	4	4	0
N-4251-2-0	313	42	21	12	0
N-4251-3-0	313	42	21	12	0
Total	808	111	46	28	0
Major Source Threshold	20,000	200,000	20,000	140,000	140,000
Existing Major Source?	No	No	Yes	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 and SSPE2 does not have to be adjusted.

Major Source Determination					
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Major Source Threshold (lb/yr)	Existing Major Source?	Becoming a Major Source?
NO_X	182	808	20,000	No	No
SO_X	0	0	140,000	No	No
PM_{10}	4	28	140,000	No	No
CO	27	111	200,000	No	No
VOC	4	46	20,000	No	No

As demonstrated above, the facility is not an existing Major Source and does not become a Major Source as a result of this project.

6. Baseline Emissions (BE)

Since these are new emission units, BE will equal zero for all criteria pollutants.

7. SB 288 Major Modification:

The purpose of Major Modification calculations is to determine the following:

A. If Best Available Control Technology (BACT) is triggered for a new or modified emission unit that results in a Major Modification (District Rule 2201, Section 4.1.3); and

B. If a public notification is triggered (District Rule 2201, Section 5.4.1).

Based on the pre and post-project stationary source potential to emit calculations (less onsite Emission Reduction Credit's) in this document, the facility is not a Major Source for any pollutant. Therefore, the proposed project cannot trigger an SB288 Major Modification and no further calculations are required.

8. Federal Major Modification:

This facility is not a Major Source for any pollutant. Therefore, this project can not constitute a Federal Major Modification and no further discussion is required.

9. 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 C.

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 a Major Modification.

*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.

a. New emissions units – PE > 2.0 lb/day

Since these engines are each a new emissions unit, the daily emissions are compared to the BACT thresholds in the following table. The daily emissions for each emergency engine are the same and are listed below.

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -2-0 & -3-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO_X	150.2	> 2.0	N/A	Yes
SO_X	0.2	> 2.0	N/A	No
PM_{10}	5.6	> 2.0	N/A	Yes
CO	20.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	111	No
VOC	10.0	> 2.0	N/A	Yes

Thus, BACT will be triggered for NO_X, VOC and PM10 emissions for each engine.

2. BACT Guideline

BACT Guideline 3.1.1, which appears in Appendix D 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 D of this report, BACT is satisfied with:

NO_X: Tier 2 Certified engine
VOC: Tier 2 Certified engine
PM_{10}: Use of Tier Certified engine with 0.15 g-PM10/hp-hr, or less, emission factor. (ATCM)

The following condition will be listed on each ATC to ensure compliance with the PM_{10} BACT requirements:

- Emissions from this IC engine shall not exceed 0.14 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]

B. Offsets

Per Section 4.6.2 of Rule 2201, emergency IC engines are exempt from offset requirements. Therefore, offset calculations are not required.

C. Public Notification

1. Applicability

Public noticing is required for:

a. Any new Major Source, which is a new facility that is also a Major Source

This is an existing facility and does not become a Major Source as a result of this project.

b. Major Modifications

As previously demonstrated, this project is not a Major Modification.

c. Any new emissions unit with a Potential to Emit greater than 100 lb/day for any one pollutant

As previously calculated, daily emissions for NOx exceed 100 lb/day for each engine and Public Notice is required.

d. Any project which results in the offset thresholds being surpassed

As previously calculated, there are no offset thresholds that are surpassed.

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

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

2. Public Notice Action

As discussed above, public noticing is required for this project since NOx emissions are greater than 100 lb/day.

D. Daily Emissions Limits

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, 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 each ATC to ensure compliance:

- Emissions from this IC engine shall not exceed any of the following limits: 3.75 g-NOx/bhp-hr, 0.50 g-CO/bhp-hr, or 0.25 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

- Emissions from this IC engine shall not exceed 0.14 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]

- 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 Rule 2201.

2. Monitoring

Monitoring is not required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. As required by District Rule 4702, *Stationary Internal Combustion Engines - Phase 2*, each C engine is subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

4. Reporting

Reporting is not required to ensure compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

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 Technical Services Division of the SJVAPCD conducted the required analysis.

As shown by the AAQA summary sheet in Appendix E, the proposed equipment will not cause or make worse a violation of an air quality standard for NO_X, CO, PM10, or SO_X.

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

Pursuant to § 60.4200 of Subpart IIII, this engine is subject to this federal regulation. However, the District has not been delegated authorization to enforce the requirements of this regulation. The applicant will be so notified in a permit condition.

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)

Pursuant to §63.6585 of Subpart ZZZZ, this engine is subject to this federal regulation. However, the District has not been delegated authorization to enforce the requirements of 40 CFR 63 Subpart ZZZZ for non-Part 70 sources (Major Sources). The applicant will be so notified in a permit condition.

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 E.

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]	>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	**1.2E-06**	**1.2E-06**	2.4E-06	4.17E-06
T-BACT Required?	**Yes**	**Yes**		
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.

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 for PM_{10} (see Appendix D), which is the use of an emergency engine with certified PM10 emission rate of 0.1 g/bhp-hr, or less. Therefore, compliance with the District's Risk Management Policy is expected.

The cancer risk associated with the operation of the proposed diesel IC engine is greater than 1.0 in a million, but less than 10 in a million. In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT) for PM10.

The following conditions will be listed on each ATC to ensure compliance with the RMR:

Units 2-0 & 3-0

1. The PM10 emissions rate shall not exceed **0.14** 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]

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 engines each have 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:

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

Rule 4701 Internal Combustion Engines – Phase 1

The requirements of District Rule 4702 are as stringent, or more stringent, to the requirements of District Rule 4701. Therefore, the proposed emergency internal combustion engine will comply with the requirements of District Rule 4702 and should also meet the requirements of District Rule 4701.

Rule 4702 Internal Combustion Engines – Phase 2

The following table demonstrates how the proposed engine 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 each 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] • {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 engines 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 each 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]
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 each permit: • {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 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) = $\frac{10.73\,\text{psi}\cdot\text{ft}^3}{\text{lb}\cdot\text{mol}\cdot{}^\circ\text{R}}$

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

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. See area map.

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 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 engines 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.
Engine emission limits are limited by 93115.6(a)(3). (Title 13 CCR, Section 93115).	The engine proposed will meet the emission limits of this section.
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: • 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 4701 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	The District has verified that this engine is not located within 500' of a school.
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.	Permit conditions enforcing these requirements were shown earlier in the evaluation.

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.

Consistent with California Environmental Quality Act (CEQA) and CEQA Guidelines requirements, the San Joaquin Valley Air Pollution Control District (District) has adopted procedures and guidelines for implementing CEQA. The District's Environmental Review Guidelines (ERG) establishes procedures for avoiding unnecessary delay during the District's permitting process while ensuring that significant environmental impacts are thoroughly and consistently addressed. The ERG includes policies and procedures to be followed when processing permits for projects that are exempt under CEQA.

The State Legislature granted a number of exemptions from CEQA, including projects that require only ministerial approval. Based upon analysis of its own laws and consideration of CEQA provisions, the District has identified a limited number of District permitting activities considered to be ministerial approvals. As set forth in §4.2.1 of the ERG, projects permitted consistent with the District's *Guidelines for Expedited Application Review* (GEAR) are standard application reviews in which little or no discretion is used in issuing Authority to Construct (ATC) documents.

For the proposed project, the District performed an Engineering Evaluation (this document) and determined that the project qualifies for processing under the procedures set forth in the District's Permit Services Procedures Manual in the Guidelines for Expedited Application Review (GEAR). Thus, as discussed above, this issuance of such ATCs is a ministerial approval for the District and is not subject to CEQA provisions.

IX. RECOMMENDATION:

Pending a successful NSR Public Noticing period, issue Authorities to Construct N-4251-2-0 and N-4251-3-0 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**
N-4251-2-0	3020-10-D	757 bhp IC engine	$479
N-4251-3-0	3020-10-D	757 bhp IC engine	$479

Appendices:

A. Draft Authority to Construct permits N-4251-2-0 and N-4251-3-0
B. Emissions Data
C. QNEC Calculations
D. BACT Guideline and BACT Analysis
E. HRA Summary and AAQA

Appendix A

Authority to Construct permits
N-4251-2-0 and N-4251-3-0

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-4251-2-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: CONSOLIDATED EMERGENCY DISPATC
MAILING ADDRESS: MODESTO REGIONAL FIRE AUTHORITY/ATTN: AP
3705 OAKDALE ROAD
MODESTO, CA 95357

LOCATION: 3705 OAKDALE RD
MODESTO, CA 95355

EQUIPMENT DESCRIPTION:
757 BHP GENERAC MODEL TAD1641GE DIESEL-FIRED (TIER 2 CERTIFIED) EMERGENCY ENGINE POWERING AN ELECTRICAL GENERATOR. (ENGINE #1)

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. {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]
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. 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]
6. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 4701 and 4702 and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 3.75 g-NOx/bhp-hr, 0.50 g-CO/bhp-hr, or 0.25 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
8. Emissions from this IC engine shall not exceed 0.14 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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

DRAFT

DAVID WARNER, Director of Permit Services
N-4251-2-0 : Oct 30 2012 11:03AM – CRUZF Joint Inspection NOT Required

9. 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]

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. 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 4701 and 4702 and 17 CCR 93115]

12. 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 Rules 4701 and 4702]

13. 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 Rules 4701 and 4702]

14. 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 Rules 4701 and 4702 and 17 CCR 93115]

15. The permittee shall maintain monthly records of the type of fuel purchased. [District Rules 4701 and 4702 and 17 CCR 93115]

16. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 4701 and 4702 and 17 CCR 93115]

17. U.S. EPA administers the requirements of 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ. The owner or operator shall comply with the emission and operating limitations, testing requirements, initial and continuous compliance requirements as specified in these subparts. The owner or operator shall submit all applicable notifications, reports, and records to the administrator by the required compliance dates. [District Rules 4001 and 4002]

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-4251-3-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CONSOLIDATED EMERGENCY DISPATC
MAILING ADDRESS: MODESTO REGIONAL FIRE AUTHORITY/ATTN: AP
3705 OAKDALE ROAD
MODESTO, CA 95357

LOCATION: 3705 OAKDALE RD
MODESTO, CA 95355

EQUIPMENT DESCRIPTION:
757 BHP GENERAC MODEL TAD1641GE DIESEL-FIRED (TIER 2 CERTIFIED) EMERGENCY ENGINE POWERING AN ELECTRICAL GENERATOR. (ENGINE #2)

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. {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]
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. 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]
6. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 4701 and 4702 and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 3.75 g-NOx/bhp-hr, 0.50 g-CO/bhp-hr, or 0.25 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
8. Emissions from this IC engine shall not exceed 0.14 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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

DRAFT

DAVID WARNER, Director of Permit Services
N-4251-3-0 : Oct 30 2012 11:05AM – CRUZF : Joint Inspection NOT Required

9. 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]

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. 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 4701 and 4702 and 17 CCR 93115]

12. 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 Rules 4701 and 4702]

13. 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 Rules 4701 and 4702]

14. 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 Rules 4701 and 4702 and 17 CCR 93115]

15. The permittee shall maintain monthly records of the type of fuel purchased. [District Rules 4701 and 4702 and 17 CCR 93115]

16. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 4701 and 4702 and 17 CCR 93115]

17. U.S. EPA administers the requirements of 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ. The owner or operator shall comply with the emission and operating limitations, testing requirements, initial and continuous compliance requirements as specified in these subparts. The owner or operator shall submit all applicable notifications, reports, and records to the administrator by the required compliance dates. [District Rules 4001 and 4002]

Appendix B

Emissions Data Sheet

GENERAC®

STATEMENT OF EXHAUST EMISSIONS
2012 VOLVO DIESEL FUELED GENERATOR

Generator Model:	**SD/MD500/Gemini**	Aspiration:	**Turbocharged/Aftercooled**
kW_e Rating:	**500, GEM: 1000****	Rated RPM:	**1800 RPM**
Engine Family:	**CVPXL16.1ACB**	EPA Certificate #:	**CVPXL16.1ACB-007**
Engine Model:	**TAD1641GE**	CARB Certificate #:	**Not Applicable**
Rated Engine Power (BHP)*	**757**	SCAQMD CEP #:	**442149**
Fuel Consumption (gal/hr):	**31.3**	Emission Std. Category:	**Tier 2**

*This Engine Power is declared by the Engine Manufacturer of Record and the U.S. EPA. **Two Engines

Emissions based on declared Rated BHP of specific Engine Models.
(These values are Actual Exhaust Emissions during a 5-Mode test based on declared Rated BHP.)

CO	NOx + NMHC	PM	
0.67	**5.36**	**0.188**	Grams/kW-hr
0.50	**4.00**	**0.140**	Grams/bhp-hr

- The stated values are actual exhaust emission test measurements obtained from an engine representative of the type described above.
- Values based on 5-mode testing are official data of record as submitted to regulatory agencies for certification purposes. Testing was conducted in accordance with prevailing EPA & CARB protocols, which are typically accepted by SCAQMD and other regional authorities.
- No emission values provided above are to be construed as guarantees of emission levels for any given Generac generator unit.
- Generac Power Systems reserves the right to revise this information without prior notice.
- Consult state and local regulatory agencies for specific permitting requirements.
- The emission performance data supplied by the equipment manufacturer is only one element required toward completion of the permitting and installation process. State and local regulations may vary on a case-by-case basis and must be consulted by the permit applicant/equipment owner prior to equipment purchase or installation. The data supplied herein by Generac Power Systems cannot be construed as a guarantee of installability of the generating set.

INDUSTRIAL SALES
P.O. BOX 8 WAUKESHA, WI 53187 262-544-4800 FAX 262-544-4854

Appendix C

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

Using the emission calculations in this evaluation, $PE2_{quarterly}$ and $BE_{quarterly}$ can be calculated as follows:

This calculation is required for application emission profile purposes. It is assumed that the unit's annual emissions are evenly distributed throughout the year as follows: ΔPE (lb/qtr) = PE (lb/yr) ÷ 4 qtr/yr. Emissions are the same for each engine.

N-4251-2-0 and N-4251-3-0:

ΔPE_{NOx} = 313 lb-NOx/year – 0 lb-NOx/year = 313 lb/year
ΔPE_{CO} = 42 lb-CO/year – 0 lb-CO/year = 42 lb/year
ΔPE_{VOC} = 21 lb-VOC/year – 0 lb-VOC/year = 21 lb/year
ΔPE_{PM10} = 12 lb-PM10/year – 0 lb-PM10/year = 12 lb/year
ΔPE_{SOx} = 0 lb-SOx/year – 0 lb-SOx/year = 0 lb/year

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
NOx	78	78	78	79
CO	10	10	11	11
VOC	5	5	5	6
PM_{10}	3	3	3	3
SOx	0	0	0	0

Appendix D

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 NOx and VOC emissions:

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 does 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.

   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)	3.7 (5.0)
	4i	2008+		3.5 (4.7)	
75 ≤ HP < 100 (56 ≤ kW < 75)	2	2007	0.15 (0.20)	5.6 (7.5)	3.7 (5.0)
	3	2008+		3.5 (4.7)	
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 750 hp the highest Tier reqired 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 each rated at 757 bhp. 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

Ranking is not necessary since 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 and VOC will be the use of an EPA Tier 2 certified engine. The applicant is proposing such units. Therefore, the District's BACT requirements will be satisfied.

2. 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 2. 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 2 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

Ranking is not necessary since 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 that each meet this requirement. Therefore, BACT will be satisfied.

Appendix E

HRA Summary and AAQA

San Joaquin Valley Air Pollution Control District
Risk Management Review

To: Fred Cruz - Permit Services

From: Cheryl Lawler - Permit Services

Date: October 29, 2012

Facility Name: Stanislaus County

Location: 3705 Oakdale Road, Modesto

Application Nos: N-4251-2-0 & 3-0

Project No: N-1122763

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]	>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	**1.2E-06**	**1.2E-06**	2.4E-06	4.17E-06
T-BACT Required?	**Yes**	**Yes**		
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 **0.14** 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 October 26, 2012, to perform an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for two 757 bhp emergency diesel IC engines.

II. Analysis

Technical Services performed screening level health risk assessments 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	757	**PM_{10} g/hp-hr**	0.14
Closest Receptor (m)	38	**Quad**	2
Max Hours per Year	50	**Type of Closest Receptor**	Business

Technical Services also performed modeling for criteria pollutants NOx, SOx, PM_{10}, and $PM_{2.5}$; as well as the RMR. The emission rates used for criteria pollutant modeling for each engine were 313 lb/yr NOx, 0.4 lb/yr SOx, 12 lb/yr PM_{10}, and 12 lb/yr $PM_{2.5}$.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICEs	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.
[1]The 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.
[2]The 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 risks associated with the operation of the proposed diesel IC engines are greater than 1.0 in a million. In accordance with the District's Risk Management Policy, the project is approved **with** 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 the proposed units.

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.

Attachments:

RMR Request Form & Related Documents
DICE Screening Risk Tools
AAQA Results
Facility Summary