



FEB 04 2013

Raymod Sewell
Visalia Fire Department
707 W Acequia
Visalia, CA 93277

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1130120

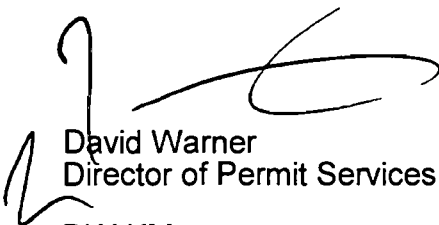
Dear Mr. Sewell:

Enclosed for your review and comment is the District's analysis of Visalia Fire Department's application for an Authority to Construct to install a 224 horsepower natural gas or propane-fired engine providing emergency power in the event of an electrical outage, at 707 W Acequia in Visalia, 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. Kyle Melching of Permit Services at (559) 230-5894.

Sincerely,



David Warner
Director of Permit Services

DW:KM

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



FEB 04 2013

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

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Project Number: S-1130120

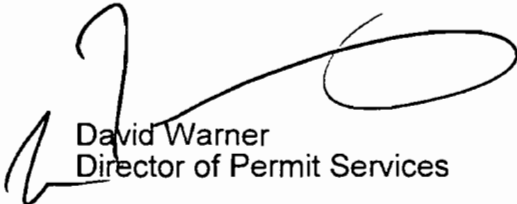
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**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AN AUTHORITY TO CONSTRUCT**

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 Visalia Fire Department to install a 224 horsepower natural gas or propane-fired engine providing emergency power in the event of an electrical outage, at 707 W Acequia in Visalia, CA

The analysis of the regulatory basis for this proposed action, Project #S-1130120, is available for public inspection at [http //www.valleyair.org/notices/public_notices_idx htm](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, 1990 E GETTYSBURG AVENUE, FRESNO, CA 93726.**

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

Facility Name	Visalia Fire Department	Date	1/24/13
Mailing Address	707 W Acequia Visalia, CA 93277	Specialist	Kyle Melching
		Lead Specialist	Esteban Gutierrez
Contact Person	Raymond Sewell		
Telephone	559-713-4266		
Application #	S-8174-2-0		
Project #	S-1130120		
Complete	1/24/13		

I. Proposal

Visalia Fire Department is proposing to install a 224 bhp (INTERMITTENT) natural gas or LPG/Propane-fired emergency standby internal combustion (IC) engine powering a electrical generator

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (12/18/08)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
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 – Phase 2 (1/18/07)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301 6 School Notice
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The project is located at 6921 W Ferguson in Visalia, 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 engine powers a electrical generator. Other than emergency operation, the engine may be operated up to 100 hours per year for maintenance and testing purposes.

V. Equipment Listing

S-8174-2-0: 224 BHP (INTERMITTENT) GENERAL MOTORS MODEL VORTEC 8 1L RICH-BURN NATURAL GAS OR LPG/PROPANE-FIRED EMERGENCY STANDBY IC ENGINE WITH NON-SELECTIVE CATALYTIC REDUCTION (NSCR) POWERING AN ELECTRICAL GENERATOR

VI. Emission Control Technology Evaluation

The engine is equipped with.

- Positive Crankcase Ventilation (PCV) or 90% efficient control device
- Non-Selective Catalytic Reduction
- Air/Fuel Ratio or an O₂ Controller
- Lean Burn Technology

The PCV system reduces crankcase VOC and PM₁₀ emissions by at least 90% over an uncontrolled crankcase vent.

Non-Selective Catalytic Reduction (NSCR) decreases NO_x, CO and VOC emissions by using a catalyst to promote the chemical reduction of NO_x into N₂ and O₂, and the chemical oxidation of VOC and CO into H₂O and CO₂.

The fuel/air ratio controller, (oxygen controller) is used in conjunction with the NSCR to maintain the amount of oxygen in the exhaust stream to optimize catalyst function.

VII. General Calculations

A. Assumptions

Emergency operating schedule:	24 hours/day Non-emergency operating schedule: 100 hours/year
EPA F-factor (adjusted to 60 °F):	8,578 dscf/MMBtu (40 CFR 60 Appendix B)
Fuel heating value:	1,000 Btu/dscf (District Policy APR-1720, dated 12/20/01)
BHP to Btu/hr conversion:	2,542.5 Btu/bhp-hr
Sulfur concentration:	2.85 lb-S/MMscf (District Policy APR-1720, dated 12/20/01)
Thermal efficiency of engine:	commonly \approx 35%
Catalyst control efficiencies:	90% for NO _x , 80% for CO, and 50% for VOC (<i>Update On Emissions - Form 960</i> , Second Edition, Waukesha Engine Division, Dresser Industries, October, 1991)

B. Emission Factors

Emission Factors for NG		
Pollutant	Emission Factor (g/bhp-hr)*	Source
NO _x	5.4	Manufacturer Specification
SO _x	0.0094	Mass Balance Equation Below**
PM ₁₀ ***	0.063	AP-42 (7/00) Table 3.2-3
CO	32	Manufacture Specification
VOC	0.6	Manufacture Specification

*g/bhp-hr equivalent of lb/MMBtu values are calculated as follows (ex. for SO_x)

$$2.27 \frac{\text{lb}}{\text{MMBtu}} \times \frac{1 \text{ MMBtu}}{1,000,000 \text{ Btu}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp} - \text{hr input}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{453.6 \text{ g}}{\text{lb}} = 7.48 \frac{\text{g} - \text{NO}_x}{\text{bhp} - \text{hr}}$$

**SO_x is calculated as follows

$$0.00285 \frac{\text{lb} - \text{SO}_x}{\text{MMBtu}} \times \frac{1 \text{ MMBtu}}{1,000,000 \text{ Btu}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp} - \text{hr}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0094 \frac{\text{g} - \text{SO}_x}{\text{bhp} - \text{hr}}$$

***PM₁₀ value includes both filterable (9.50×10^{-3} lb/MMBtu) and condensable (9.91×10^{-3} lb/MMBtu) emissions

Emission Factors for LPG/Propane			
Pollutant	Emission Factor (lb/1,000 gal)	Emission Factor (g/bhp-hr)*	Source
NO _x	139	4.87	CARB Emissions Inventory Database
SO _x	0.35	0.012	CARB Emissions Inventory Database
PM ₁₀	5	0.175	CARB Emissions Inventory Database
CO	129	4.52	CARB Emissions Inventory Database
VOC	83	2.91	CARB Emissions Inventory Database

Worst Case Emission Factors for NG or LPG/Propane		
Pollutant	Emission Factor (g/bhp-hr)*	Source
NO _x	5.4	Manufacturer Specification
SO _x	0.012	CARB Emissions Inventory Database
PM ₁₀	0.175	CARB Emissions Inventory Database
CO	32	Manufacturer Specification
VOC	2.91	CARB Emissions Inventory Database

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

Daily Post Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Conversion (g/lb)	PE2 Total (lb/day)
NO _x	5.4	224	24	453.6	64.0
SO _x	0.012	224	24	453.6	0.1
PM ₁₀	0.175	224	24	453.6	2.1
CO	32	224	24	453.6	379.3
VOC	2.91	224	24	453.6	34.5

Annual Post Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Annual Hours of Operation (hrs/yr)	Conversion (g/lb)	PE2 Total (lb/yr)
NO _x	5.4	224	100	453.6	267
SO _x	0.012	224	100	453.6	1
PM ₁₀	0.175	224	100	453.6	9
CO	32	224	100	453.6	1580
VOC	2.91	224	100	453.6	144

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.

Since this is an existing facility, SSPE1 is equal to the PE_{1 Total Pre-Project} from all units for all criteria pollutants.

There is one existing permit unit and no banked ERCs at this facility. In this situation the worst-case scenario for the facility will be used for the SSPE1. (see Appendix C), the following annual emissions were calculated. Thus:

SSPE1					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
-1-0, NG/LPG/Propane Emergency ICE	164	1	2	1661	32
SSPE1 Total	164	1	2	1661	32

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.

Since this is a modification to an existing facility, SSPE2 is equal to the PE2_{Total Post Project} from all units for all criteria pollutants

For this project the change in emissions for the facility is due to the installation of the new emergency standby IC engine, permit unit -2-0 Thus

SSPE2					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
-1-0, NG/LPG/Propane Emergency ICE	164	1	2	1661	32
-2-0, NG/LPG/Propane Emergency ICE	267	1	9	1580	144
SSPE2 Total	431	2	11	3241	176

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	164	431	20,000	No	No
SO _x	1	2	140,000	No	No
PM ₁₀	2	11	140,000	No	No
CO	1661	3241	200,000	No	No
VOC	32	176	20,000	No	No

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 this is a new emissions unit, 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 a 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)

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 D

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 lb/day

Since this engine is a new emissions unit, the daily emissions are compared to the BACT thresholds in the following table:

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -2-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	64	> 2.0	n/a	Yes
SO _x	0.1	> 2.0	n/a	No
PM ₁₀	2.1	> 2.0	n/a	Yes
CO	379	> 2.0 and SSPE2 ≥ 200,000 lb/yr	3241	No
VOC	34.5	> 2.0	n/a	Yes

Thus BACT will be triggered for NO_x, PM₁₀, and VOC emissions from the engine for this project.

b. Relocation of emissions units – PE > 2 lb/day

As discussed previously in Section I, this engine is not being relocated from one stationary source to another as a result of this project. Therefore, BACT is not triggered for the relocation of emissions units with a PE > 2 lb/day.

c. Modification of emissions units – Adjusted Increase in Permitted Emissions (AIPE) > 2 lb/day

As discussed previously in Section I, this engine is not being modified as a result of this project. Therefore, BACT is not triggered for the modification of emissions units with an AIPE > 2 lb/day

d. Major Modification

As discussed previously in Section VII C.7, this project does not constitute a Major Modification. Therefore BACT is not triggered for a Major Modification.

2. BACT Guideline

BACT Guideline 3.1.6, 2 quarter 1995, which appears in Appendix A of this report, covers rich burn gas-fired emergency IC engines of greater than or equal to 132 brake horsepower.

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 A of this report, BACT is satisfied with

- NO_x: Natural gas or LPG/Propane as fuel
- VOC: Positive crankcase ventilation and natural gas or LPG/Propane as fuel
- PM₁₀: Positive crankcase ventilation and natural gas or LPG/Propane as fuel

Therefore, the following conditions will be listed on the ATC to ensure compliance

- {edited 3501} Emissions from this IC engine shall not exceed any of the following limits: 5.4 g-NO_x/bhp-hr, 0.175 g-PM₁₀/bhp-hr, 32 g-CO/bhp-hr, or 2.91 g-VOC/bhp-hr [District Rule 2201]

- {1897} This engine shall be equipped with either a positive crankcase ventilation (PCV) system which recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency [District Rule 2201]

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, which is a new facility that is also a Major Source,
- b Major Modifications,
- c Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- d Any project which results in the offset thresholds being surpassed, and/or
- e Any project with an SSPE of greater than 20,000 lb/year for any pollutant

a. New Major Source

New Major Sources are new facilities, which are also Major Sources. As shown previously in Section VII C.5, the SSPE2 is not greater than the Major Source threshold for any criteria pollutant. Therefore, public noticing is not required for this project for new Major Source purposes.

b. Major Modification

As demonstrated previously in Section VII C.7, this project does not constitute a Major Modification, therefore, public noticing for Major Modification purposes is not required.

c. PE > 100 lb/day

The Daily PE for this new emissions unit is compared to the daily PE Public Notice Thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	Daily PE for unit -2-0 (lb/day)	Public Notice Threshold (lb/day)	Public Notice Triggered?
NO _x	64.0	100	No
SO _x	0.1	100	No
PM ₁₀	2.1	100	No
CO	379.3	100	Yes
VOC	34.5	100	No

As detailed in the preceding table, the CO 100 lb/day threshold was surpassed with this project. Therefore, public noticing is required for daily emissions greater than 100 lb/day for a new emissions unit.

d. Offset Threshold

The following table compares the SSPE1 with the SSPE2 to the offset thresholds in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Offset Threshold (lb/yr)	Public Notice Required?
NO _x	164	431	20,000	No
SO _x	1	2	54,750	No
PM ₁₀	2	11	29,200	No
CO	1661	3241	200,000	No
VOC	32	176	20,000	No

As detailed in the preceding table, there were no offset thresholds surpassed with this project. Therefore, public noticing is not required for this project for surpassing the SSPE2 offset thresholds.

e. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. $SSIPE = SSPE2 - SSPE1$. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Threshold					
Pollutant	SSPE2 (lb/yr)	SSPE1 (lb/yr)	SSIPE (lb/yr)	SSIPE Threshold (lb/yr)	Public Notice Required?
NO _x	431	164	267	20,000	No
SO _x	2	1	1	20,000	No
PM ₁₀	11	2	9	20,000	No
CO	3241	1661	1580	20,000	No
VOC	176	32	144	20,000	No

As detailed in the preceding table, there were no SSIPE thresholds surpassed with this project. Therefore, public noticing is not required for exceeding the SSIPE thresholds.

2. Public Notice Action

As discussed above, public noticing is required for this project for surpassing the PE > 100 lb/day for a new emissions unit threshold for CO emissions. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emissions Limits

Daily Emissions Limitations (DELs) and other enforceable conditions are required by 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. DELs are also required to enforce the applicability of BACT. For this emergency standby IC engine, the DELs are stated in the form of emission factors, the maximum engine

horsepower rating, and the maximum operational time of 24 hours per day. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {edited 3501} Emissions from this IC engine shall not exceed any of the following limits: 5.4 g-NO_x/bhp-hr, 0.175 g-PM₁₀/bhp-hr, 32 g-CO/bhp-hr, or 2.91 g-VOC/bhp-hr [District Rule 2201]

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 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*, this IC 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

No reporting is required to ensure compliance with Rule 2201.

F. Ambient Air Quality Analysis

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 a State or National ambient air quality standard. An AAQA is required to be performed for all New Source Review (NSR) public notice projects. As previously discussed in Section VIII C, this project requires that a public notice be performed before issuance of the ATC for this project. Therefore, the District is required to perform an AAQA for this project.

The Technical Services Division of the SJVAPCD conducted the required AAQA for this project. The results of the AAQA are presented in the following two tables. Refer to Appendix B of this document for the AAQA summary sheet and PM₁₀ 24-hour and annual emissions contribution levels for this project.

AAQA Results					
Pollutant	Do the Calculated Contributions Violate the Ambient Air Quality Standard?				
	1 hr Average	3 hr Average	8 hr Average	24 hr Average	Annual Average
CO	N/A	N/A	N/A	N/A	N/A
NO _x	N/A	N/A	N/A	N/A	Pass
SO _x	N/A	N/A	N/A	N/A	Pass
PM ₁₀	N/A	N/A	N/A	N/A	Pass

The proposed location of installation of the natural gas or LPG/Propane-fired IC engine is in an attainment area for NO_x, CO, and SO_x. As shown by the preceding table of AAQA results the proposed installation of the natural gas-fired IC engine will not cause a violation of a State or National ambient air quality standard for NO_x, CO, or SO_x.

The proposed location for installation of the natural gas or LPG/Propane-fired IC engine is in a non-attainment area for PM₁₀. The levels of significance, from 40 CFR Part 51.165 (b)(2), and the increase in the ambient PM₁₀ concentration due to the installation of the proposed equipment are presented in the following table

EPA PM ₁₀ Significance Level and the Calculated Contribution for this Project					
	Calculated Contributions (µg/m ³)				
	1 hr Average	3 hr Average	8 hr Average	24 hr Average	Annual Average
EPA PM ₁₀ Significance Level	N/A	N/A	N/A	50	10
Project Total PM ₁₀ Concentration	N/A	N/A	N/A	N/A	0.02
Does this project violate the standard?	N/A	N/A	N/A	N/A	No

As shown in the preceding table, the calculated contribution of PM₁₀ from the proposed installation of the LPG/propane or natural gas-fired IC engine will not exceed any ambient air quality standard or exceed an EPA significance level.

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)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. However, no subparts of 40 CFR Part 60 apply to reciprocating natural gas or LPG/Propane-fired IC engines.

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 pursuant to the policy, a risk management review has been performed for this project to analyze the impact of toxic emissions. For projects where the increase in cancer risk is greater than one per million, Toxic Best Available Control Technology (T-BACT) is required.

The HRA results for this project are shown below (see the HRA Summary in Appendix B):

HRA Results				
Unit	Acute Hazard Index	Chronic Hazard Index	Cancer Risk	T-BACT Required?
S-8174-2-0	N/A	N/A	0.33 in a million	No

As demonstrated previously, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

Rule 4201 Particulate Matter Concentration

Particulate matter emissions from the engine will be less than or equal to the rule limit of 0.1 grain per cubic foot of gas at dry standard conditions as shown by the following:

$$0.1 \frac{g - PM_{10}}{bhp - hr} \times \frac{1g - PM}{0.96g - PM_{10}} \times \frac{1bhp - hr}{2,542.5 Btu} \times \frac{10^6 Btu}{8,578 dscf} \times \frac{0.35 Btu_{out}}{1 Btu_{in}} \times \frac{15.43 grain}{g} = 0.0244 \frac{grain - PM}{dscf}$$

Since 0.0244 grain-PM/dscf is \leq to 0.1 grain per dscf, compliance with Rule 4201 is expected.

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

Rule 4701 Internal Combustion Engines – Phase 1

Pursuant to Section 7.6.3.3 of District Rule 4702, as of June 1, 2006 District Rule 4701 is no longer applicable to natural gas-fired emergency standby or emergency IC engines. Therefore, this LPG/Propane or natural gas-fired emergency IC engine will comply with the requirements of District Rule 4702 and no further discussion is required.

Rule 4702 Internal Combustion Engines – Phase 2

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.

This rule applies to any internal combustion engine with a rated brake horsepower greater than 50 horsepower.

Pursuant to Section 4.2, except for the requirements of Sections 5.7 and 6.2.3, the requirements of this rule shall not apply to an internal combustion engine that meets the following condition

- 1) An emergency standby engine as defined in Section 3.0 of this rule, and provided that it is operated with a nonresettable elapsed operating time meter. In lieu of a nonresettable time meter, the owner of an emergency engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

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

Therefore, the emergency standby IC engine involved with this project will only have to meet the requirements of Sections 5.7 and 6.2.3 of this Rule.

Section 5.7 of this Rule requires that the owner of an emergency standby engine shall comply with the requirements specified in Section 5.7.2 through Section 5.7.5 below

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

Therefore, the following conditions will be listed on the ATC to ensure compliance

- {3405} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier [District Rule 4702]
- {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters, replace engine coolant, and/or other operational characteristics as recommended by the manufacturer or supplier) [District Rule 4702]
- {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative [District Rule 4702]
- {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
- {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]
- {3806} 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 100 hours per calendar year [District Rule 4702]

Section 6 2 3 requires that an owner claiming an exemption under Section 4.2 or Section 4 3 shall maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and submitted to the APCO upon request and at the end of each calendar year in a manner and form approved by the APCO. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance

- {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]

- {3497} 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]

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

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

$$2.85 \frac{\text{lb} - S}{\text{MMscf} - \text{gas}} \times \frac{1 \text{ scf} - \text{gas}}{1,000 \text{ Btu}} \times \frac{1 \text{ MMBtu}}{8,578 \text{ scf}} \times \frac{1 \text{ lb} - \text{mol}}{64 \text{ lb} - S} \times \frac{10.73 \text{ psi} - \text{ft}^3}{\text{lb} - \text{mol} - \text{°R}} \times \frac{520 \text{ °R}}{14.7 \text{ psi}} \times 1,000,000 = 1.97 \text{ ppmv}$$

Since 1.97 ppmv is ≤ 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

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

This regulation applies to any new or in-use stationary diesel-fueled compression ignition (CI) emergency standby engine. The engine involved with this project is fired on natural gas or LPG/Propane and is not compression ignited. Therefore, this regulation is not applicable to the engine involved with this project.

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 ATC(s) is a ministerial approval for the District and is not subject to CEQA provisions.

IX. Recommendation

Pending a successful NSR Public Noticing period, issue Authority to Construct S-8174-2-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix E.

X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
S-8174-2-0	3020-10-C	224 bhp IC engine	\$240.00

List of Appendixes

- A. BACT Guideline and BACT Analysis
- B. HRA Summary
- C. SSPE1 Calculations
- D. QNEC Calculations
- E. Draft ATC

Appendix A

BACT Guideline and BACT Analysis

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

Oxides of nitrogen (NO_x) are generated from the high temperature combustion of the natural gas fuel. A majority of the NO_x emissions are formed from the high temperature reaction of nitrogen and oxygen in the inlet air. The rest of the NO_x emissions are formed from the reaction of fuel-bound nitrogen with oxygen in the inlet air.

1. BACT Analysis for NO_x Emissions:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.6, 2 quarter 1995, identifies achieved in practice BACT for NO_x emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

- 1) Natural gas, LPG, or propane as fuel

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.6, 2 quarter 1995, identifies technologically feasible BACT for NO_x emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

- 1) NO_x catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

- 1) NO_x catalyst (three-way catalyst) and natural gas, LPG, or propane as fuel
- 2) Natural gas, LPG, or propane as fuel

d. Step 4 - Cost Effectiveness Analysis

This facility is classified as a small emitter, per the District's BACT Policy (dated 11/9/99) Section III.D, as facility-wide emissions are less than [two tons per year of each affected pollutant or 40 lbs/day for NO_x, 220 lbs/day for CO, and 30 lbs/day each for VOC, PM₁₀, and SO_x]. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.E.1, technologically feasible BACT and a cost effective analysis is not required.

The only remaining control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.D.2, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for NO_x emissions from this rich-burn emergency standby natural gas IC engine ≥ 132 bhp is natural gas, LPG, or propane as fuel. The applicant has proposed to install a 224 bhp rich-burn emergency standby natural gas IC engine using natural gas, LPG, or propane as fuel, therefore BACT for NO_x emissions is satisfied.

3. BACT Analysis for PM₁₀ Emissions:

Particulate matter (PM₁₀) emissions result from the incomplete combustion of various elements in the fuel. A small portion of the particulates is emitted through the crankcase vent.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.6, 2 quarter 1995, identifies technologically feasible BACT for PM₁₀ emissions from rich-burn emergency natural gas IC engines ≥ 132 bhp as follows:

- 1) Positive crankcase ventilation and natural gas, LPG, or propane as fuel.

No technologically feasible alternatives or control alternatives identified as alternate basic equipment for this class and category of source are listed.

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

- 1) Positive crankcase ventilation and natural gas, LPG, or propane as fuel.

d. Step 4 - Cost Effectiveness Analysis

The only control technology in the ranking list from Step 3 has been achieved in practice. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.D 2, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for PM₁₀ emissions from this rich-burn emergency standby natural gas IC engine ≥ 132 bhp is having positive crankcase ventilation and natural gas, LPG, or propane as fuel. The applicant has proposed to install a 244 bhp rich-burn emergency standby

natural gas IC engine with positive crankcase ventilation and natural gas, LPG, or propane as fuel; therefore BACT for PM₁₀ emissions is satisfied.

BACT Analysis for VOC Emissions:

5. BACT Analysis for VOC Emissions:

Volatile organic compounds (VOC) emissions are generated from the incomplete combustion of the fuel. Some VOCs are emitted from the crankcase of the engine as a result of piston ring blow-by.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.6, 2 quarter 1995, identifies achieved in practice BACT for VOC emissions from rich-burn emergency natural gas IC engines \geq 132 bhp as follows:

- 1) Positive crankcase ventilation and natural gas, LPG, or propane as fuel

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.6, 2 quarter 1995, identifies technologically feasible BACT for VOC emissions from rich-burn emergency natural gas IC engines \geq 132 bhp as follows:

- 1) VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel

No control alternatives identified as alternate basic equipment for this class and category of source are listed.

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

- 1) VOC catalyst (three-way catalyst), positive crankcase ventilation, and natural gas, LPG, or propane as fuel
- 2) Positive crankcase ventilation and natural gas, LPG, or propane as fuel

d. Step 4 - Cost effectiveness analysis

A cost effective analysis must be performed for all control options in the list from Step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

This facility is classified as a small emitter, per the District's BACT Policy (dated 11/9/99) Section III.D, as facility-wide emissions are less than [two tons per year of each affected pollutant or 40 lbs/day for NO_x, 220 lbs/day for CO, and 30 lbs/day each for VOC, PM₁₀, and SO_x]. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.E.1, technologically feasible BACT and a cost effective analysis is not required.

The only remaining control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for VOC emissions from this rich-burn emergency standby natural gas IC engine \geq 132 bhp is positive crankcase ventilation, and natural gas, LPG, or propane as fuel. The applicant has proposed to install a 224 bhp rich-burn emergency standby natural gas IC engine with positive crankcase ventilation, and natural gas, LPG, or propane as fuel; therefore BACT for VOC emissions is satisfied.

Appendix B HRA Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: File - Permit Services
 From: Kyle Melching - Permit Services
 Date: January 28, 2013
 Facility Name: Visalia Fire Deptment
 Location: 6921 W. Ferguson, Visalia
 Application #(s): S-8174-2-0
 Project #: S-1130120

A. RMR SUMMARY

Categories	Emergency LPG/Propane ICE (Unit 2-0)	Project Totals	Facility Totals
Prioritization Score	3.5	3.5	>1
Acute Hazard Index	0.1	0.1	0.1
Chronic Hazard Index	0.00	0.00	0.00
Maximum Individual Cancer Risk	3.27E-07	3.27E-07	3.27E-07
T-BACT Required?	No		
Special Permit Conditions?	Yes		

Proposed Permit Conditions

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

Unit 2-0

1. 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 **100** hours per calendar year. [District Rule 4702 and 17 CCR 93115]

B. RMR REPORT

I. Project Description

Technical Services received a request on January 28, 2013, to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for one emergency 224 BHP LPG/Propane or NG-fired IC engine. For this project the LPG/Propan fuel usage rate was used to reflect the worst case scenario risk.

II. Analysis

Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District emission factors for Natural Gas Fired internal combustion (4 Stroke Rich Burn) Engine and the Districts approved conversion factors from Natural Gas to LPG. Risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the proposed project was greater than 1.0 (see RMR Summary Table). Therefore, a refined Health Risk Assessment was required and performed for the project. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Visalia to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the reviews:

Analysis Parameters Unit 2-0			
Source Type	Point	Gas Temperature (K)	922
Stack height (m)	1.22	Gas Velocity (M/Sec)	53.6
Stack Diameter (m)	.1016	Type of Closest Receptor	Business/ Resident
Max Hours per Year	100 each	Closest Receptor (m)	15
LPG Usage (lbs/1000 gal-hr)	0.017	LPG Usage (lbs/1000 gal-yr)	1.73

Technical Services also performed modeling for criteria pollutants CO, NO_x, SO_x, PM₁₀, and PM_{2.5}, as well as the RMR. Emission rates used for criteria pollutant modeling were: 267 lb/yr NO_x, 1 lb/yr SO_x, 9 lb/yr PM₁₀, and 9 lb/yr PM_{2.5}.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Values are in µg/m³

LPG or NG-fired ICE	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	X	X	X	X	X
NO _x	X	X	X	X	Pass
SO _x	X	X	X	X	Pass
PM ₁₀	X	X	X	X	Pass ²
PM _{2.5}	X	X	X	X	Pass ²

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. Conclusion

The criteria modeling runs indicate the emissions from the proposed equipment will not cause or significantly contribute to a violation of a State or National AAQS

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **3.27E-07**; which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

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 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.

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score
- D. Facility Summary
- E. AAQA

AAQA for Visalia Fire Department (S-8174-2-0)
All Values are in Micrograms per Cubic Meter

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
STCK1	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02
Background	99.5	24.9	4,427.0	3,029.0	159.8	133.2	71.9	26.6	104.00	53.00
Facility Totals	99.5	25.4	4,427.0	3,029.0	159.8	133.2	71.9	26.6	104.0	53.0
AAQS	188.7	56.0	23,000.0	10,000.0	195.0	1,300.0	105.0	80.0	50.0	30.0
	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Fail PASS	Fail PASS
EPA's Significance Level (ug/m³)										
	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
	0.0	1.0	2000.0	500.0	0.0	25.0	5.0	1.0	5.0	1.0

PM2.5
.3

PASS

*Since 5-years of meteorological data were used, an adjustment factor of 1.5 for Visalia was applied to the annual average concentrations for the devices modeled.

AAQA Emission (g/sec)

<i>Device</i>	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
STCK1	0.00E+00	3.84E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-05	0.00E+00	1.29E-04

*Since 5-years of meteorological data were used, an adjustment factor of 1.5 for Visalia was applied to the annual average concentrations for the devices modeled.

Appendix C SSPE1 Calculations

SSPE1					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
-1-0, NG/LPG/Propane Emergency ICE	164	1	2	1661	32
SSPE1 Total	164	1	2	1661	32

Appendix D 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 - BE, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
- PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
- BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, PE2_{quarterly} and BE_{quarterly} can be calculated as follows:

Quarterly Post Project Emissions		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO _x	267	66.8
SO _x	1	0.3
PM ₁₀	9	2.3
CO	1580	395.0
VOC	144	36.0

$$\begin{aligned} BE_{\text{quarterly}} &= BE_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 0 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 0 \text{ lb/qtr (for all criteria pollutants)} \end{aligned}$$

Appendix E Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-8174-2-0

LEGAL OWNER OR OPERATOR: VISALIA FIRE DEPARTMENT
MAILING ADDRESS: 707 WEST ACEQUIA
VISALIA, CA 93291

LOCATION: 6921 WEST FERGUSON
VISALIA, CA

EQUIPMENT DESCRIPTION:

224 BHP (INTERMITTENT) GENERAL MOTORS MODEL VORTEC 8 1L RICH-BURN NATURAL GAS OR LPG/PROPANE-FIRED EMERGENCY STANDBY IC ENGINE WITH NON-SELECTIVE CATALYTIC REDUCTION (NSCR) POWERING AN ELECTRICAL GENERATOR

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 {1897} This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]
- 5 {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
- 6 Emissions from this IC engine shall not exceed any of the following limits: 5.4 g-NOx/bhp-hr, 0.175 g-PM10/bhp-hr, 32 g-CO/bhp-hr, or 2.91 g-VOC/bhp-hr [District Rule 2201]
- 7 {3405} 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]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 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
S-8174-2-0 Feb 1 2013 12:58PM - MELCHINK Joint Inspection NOT Required

8. {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]
9. {3806} 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 100 hours per calendar year. [District Rule 4702]
10. {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]
11. {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]
12. {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]
13. {3497} 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]

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