



SEP 09 2013

Zachary Feingold
MCI dba Verizon Business
P.O. Box 725
Chino, CA 91708

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: C-8577
Project Number: C-1132037

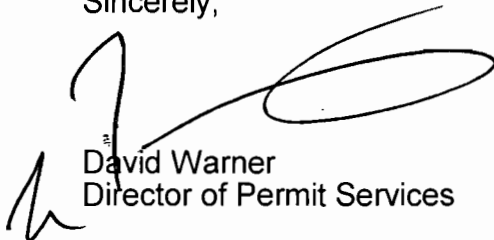
Dear Mr. Feingold:

Enclosed for your review and comment is the District's analysis of MCI dba Verizon Business's application for an Authority to Construct for installing a 51.5 bhp LPG/propane-fired emergency standby IC engine powering an electrical generator, at Marker 93.37 along Department of Water Resources Aqueduct near Ora Loma, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Ms. Sandra Lowe-Leseth of Permit Services at (559) 230- 5834.

Sincerely,



David Warner
Director of Permit Services

DW:sll

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email

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

Fresno Bee

Newspaper notice for publication in Fresno Bee and for posting on valleyair.org

**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 MCI dba Verizon Business for installing a 51.5 bhp LPG/propane-fired emergency standby IC engine powering an electrical generator, at Marker 93.37 along Department of Water Resources Aqueduct near Ora Loma, CA.

The analysis of the regulatory basis for this proposed action, Project #C-1132037, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and at any District office. For additional information, please contact the District at (559) 230-6000. Written comments on this project must be submitted by October 14, 2013 to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 1990 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.**

**San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
LPG/Propane-Fired Emergency Standby IC Engine**

Facility Name:	MCI dba Verizon Business	Date:	August 28, 2013
Mailing Address:	P.O. Box 725 Chino, CA 91708	Engineer:	Sandra Lowe-Leseth
Contact Person:	Zach Feingold	Lead Engineer:	Dustin Brown
Telephone:	909-620-5498		
Application #:	C-8577-1-0		
Project #:	C-1132037		
Complete:	August 16, 2013		

I. Proposal

MCI dba Verizon Business (Verizon) is proposing to install a 51.5 bhp (intermittent) LPG/propane-fired emergency standby internal combustion (IC) engine powering an electrical generator.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410 Prevention of Significant Deterioration (6/16/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4002 National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702 Stationary Internal Combustion Engines – Phase 2 (8/18/11)
Rule 4801 Sulfur Compounds (12/17/92)
California Health and Safety Code (CH&SC) Section (§)41700 Health Risk Assessment
CH&SC § 42301.6 School Notice
Title 17 California Code of Regulations (CCR) § 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, § 15000-15387: CEQA
Guidelines

III. Project Location

The equipment will be located at Marker 93,31 along Department of Water Resouces Aqueduct, within the SW/4 of Section 27, Township 12S, Range 11E. 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 an electrical generator. The generator will provide power to telecommunications equipment during power outages. Other than emergency operation, the engine may be operated up to 100 hours per year for maintenance and testing purposes.

V. Equipment Listing

C-8577-1-0: 51.5 BHP (INTERMITTENT) POWER SOLUTIONS MODEL 3.0L RICH-BURN LPG/PROPANE-FIRED EMERGENCY STANDBY IC ENGINE 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.

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:	94,000 Btu/gal (AP-42, Appendix A, pg. 5, dated 9/85)
BHP to Btu/hr conversion:	2,542.5 Btu/bhp-hr
g/kW-hr to g/hp-hr conversion:	1 g/kW-hr/1.3405 g/hp-hr
Thermal efficiency of engine:	commonly ≈ 35%

The applicant has only supplied an emissions factor for NO_x and VOC emissions combined. Therefore the District will use this combined emissions factor as the NO_x emissions factor and will use the CARB Emissions Inventory Database value as the VOC emissions factor for this engine (District assumption for worst-case emissions).

B. Emission Factors

Emission Factors				
Pollutant	Emission Factor	EF units	Emission Factor (g/bhp-hr)*	Source
NO _x	13.4	g/kW-hr	10.0	EPA COC CPSIB2.97ED-002
SO _x	0.35	lb/1,000 gal	0.012	CARB Emissions Inventory Database
PM ₁₀	5	lb/1,000 gal	0.175	CARB Emissions Inventory Database
CO	519	g/kW-hr	387	EPA COC CPSIB2.97ED-002
VOC	83	lb/1,000 gal	2.91	CARB Emissions Inventory Database

*g/bhp-hr equivalent of lb/1,000 gal values are calculated as follows:

$$0.35 \frac{lb - SO_x}{1,000 gal} \times \frac{gal}{94,000 Btu} \times \frac{2,542.5 Btu}{bhp - hr input} \times \frac{1 bhp input}{0.35 bhp out} \times \frac{453.6 g}{lb} = 0.012 \frac{g - SO_x}{bhp - hr}$$

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	10.0	51.5	24	453.6	27.2
SO _x	0.012	51.5	24	453.6	0.0
PM ₁₀	0.175	51.5	24	453.6	0.5
CO	387	51.5	24	453.6	1,054.5
VOC	2.91	51.5	24	453.6	7.9

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	10.0	51.5	100	453.6	114
SO _x	0.012	51.5	100	453.6	0
PM ₁₀	0.175	51.5	100	453.6	2
CO	387	51.5	100	453.6	4,394
VOC	2.91	51.5	100	453.6	33

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 a new facility, there are no existing permit units or any ERCs banked at this facility. Thus:

SSPE1 = 0 lb/yr for all criteria pollutants

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 new facility, SSPE2 is equal to the change in emissions for the facility due to the installation of the new emergency standby IC engine, permit unit -1-0, as previously determined in Section VII.C.2. Thus:

SSPE2					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
-1-0, emergency IC engine	114	0	2	4,394	33
SSPE2 Total	114	0	2	4,394	33

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

Rule 2201 Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE1	0	0	0	0	0
SSPE2	114	0	2	4,394	33
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	No	No

As seen in the table above, the facility is not an existing Major Source for any pollutant; however, is becoming a Major Source for NO_x emissions as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination (tons/year)							
	NO2	VOC	SO2	CO	PM	PM10	CO2e
Estimated Facility PE before Project Increase	0	0	0	0	0	0	0
PSD Major Source Thresholds	250	250	250	250	250	250	100,000
PSD Major Source ? (Y/N)	N	N	N	N	N	N	N

As shown above, the facility is not an existing major source for PSD for at least one pollutant. Therefore the facility is not an existing major source for PSD.

6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to 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. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀
- Greenhouse gases (GHG): CO₂, N₂O, CH₄, HFCs, PFCs, and SF₆

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

In the case the facility is NOT an existing PSD Major Source but is an existing source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

In the case the facility is new source, the second step of the PSD evaluation is to determine if this new facility will become a new PSD major Source as a result of the project and if so, to determine which pollutant will result in a PSD significant increase.

I. Potential to Emit for New or Modified Emission Units vs PSD Major Source Thresholds

As a screening tool, the project potential to emit from all new and modified units is compared to the PSD major source threshold, and if total project

potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination: Potential to Emit (tons/year)							
	NO2	VOC	SO2	CO	PM	PM10	CO2e *
Total PE from New and Modified Units	<0.1	<0.1	0	2.2	<0.1	<0.1	27.0
PSD Major Source threshold	250	250	250	250	250	250	100,000
New PSD Major Source?	No	No	No	No	No	No	No

* See Appendix E for calculations

As shown in the table above, the project potential to emit, by itself, does not exceed any of the PSD major source thresholds. Therefore Rule 2410 is not applicable and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix 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 -1-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	27.2	> 2.0	n/a	Yes
SO _x	0.0	> 2.0	n/a	No
PM ₁₀	0.5	> 2.0	n/a	No
CO	1,054.5	> 2.0 and SSPE2 ≥ 200,000 lb/yr	4,394	No
VOC	7.9	> 2.0	n/a	Yes

Thus BACT will be triggered for NO_x and VOC emissions from the engine for this project. Although daily CO emissions are greater than 2.0 lb/day, the facility's total CO emissions are less than 200,000 lb/year, therefore, BACT is not triggered for CO emissions.

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 3.1.5, third quarter 2013, which appears in Appendix A of this report, covers rich burn gas-fired emergency IC engines of less than 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: No control technology (No technologically feasible option was determined to be cost effective)
- VOC: Positive crankcase ventilation

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: 10.0 g-NO_x/bhp-hr, 0.175 g-PM₁₀/bhp-hr, 387 g-CO/bhp-hr, or 2.91 g-VOC/bhp-hr. [District Rule 2201]
- {3505} This IC engine shall be fired on LPG/propane gas only. [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 standby 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 -1-0 (lb/day)	Public Notice Threshold (lb/day)	Public Notice Triggered?
NO _x	27.2	100	No
SO _x	0.0	100	No
PM ₁₀	0.5	100	No
CO	1,054.5	100	Yes
VOC	7.9	100	No

As detailed in the preceding table, the 100 lb/day threshold was surpassed by CO emissions 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	0	114	20,000	No
SO _x	0	0	54,750	No
PM ₁₀	0	2	29,200	No
CO	0	4,394	200,000	No
VOC	0	33	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	114	0	114	20,000	No
SO _x	0	0	0	20,000	No
PM ₁₀	2	0	2	20,000	No
CO	4,394	0	4,394	20,000	No
VOC	33	0	33	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 CO emissions in excess of 100 lb/day. 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 or less if required by the HRA] 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: 10.0 g-NO_x/bhp-hr, 0.175 g-PM₁₀/bhp-hr, 387 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 (AAQA)

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

Criteria Pollutant Modeling Results*

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

*Results were taken from the PSD spreadsheet in Appendix B.

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).

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

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

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 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.

District policy APR 1905 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. A Health Risk Assessment (HRA) is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (see Appendix B), the total facility prioritization score including this project was less than or equal to one. Therefore, no further analysis is required to determine the impact from this project.

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:

$$0.175 \frac{g - PM_{10}}{bhp - hr} \times \frac{1 bhp - hr}{2,542.5 Btu} \times \frac{10^6 Btu}{8,578 dscf} \times \frac{0.35 Btu_{out}}{1 Btu_{in}} \times \frac{15.43 grain}{g} = 0.04 \frac{grain - PM}{dscf}$$

Since 0.04 grain-PM/dscf is less than 0.1 grain/dscf, compliance with Rule 4201 is expected.

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

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

Rule 4701 Internal Combustion Engines – Phase 1

Pursuant to Section 7.6.3.3 of District Rule 4702, as of June 1, 2006 District Rule 4701 is no longer applicable to LPG/propane-fired emergency standby or emergency IC engines. Therefore, this LPG/propane-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

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

$$0.35 \frac{\text{lb} - S}{1,000 \text{ gal}} \times \frac{1 \text{ gal}}{0.094 \text{ MMBtu}} \times \frac{1 \text{ MMBtu}}{8,578 \text{ scf}} \times \frac{\text{lb} - \text{mol}}{64 \text{ lb} - S} \times \frac{10.73 \text{ psi} - \text{ft}^3}{\text{lb} - \text{mol} - \text{°R}} \times \frac{520 \text{ °R}}{14.7 \text{ psi}} \times 1,000,000 = 2.57 \text{ ppmv}$$

Since 2.57 ppmv is less than 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:

- {3505} This IC engine shall be fired on LPG/propane gas only. [District Rules 2201 and 4801]

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 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 will occur at an existing facility; involves negligible expansion of the existing use; and would not have a significant effect on the environment. The District further 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, issuance of such ATC(s) is ministerial approval for the District and is not subject to CEQA provisions.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct C-8577-1-0 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
C-8577-1-0	3020-10-A	51.5 bhp IC engine	\$80.00

Appendixes

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

Appendix A

BACT Guideline and BACT Analysis

Best Available Control Technology (BACT) Guideline 3.1.5
Last Update: 11/27/1996

Emergency Gas Fired I.C. Engine - < 132 hp, Rich Burn

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO		CO Catalyst (3 way)	
NOx		NOx Catalyst (3 way)	
PM10	Positive crankcase ventilation (PCV)	Positive crankcase ventilation (PCV)	
VOC	Positive crankcase ventilation (PCV)	VOC catalyst (3 way), positive crankcase ventilation (PCV)	

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 Emergency IC Engines

Oxides of nitrogen (NO_x) are generated from the high temperature combustion of the LPG/propane 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 3.1.5, third quarter 2013, identifies achieved in practice BACT for NO_x emissions from rich-burn emergency LPG/propane gas IC engines < 132 bhp as follows:

- 1) NO_x catalyst (three-way catalyst) (technologically feasible)
- 2) No control (achieved in practice)

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) NO_x catalyst (three-way catalyst)
- 2) No control

d. Step 4 - Cost Effectiveness Analysis

Assumptions:

Installed cost of catalyst (material and labor): \$12,958 (per applicant)
Annual operating and maintenance cost: \$3,610 per year (per applicant)
Catalyst control efficiencies: 90% for NO_x, 80% for CO, and 50% for VOC (*Update On Emissions - Form 960*, Second Edition, Waukesha Engine Division, Dresser Industries, October, 1991)

Pursuant to the District BACT Policy section X. (Revised 4/18/95), the annual cost of installing and maintaining the 3-way catalyst will be calculated as follows. The installation cost will be spread over the expected life of the catalyst which is estimated at 10 years and using the capital recovery equation (Equation 1). A 10% interest rate is assumed in the equation and the assumption will be made that the equipment has no salvage value at the end of the ten-year cycle.

$$A = [TCI * i(i+1)^n]/[(i+1)^n - 1] \quad \text{Equation 1}$$

Where:

A = Annualized Capital Cost (\$/yr)
TCI = Total Capital Investment (\$)
i = Interest Rate (10%, per District policy)
N = Equipment Life (10 years)

$$A = [\$12,958 * 0.1 * (1.1)^{10}]/[(1.1)^{10} - 1] \\ = \mathbf{\$2,108/\text{year}}$$

In addition to the initial cost to buy and install the catalyst, there are operating and maintenance costs. Per the applicant, it is expected that it will cost \$3,600 each year to operate and maintain the catalyst.

Adding the annualized capital cost to the annual operating and maintenance cost is the total annual cost to acquire, install, and operate a 3-way catalyst.

$$\text{Total Annual Cost} = \text{Annualized Capital Cost} + \text{Annual Operating Cost} \\ = \$2,108 + \$3,610 \\ = \$5,718/\text{yr}$$

Cost effectiveness in \$/ton is the total annual cost of the technology, in \$/year, divided by the emissions removed by using the technology, in tons per year.

The quantity of emissions removed is emissions calculated in Section VII.C.2 multiplied by the efficiency of the catalyst:

$$\text{Emissions Removed} = \text{Uncontrolled Emissions} \times (\text{Catalyst NO}_x \text{ Control Efficiency}) \\ = 114 \text{ lb/yr} \times (0.90) \times 1 \text{ ton}/2,000 \text{ lb} \\ = 0.05 \text{ ton-NO}_x/\text{yr}$$

$$\text{Cost Effectiveness} = \text{Total Annual Cost} (\$/\text{yr}) / \text{Emissions Removed} (\text{ton}/\text{yr}) \\ = \$5,718/\text{yr} / 0.05 \text{ lb-NO}_x \text{ removed}/\text{yr} \\ = \$114,360/\text{ton removed.}$$

Based on the cost-effective analysis, a NO_x catalyst (three-way catalyst) is not cost effective.

e. Step 5 - Select BACT

There is no control technology that is cost effective for BACT for NO_x emissions from this rich-burn emergency standby LPG/propane gas IC engine less than 132 bhp. The applicant has proposed to install a 51.5 bhp rich-burn emergency standby LPG/propane gas IC engine less than 132 bhp with no control technology for NO_x emissions; therefore BACT for NO_x emissions is satisfied.

2. 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 3.1.5, 3rd quarter 2013, identifies achieved in practice BACT for VOC emissions from rich-burn emergency LPG/propane gas IC engines less than 132 bhp as follows:

- 1) Positive crankcase ventilation

In addition, the SJVUAPCD BACT Clearinghouse guideline 3rd quarter 2013, identifies technologically feasible BACT for VOC emissions from rich-burn emergency LPG/propane gas IC engines < 132 bhp as follows:

- 1) VOC catalyst (three-way catalyst) and positive crankcase ventilation

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) and positive crankcase ventilation
- 2) Positive crankcase ventilation

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.

Pursuant to the District BACT Policy section X. (Revised 4/18/95), the annual cost of installing and maintaining the 3-way catalyst will be calculated as follows. The installation cost will be spread over the expected life of the catalyst which is estimated at 10 years and using the capital recovery equation (Equation 1). A 10% interest rate is assumed in the equation and the assumption will be made that the equipment has no salvage value at the end of the ten-year cycle.

$$A = [TCI * i(1+i)^n] / [(1+i)^n - 1] \quad \text{Equation 1}$$

Where:

$$\begin{aligned} A &= \text{Annualized Capital Cost (\$/yr)} \\ TCI &= \text{Total Capital Investment (\$)} \end{aligned}$$

I = Interest Rate (10%, per District policy)
N = Equipment Life (10 years)

$$A = [\$12,958 * 0.1 * (1.1)^{10}] / [(1.1)^{10} - 1]$$

= \$2,108/year

In addition to the initial cost to buy and install the catalyst, there are operating and maintenance costs. Per the applicant, it is expected that it will cost \$3,600 each year to operate and maintain the catalyst.

Adding the annualized capital cost to the annual operating and maintenance cost is the total annual cost to acquire, install, and operate a 3-way catalyst.

$$\begin{aligned} \text{Total Annual Cost} &= \text{Annualized Capital Cost} + \text{Annual Operating Cost} \\ &= \$2,108 + \$3,610 \\ &= \$5,718/\text{yr} \end{aligned}$$

Cost effectiveness in \$/ton is the total annual cost of the technology, in \$/year, divided by the emissions removed by using the technology, in tons per year.

The quantity of emissions removed is emissions calculated in Section VII.C.2 multiplied by the efficiency of the catalyst:

$$\begin{aligned} \text{Emissions Removed} &= \text{Uncontrolled Emissions} \times (\text{Catalyst VOC Control Efficiency}) \\ &= 33 \text{ lb/yr} \times (0.50) \times 1 \text{ ton}/2,000 \text{ lb} \\ &= 0.01 \text{ ton-VOC/yr} \end{aligned}$$

$$\begin{aligned} \text{Cost Effectiveness} &= \text{Total Annual Cost} (\$/\text{yr}) / \text{Emissions Removed} (\text{ton}/\text{yr}) \\ &= \$5,718/\text{yr} / 0.01 \text{ lb-NOx removed}/\text{yr} \\ &= \$571,800/\text{ton removed}. \end{aligned}$$

Based on the preceding cost-effective analysis, a rich-burn engine with a VOC catalyst (three-way catalyst) and positive crankcase ventilation is not cost effective.

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 LPG/propane gas IC engines < 132 bhp is positive crankcase ventilation. The applicant has proposed to install a 51.5 bhp rich-burn emergency standby LPG/propane gas IC engine with positive crankcase ventilation; therefore BACT for VOC emissions is satisfied.

Appendix B HRA Summary and AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Sandra Lowe-Leseth - Permit Services
 From: Cheryl Lawler - Permit Services
 Date: August 22, 2013
 Facility Name: MCI dba Verizon Business
 Location: Marker 93, 37 along Aqueduct near Orma Loma, CA
 Application #(s): C-8577-1-0
 Project #: C-1132037

A. RMR SUMMARY

RMR Summary			
Categories	LPG/Propane Emergency ICE (Unit 1-0)	Project Totals	Facility Totals
Prioritization Score	0.03*	0.03	0.03
Acute Hazard Index	N/A	N/A	0.00
Chronic Hazard Index	N/A	N/A	0.00
Maximum Individual Cancer Risk	N/A	N/A	0.00
T-BACT Required?	No		
Special Permit Conditions?	No		

*The project passed on prioritization with a score of less than 1; therefore, no further analysis was required.

B. RMR REPORT

I. Project Description

Technical Services received a request on August 16, 2013, to perform an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for the installation of a 51.5 bhp intermittent LPG/Propane emergency internal combustion engine.

II. Analysis

Toxic emissions for the engine were calculated using 2001 Ventura County Air Pollution Control District emission factors for natural gas fired internal combustion 4 stroke rich burn engines and the District's approved conversion factors from natural gas to LPG. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the proposed 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 project was less than 1.0 (see RMR Summary Table). Therefore, no further analysis was necessary.

The following parameters were used for the review:

Analysis Parameters Unit 1-0			
Source Type	Point	Closest Receptor Distance (m)	366
BHP	51.5	Closest Receptor Type	Business
Hours of Operation (yr)	100	Project Location	Rural
Stack Diameter (m)	0.08	Stack Gas Temp. (K)	977
Stack Height (m)	3.05	Stack Gas Velocity (m/sec)	31.51

Technical Services also performed modeling for criteria pollutants NO_x, SO_x, PM₁₀, and PM_{2.5}, as well as the RMR for the engine. The emission rates used for criteria pollutant modeling were 114 lb/yr NO_x, 0 lb/yr SO_x, 2 lb/yr PM₁₀, and 2 lb/yr PM_{2.5}.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

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

*Results were taken from the attached PSD spreadsheet.

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

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

III. Conclusions

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

The prioritization score for this project is not above 1.0. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

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
Project Email
Prioritization
AAQA Results
Facility Summary

Appendix C
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-8577-1-0

LEGAL OWNER OR OPERATOR: MCI DBA VERIZON BUSINESS

MAILING ADDRESS: PO BOX 725
CHINO, CA 91708

LOCATION: MARKER 93,37 ALONG DEPT. WATER RES. AQUIDUCT
SEC 27, TWN 12S, RNG 11E
ORA LOMA, CA

EQUIPMENT DESCRIPTION:

51.5 BHP (INTERMITTENT) POWER SOLUTIONS MODEL 3.0L RICH-BURN LPG/PROPANE-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
5. {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]
6. {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]
7. {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]
8. {3505} This IC engine shall be fired on LPG/propane gas only. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

C-8577-1-0 : Aug 30 2013 10:40AM -- LOWELES . Joint Inspection NOT Required

9. {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]
10. {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]
11. Emissions from this IC engine shall not exceed any of the following limits: 10.0 g-NOx/bhp-hr, 0.175 g-PM10/bhp-hr, 387 g-CO/bhp-hr, or 2.91 g-VOC/bhp-hr. [District Rule 2201]
12. {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]
13. {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]
14. {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]
15. {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]

DRAFT

Appendix D Greenhouse Gas Calculations

Greenhouse Gas Calculations

Assumptions:

- Energy density of propane: 2,500 Btu/ ft³
- Fuel consumption rate at 100% power rating: 159 ft³/hr (per manufacturer)
- 1 metric ton = 1.1 (short) ton
- The propane GHG emission factors (EF) are taken from 40 CFR 98 Subpart C, Tables C-1 and C-2
- The global warming potentials (GWP) are taken from 40 CFR 98, Subpart A, Table A-1

Summary Propane GHG Factors		
Pollutant	Emission Factor (EF) Kg/MMBtu	Global Warming Potential (GWP) (kg-CO ₂ e/kg)
CO ₂	61.46	1.0
CH ₄	3.0 x 10 ⁻³	21.0
N ₂ O	6.0 x 10 ⁻⁴	310.0

Calculations:

$$\begin{aligned} \text{Conversion Factor} &= 100 \text{ hr/year} \times \text{metric ton}/1,000 \text{ kg} \times 1 \text{ MMBtu}/1,000,000 \text{ Btu} \\ &= 1 \times 10^{-7} \text{ hr-metric ton-MMBtu/year-kg-Btu} \end{aligned}$$

$$\text{Emissions} = \text{Fuel Consumption Rate} \times \text{Energy Density} \times \text{EF} \times \text{GWP} \times \text{Conversion Factor}$$

$$\begin{aligned} \text{CO}_2 &= 159 \text{ ft}^3/\text{hr} \times 2,500 \text{ Btu}/\text{ft}^3 \times 61.46 \text{ kg-CO}_2\text{e}/\text{MMBtu} \times 1 \text{ kg-CO}_2\text{e}/\text{kg-CO}_2 \times 1 \times 10^{-7} \\ &= 24.4 \text{ metric ton-CO}_2\text{e}/\text{yr} \end{aligned}$$

$$\begin{aligned} \text{CH}_4 &= 159 \text{ ft}^3/\text{hr} \times 2,500 \text{ Btu}/\text{ft}^3 \times 0.003 \text{ kg-CH}_4/\text{MMBtu} \times 21 \text{ kg-CO}_2\text{e}/\text{kg-CH}_4 \times 1 \times 10^{-7} \\ &= 0.02 \text{ metric ton-CO}_2\text{e}/\text{yr} \end{aligned}$$

$$\begin{aligned} \text{N}_2\text{O} &= 159 \text{ ft}^3/\text{hr} \times 2,500 \text{ Btu}/\text{ft}^3 \times 0.0006 \text{ kg-N}_2\text{O}/\text{MMBtu} \times 310 \text{ kg-CO}_2\text{e}/\text{kg-N}_2\text{O} \times 1 \times 10^{-7} \\ &= 0.07 \text{ metric ton-CO}_2\text{e}/\text{yr} \end{aligned}$$

$$\begin{aligned} \text{Equivalent GHG Emissions} &= 24.4 + 0.02 + 0.07 \\ &= 24.5 \text{ metric ton-CO}_2\text{e}/\text{yr} = 27.0 \text{ (short) ton CO}_2\text{e}/\text{yr} \end{aligned}$$

Conclusion:

The CEQA project-specific GHG increase is 24.5 metric ton-CO₂e/yr. Per District Policy, project-specific greenhouse gas emissions less than or equal to 230 metric tons-CO₂e/year are considered to be zero for District permitting purposes and are exempt from further environmental review.