



JUN 16 2010

Fred Massetti  
Madera Radio Dispatch Inc  
325 South D Street  
Madera, CA 93638

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Project Number: C-1101359**


Dear Mr. Massetti:

Enclosed for your review and comment is the District's analysis of Madera Radio Dispatch Inc's application for an Authority to Construct for the installation of three LPG/propane-fired emergency standby IC engines powering electrical generators, at Deadwood Peak in Oakhurst, 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. Thom Maslowski of Permit Services at (559) 230-5906.

Sincerely,



David Warner  
Director of Permit Services

DW:TM

Enclosures

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

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**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



JUN 16 2010

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

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Project Number: C-1101359**

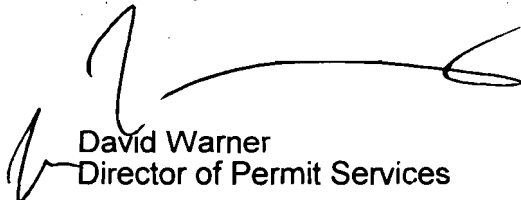
Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Madera Radio Dispatch Inc's application for an Authority to Construct for the installation of three LPG/propane-fired emergency standby IC engines powering electrical generators, at Deadwood Peak in Oakhurst, 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. Thom Maslowski of Permit Services at (559) 230-5906.

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Fresno Bee

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

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to Madera Radio Dispatch Inc for the installation of three LPG/propane-fired emergency standby IC engines powering electrical generators, at Deadwood Peak in Oakhurst, CA.

The analysis of the regulatory basis for this proposed action, Project #C-1101359, 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 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.

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

Facility Name: Madera Radio Dispatch, Inc  
Mailing Address: 325 South D Street  
Madera, CA 93638

Date: May 3, 2010  
Engineer: Thom Maslowski  
Lead Engineer: Joven Refuerzo

Contact Person: Fred Massetti  
Telephone: (559)673-9037  
Application #: C-7975-1-0, '-2-0 & '-3-0  
Project #: C-1101359  
Complete: April 21, 2010

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**I. Proposal**

Madera Radio Dispatch, Inc is proposing to install three LPG-fired emergency standby internal combustion (IC) engines powering electrical generators in order to operate the Madera Counties sheriffs departments communication equipment in the case of a power outage.

**II. Applicable Rules**

Rule 2201 New and Modified Stationary Source Review Rule (9/21/06)  
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 equipment will be located at Deadwood Peak in Oakhurst, within the SW/4 of Section 21 & 28, Township 7S, Range 21E. The District has verified that the equipment /is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 [is not applicable to this project.

### IV. Process Description

The emergency standby engines power a set of Cummins generators for power generation. Other than emergency operation, the engine may be operated up to 100 hours per year for maintenance and testing purposes.

### V. Equipment Listing

**C-7975-1-0:** 72 BHP FORD MODEL ESG 645 SERIAL NUMBER 04XK23127 4-STROKE LPG/PROPANE-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

**C-7975-2-0:** 72 BHP FORD MODEL ESG 6421-6005A SERIAL NUMBER 02-06-014007 4-STROKE LPG/PROPANE-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

**C-7975-3-0:** 82 BHP FORD MODEL CSG-6491-6005 SERIAL NUMBER 31228E-08-RK 4-STROKE LPG/PROPANE-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN 45 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 O<sub>2</sub> Controller
- Lean Burn Technology

The PCV system reduces crankcase VOC and PM<sub>10</sub> 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  
 Thermal efficiency of engine: commonly ≈ 35%  
 Catalyst control efficiencies: 90% for NO<sub>x</sub>, 80% for CO, and 50% for VOC  
 (Update On Emissions - Form 960, Second Edition, Waukesha Engine Division, Dresser Industries, October, 1991)

- The applicant has only supplied an emissions factor for NO<sub>x</sub> and VOC emissions combined. Therefore the District will use this combined emissions factor as the NO<sub>x</sub> 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**

C-7975-1-0

Emission Factors			
Pollutant	Emission Factor (lb/1,000 gal)	Emission Factor (g/bhp-hr)*	Source
NO <sub>x</sub>		9.2	Manufacturer
SO <sub>x</sub>	0.35	0.012	CARB Emissions Inventory Database
PM <sub>10</sub>	5	0.175	CARB Emissions Inventory Database
CO		27.4	Manufacturer
VOC	83	2.91	CARB Emissions Inventory Database

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

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

C-7975-2-0

Emission Factors			
Pollutant	Emission Factor (lb/1,000 gal)	Emission Factor (g/bhp-hr)*	Source
NO <sub>x</sub>		9.2	Manufacturer
SO <sub>x</sub>	0.35	0.012	CARB Emissions Inventory Database
PM <sub>10</sub>	5	0.175	CARB Emissions Inventory Database
CO		27.4	Manufacturer ase
VOC	83	2.91	CARB Emissions Inventory Database

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

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**C-7975-3-0**

Emission Factors			
Pollutant	Emission Factor (lb/1,000 gal)	Emission Factor (g/bhp-hr)*	Source
NO <sub>x</sub>		1.3	Manufacturer
SO <sub>x</sub>	0.35	0.012	CARB Emissions Inventory Database
PM <sub>10</sub>	5	0.175	CARB Emissions Inventory Database
CO		21.2	Manufacturer use
VOC	83	2.91	CARB Emissions Inventory Database

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

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

**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:

**C-7975-1-0**

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 <sub>x</sub>	9.2	72	24	453.6	35.0
SO <sub>x</sub>	0.012	72	24	453.6	0.0
PM <sub>10</sub>	0.175	72	24	453.6	0.7
CO	27.4	72	24	453.6	104.4
VOC	2.91	72	24	453.6	11.1

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 <sub>x</sub>	9.2	72	100	453.6	146
SO <sub>x</sub>	0.012	72	100	453.6	0
PM <sub>10</sub>	0.175	72	100	453.6	3
CO	27.4	72	100	453.6	435
VOC	2.91	72	100	453.6	46

C-7975-2-0

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 <sub>x</sub>	9.2	72	24	453.6	35.0
SO <sub>x</sub>	0.012	72	24	453.6	0.0
PM <sub>10</sub>	0.175	72	24	453.6	0.7
CO	27.4	72	24	453.6	104.4
VOC	2.91	72	24	453.6	11.1

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 <sub>x</sub>	9.2	72	100	453.6	146
SO <sub>x</sub>	0.012	72	100	453.6	0
PM <sub>10</sub>	0.175	72	100	453.6	3
CO	27.4	72	100	453.6	435
VOC	2.91	72	100	453.6	46

C-7975-3-0

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 <sub>x</sub>	1.3	82	24	453.6	5.6
SO <sub>x</sub>	0.012	82	24	453.6	0.1
PM <sub>10</sub>	0.175	82	24	453.6	0.8
CO	21.2	82	24	453.6	92.0
VOC	2.91	82	24	453.6	12.6



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 <sub>x</sub>	1.3	82	100	453.6	24
SO <sub>x</sub>	0.012	82	100	453.6	0
PM <sub>10</sub>	0.175	82	100	453.6	3
CO	21.2	82	100	453.6	383
VOC	2.91	82	100	453.6	53

### 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 engines as previously determined in Section VII.C.2. Thus:

SSPE2					
Permit Unit	NO <sub>x</sub> (lb/yr)	SO <sub>x</sub> (lb/yr)	PM <sub>10</sub> (lb/yr)	CO (lb/yr)	VOC (lb/yr)
C-7975-1-0	146	0	3	435	46
C-7975-2-0	146	0	3	435	46
C-7975-3-0	24	0	3	383	53
<b>SSPE2 Total</b>	<b>316</b>	<b>0</b>	<b>9</b>	<b>1253</b>	<b>145</b>

### 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 <sub>x</sub>	0	316	50,000	No	No
SO <sub>x</sub>	0	0	140,000	No	No
PM <sub>10</sub>	0	9	140,000	No	No
CO	0	1,253	200,000	No	No
VOC	0	145	50,000	No	No

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

### 6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

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

- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22

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

## **7. Major Modification**

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 previously, the facility is not a Major Source for any criteria pollutant; therefore, the project does not constitute a Major Modification.

## **8. Federal Major Modification**

As shown in the previous section, this project does not constitute a Major Modification. Therefore, in accordance with District Rule 2201, Section 3.17, this project does not constitute a Federal Major Modification and no further discussion is required.

## **9. Quarterly Net Emissions Change (QNEC)**

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

## **VIII. Compliance**

### **Rule 2201 New and Modified Stationary Source Review Rule**

#### **A. Best Available Control Technology (BACT)**

##### **1. BACT Applicability**

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following\*:

- a) Any new emissions unit with a potential to emit exceeding two pounds per day,

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

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

**a. New emissions units – PE > 2 lb/day**

Since these engines are new emissions units, the daily emissions are compared to the BACT thresholds in the following tables:

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -1-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	35	> 2.0	n/a	Yes
SO <sub>x</sub>	0.0	> 2.0	n/a	No
PM <sub>10</sub>	0.7	> 2.0	n/a	No
CO	104.9	> 2.0 and SSPE2 ≥ 200,000 lb/yr	1,253	No
VOC	11.1	> 2.0	n/a	Yes

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -2-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	35	> 2.0	n/a	Yes
SO <sub>x</sub>	0.0	> 2.0	n/a	No
PM <sub>10</sub>	0.7	> 2.0	n/a	No
CO	104.9	> 2.0 and SSPE2 ≥ 200,000 lb/yr	1,253	No
VOC	11.1	> 2.0	n/a	Yes

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -3-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	5.6	> 2.0	n/a	Yes
SO <sub>x</sub>	0.1	> 2.0	n/a	No
PM <sub>10</sub>	0.8	> 2.0	n/a	No
CO	92	> 2.0 and SSPE2 ≥ 200,000 lb/yr	1,253	No
VOC	12.6	> 2.0	n/a	Yes

Thus BACT will be triggered for NO<sub>x</sub> and VOC emissions from the engines for this project.

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

As discussed previously in Section I, these engines are 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, these engines are 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 3.1.5,2 quarter 2010, 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<sub>x</sub>: No control technology (No technologically feasible option was determined to be cost effective)
- VOC: Positive crankcase ventilation

- {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 SSIFE 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 <sub>x</sub>	35.0	100	No
SO <sub>x</sub>	0.0	100	No
PM <sub>10</sub>	0.7	100	No
CO	104.9	100	Yes
VOC	11.1	100	No

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 <sub>x</sub>	35.0	100	No
SO <sub>x</sub>	0.0	100	No
PM <sub>10</sub>	0.7	100	No
CO	104.9	100	Yes
VOC	11.1	100	No

PE > 100 lb/day Public Notice Thresholds			
Pollutant	Daily PE for unit -3-0 (lb/day)	Public Notice Threshold (lb/day)	Public Notice Triggered?
NO <sub>x</sub>	5.6	100	No
SO <sub>x</sub>	0.1	100	No
PM <sub>10</sub>	0.8	100	No
CO	92.0	100	No
VOC	12.6	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 <sub>x</sub>	0	316	20,000	No
SO <sub>x</sub>	0	0	54,750	No
PM <sub>10</sub>	0	9	29,200	No
CO	0	1,253	200,000	No
VOC	0	145	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 <sub>x</sub>	316	0	316	20,000	No
SO <sub>x</sub>	0	0	0	20,000	No
PM <sub>10</sub>	9	0	9	20,000	No
CO	1,253	0	1,253	20,000	No
VOC	145	0	145	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 ATCs for this project.

**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 these emergency



standby IC engines, 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 ATCs to ensure compliance:

C-7975-1-0 & -2-0:

- Emissions from this IC engine shall not exceed any of the following limits: 9.2 g-NOx/bhp-hr, 0.175 g-PM10/bhp-hr, 27.4 g-CO/bhp-hr, or 2.91 g-VOC/bhp-hr. [District Rule 2201]

C-7975-3-0:

- Emissions from this IC engine shall not exceed any of the following limits: 1.3 g-NOx/bhp-hr, 0.175 g-PM10/bhp-hr, 21.2 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*, these IC engines are 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 PM<sub>10</sub> 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	Pass	N/A	Pass	N/A	N/A
NO <sub>x</sub>	Pass <sup>2</sup>	N/A	N/A	N/A	Pass
SO <sub>x</sub>	Pass	Pass	N/A	Pass	Pass
PM <sub>10</sub>	N/A	N/A	N/A	Pass <sup>1</sup>	Pass <sup>1</sup>

The proposed location of installation of the IC engines is in an attainment area for NO<sub>x</sub>, CO, and SO<sub>x</sub>. As shown by the preceding table of AAQA results the proposed installation of the LPG/propane-fired IC engine will not cause a violation of a State or National ambient air quality standard for NO<sub>x</sub>, CO, or SO<sub>x</sub>.

The proposed location for installation of the LPG/propane-fired IC engines is in a non-attainment area for PM<sub>10</sub>. The levels of significance, from 40 CFR Part 51.165 (b)(2), and the increase in the ambient PM<sub>10</sub> concentration due to the installation of the proposed equipment are presented in the following table.

<sup>1</sup>The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

<sup>2</sup>The criteria pollutant 1-hour value passed using TIER III NO<sub>2</sub> NAAQS modeling.

EPA PM <sub>10</sub> Significance Level and the Calculated Contribution for this Project					
	Calculated Contributions (µg/m <sup>3</sup> )				
	1 hr Average	3 hr Average	8 hr Average	24 hr Average	Annual Average
EPA PM <sub>10</sub> Significance Level	N/A	N/A	N/A	5.0	1.0
Project Total PM <sub>10</sub> Concentration	N/A	N/A	N/A	4.29	.002
Does this project violate the standard?	N/A	N/A	N/A	No	No

As shown in the preceding table, the calculated contribution of PM<sub>10</sub> from the proposed installation of the LPG/propane-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 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 ATCs 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 ATCs 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:

$$0.175 \frac{g - PM_{10}}{bhp - hr} \times \frac{1 bhp - hr}{2,542.5 Btu} \times \frac{10^6 Btu}{8,578 dscf} \times \frac{0.35 Btu_{out}}{1 Btu_{in}} \times \frac{15.43 grain}{g} = 0.0433 \frac{grain - PM}{dscf}$$

Since 0.0433 grain-PM/dscf is  $\leq$  to 0.1 grain per dscf, compliance with Rule 4201 is expected.

Therefore, the following condition will be listed on the ATCs 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, these LPG/propane-fired emergency IC engines 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<sub>x</sub>), 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 engines 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 ATCs 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 ATCs 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 SO<sub>2</sub>) 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 SO<sub>2</sub>

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

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

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

Since 2.57 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 ATCs 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.

On December 17, 2009, the District's Governing Board adopted the first comprehensive regional policy and guidance on addressing and mitigating GHG emission impacts caused by industrial, commercial, and residential development in the San Joaquin Valley. The adopted District policy – *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* applies to projects for which the District has discretionary approval authority over the project and serves as the lead agency for CEQA purposes. The policy relies on the use of performance based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA.

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. However, consistent with the District's objective to achieve the GHG emission reduction targets established pursuant to AB 32, BPS will be incorporated into the District's GEAR application review process. In the interim, projects meeting the existing GEAR requirements will continue to be processed as ministerial approvals.

#### **IX. Recommendation**

Pending a successful NSR Public Noticing period, issue Authorities to Construct C-7975-1-0, -2-0 & -3-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix D.

#### **X. Billing Information**

<b>Billing Schedule</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Fee Amount</b>
C-7975-1-0	3020-10-A	72 bhp	\$80.00
C-7975-2-0	3020-10-A	72 bhp	\$80.00
C-7975-3-0	3020-10-A	82 bhp	\$80.00

## **Appendixes**

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

# Appendix A

## BACT Guideline and BACT Analysis

**Per » B A C T » Bact Guideline.asp?category Level1=3&category Level2=1&category Level3=5&last Update=11 » 27 :**

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

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

<b>Pollutant</b>	<b>Achieved in Practice or in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
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.

**This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Details Page.**

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

Oxides of nitrogen (NO<sub>x</sub>) are generated from the high temperature combustion of the LPG/propane gas fuel. A majority of the NO<sub>x</sub> emissions are formed from the high temperature reaction of nitrogen and oxygen in the inlet air. The rest of the NO<sub>x</sub> emissions are formed from the reaction of fuel-bound nitrogen with oxygen in the inlet air.

### **1. BACT Analysis for NO<sub>x</sub> Emissions:**

#### **a. Step 1 - Identify all control technologies**

The SJVUAPCD BACT Clearinghouse guideline 3.1.5, 2nd quarter 2010, identifies achieved in practice BACT for NO<sub>x</sub> emissions from rich-burn emergency LPG/propane gas IC engines < 132 bhp as follows:

- 1) NO<sub>x</sub> catalyst (three-way catalyst)

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<sub>x</sub> catalyst (three-way catalyst)

#### **d. Step 4 - Cost Effectiveness Analysis**

A cost effective analysis must be performed for all control options in the list from Step 2 in the order of their ranking to determine the cost effective option with the lowest emissions.

Per the following table this facility is a small emitter; therefore, a cost analysis is not required.

Small Emitter Verification			
Pollutant	Threshold (lb/year)	Annual Emissions (lb/year)	Exceeds limit?
NO <sub>x</sub>	4,000	316	No
SO <sub>x</sub>	4,000	0	No
PM <sub>10</sub>	4,000	9	No
CO	4,000	1,253	No
VOC	4,000	145	No

Per the District's BACT Policy, section IX.E.1, as a small emitter, the facility is only required to apply the most stringent BACT that has been "achieved-in-practice" for this class and category of source operation. Therefore, the technologically feasible option or alternate basic equipment option will not be considered, which leaves achieve in practice as the only option.

**e. Step 5 - Select BACT**

There is no control technology that is cost effective for BACT for NO<sub>x</sub> emissions from this rich-burn emergency standby LPG/propane gas IC engine < 132 bhp. The applicant has proposed to install a rich-burn emergency standby LPG/propane gas IC engine < 132 bhp with no control technology for NO<sub>x</sub> emissions; therefore BACT for NO<sub>x</sub> 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, 2nd quarter 2010, identifies achieved in practice BACT for VOC emissions from rich-burn emergency LPG/propane gas IC engines < 132 bhp as follows:

- 1) Positive crankcase ventilation

In addition, the SJVUAPCD BACT Clearinghouse guideline 3.1.5, 2nd quarter 2010, 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 2 in the order of their ranking to determine the cost effective option with the lowest emissions.

Per the following table this facility is a small emitter; therefore, a cost analysis is not required.

Small Emitter Verification			
Pollutant	Threshold (lb/year)	Annual Emissions (lb/year)	Exceeds limit?
NO <sub>x</sub>	4,000	316	No
SO <sub>x</sub>	4,000	0	No
PM <sub>10</sub>	4,000	9	No
CO	4,000	1,253	No
VOC	4,000	145	No

Per the District's BACT Policy, section IX.E.1, as a small emitter, the facility is only required to apply the most stringent BACT that has been "achieved-in-practice" for this class and category of source operation. Therefore, the technologically feasible option or alternate basic equipment option will not be considered, which leaves achieve in practice as the only option.

**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 rich-burn emergency standby LPG/propane gas IC engines with positive crankcase ventilation; therefore BACT for VOC emissions is satisfied.

## Appendix B HRA Summary



# San Joaquin Valley Air Pollution Control District Risk Management Review

To: Thom Maslowski – Permit Services  
From: Cheryl Lawler – Technical Services  
Date: June 1, 2010  
Facility Name: Madera Radio Dispatch, Inc.  
Location: Deadwood Peak  
Application #(s): C-7975-1-0, 2-0, 3-0  
Project #: C-1101359

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## A. RMR SUMMARY

RMR Summary			
Categories	Three LPG/Propane ICEs (Units 1-0, 2-0, 3-0)	Project Totals	Facility Totals
Prioritization Score	0.002	0.002	0.002
Acute Hazard Index	NA	NA	NA
Chronic Hazard Index	NA	NA	NA
Maximum Individual Cancer Risk	NA	NA	NA
T-BACT Required?	No		
Special Permit Conditions?	No		

## B. RMR REPORT

### I. Project Description

Technical Services received a request on May 4, 2010, to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for three LPG/Propane emergency IC engines powering electrical generators.

### II. Analysis

Toxic emissions for the units were calculated using District approved emission factors for internal combustion of LPG/Propane. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905, March 2, 2001), risks from the units toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEARTs database. The prioritization score for the units 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			
Units 1-0 & 2-0 - LPG Process Rate (1000 gallons/yr)	0.556 each	Closest Receptor (m)	3219
Unit 3-0 - LPG Process Rate (1000 gallons/yr)	0.634	Project Location Type	Rural

**AAQA:** In addition to the RMR, Technical Services performed modeling for NO<sub>x</sub>, SO<sub>x</sub>, CO, and PM<sub>10</sub> using AERMOD.

The results from the Criteria Pollutant Modeling are as follows:

#### Criteria Pollutant Modeling Results\*

Three LPG/Propane ICEs	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass <sup>2</sup>	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>1</sup>	Pass <sup>1</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

<sup>2</sup>The criteria pollutant 1-hour value passed using TIER III NO<sub>2</sub> NAAQS modeling.

### III. Conclusion

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

The prioritization score is less than 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.

## Appendix C QNEC Calculations

### Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - 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<sub>quarterly</sub> and BE<sub>quarterly</sub> can be calculated as follows:

Quarterly Post Project Emissions -1-0		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	146	36.5
SO <sub>x</sub>	0	0.0
PM <sub>10</sub>	3	0.8
CO	435	108.8
VOC	46	11.5

Quarterly Post Project Emissions -2-0		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	146	36.5
SO <sub>x</sub>	0	0.0
PM <sub>10</sub>	3	0.8
CO	435	108.8
VOC	46	11.5

Quarterly Post Project Emissions -3-0		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	24	6.0
SO <sub>x</sub>	0	0.0
PM <sub>10</sub>	3	0.8
CO	383	95.8
VOC	53	13.3

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

QNEC -1-0			
Pollutant	Quarterly PE2 (lb/qtr)	Quarterly BE (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	37	0	37
SO <sub>x</sub>	0.0	0	0.0
PM <sub>10</sub>	1	0	1
CO	109	0	109
VOC	12	0	12

QNEC -2-0			
Pollutant	Quarterly PE2 (lb/qtr)	Quarterly BE (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	37	0	37
SO <sub>x</sub>	0.0	0	0.0
PM <sub>10</sub>	1	0	1
CO	109	0	109
VOC	12	0	12

QNEC -3-0			
Pollutant	Quarterly PE2 (lb/qtr)	Quarterly BE (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	6.0	0	6.0
SO <sub>x</sub>	0.0	0	0.0
PM <sub>10</sub>	1	0	1
CO	96	0	96
VOC	13	0	13

# Appendix D Draft ATC

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**ISSUANCE DATE: DRAFT**

**PERMIT NO:** C-7975-1-0

**LEGAL OWNER OR OPERATOR:** MADERA RADIO DISPATCH INC

**MAILING ADDRESS:** 325 SOUTH D STREET  
MADERA, CA 93638

**LOCATION:** DEADWOOD PEAK  
OAKHURST, CA

**EQUIPMENT DESCRIPTION:**

72 BHP FORD MODEL ESG 645 SERIAL NUMBER 04XK23127 4-STROKE LPG/PROPANE-FIRED EMERGENCY  
STANDBY IC ENGINE 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. {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
5. Emissions from this IC engine shall not exceed any of the following limits: 9.2 g-NOx/bhp-hr, 0.175 g-PM10/bhp-hr, 27.4 g-CO/bhp-hr, or 2.91 g-VOC/bhp-hr. [District Rule 2201]
6. {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]
7. {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]
8. {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]

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-7975-1-0: Jun 14 2010 1:20PM - MASLOWST : 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. {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]
12. {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]
13. {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702]
14. {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

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: C-7975-2-0

LEGAL OWNER OR OPERATOR: MADERA RADIO DISPATCH INC  
MAILING ADDRESS: 325 SOUTH D STREET  
MADERA, CA 93638

LOCATION: DEADWOOD PEAK  
OAKHURST, CA

EQUIPMENT DESCRIPTION:  
72 BHP FORD MODEL ESG 6421-6005A SERIAL NUMBER 02-06-014007 4-STROKE LPG/PROPANE-FIRED  
EMERGENCY STANDBY IC ENGINE 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. {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
5. Emissions from this IC engine shall not exceed any of the following limits: 9.2 g-NOx/bhp-hr, 0.175 g-PM10/bhp-hr, 27.4 g-CO/bhp-hr, or 2.91 g-VOC/bhp-hr. [District Rule 2201]
6. {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]
7. {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]
8. {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]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director APCO

**DRAFT**  
DAVID WARNER, Director of Permit Services

C-7975-2-0 - Jun 14 2010 1:20PM - MASLOWST : 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. {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]
12. {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]
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DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-7975-3-0

**LEGAL OWNER OR OPERATOR:** MADERA RADIO DISPATCH INC  
**MAILING ADDRESS:** 325 SOUTH D STREET  
MADERA, CA 93638

**LOCATION:** DEADWOOD PEAK  
OAKHURST, CA

**EQUIPMENT DESCRIPTION:**

82 BHP FORD MODEL CSG-6491-6005 SERIAL NUMBER 31228E-08-RK 4-STROKE LPG/PROPANE-FIRED EMERGENCY STANDBY IC ENGINE 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. {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
5. Emissions from this IC engine shall not exceed any of the following limits: 1.3 g-NOx/bhp-hr, 0.175 g-PM10/bhp-hr, 21.2 g-CO/bhp-hr, or 2.91 g-VOC/bhp-hr. [District Rule 2201]
6. {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]
7. {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]
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