



SEP 14 2011

Donald Ennis  
Veteran's Administration Medical Center  
2615 E Clinton Ave  
Fresno, CA 93703-2223

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Project Number: C-1112189**

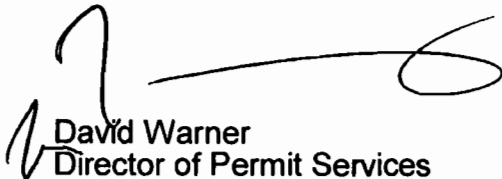
Dear Mr. Ennis:

Enclosed for your review and comment is the District's analysis of Veteran's Administration Medical Center's application for an Authority to Construct for installing four, 821 hp, diesel, emergency-standby, internal combustion engines powering 550 kW electrical generators, at 2615 E Clinton Ave, Fresno, California.

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. George Heinen of Permit Services at (559) 230-5811.

Sincerely,



David Warner  
Director of Permit Services

DW:GH

Enclosures

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

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**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95358-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

**Central Region (Main Office)**  
1990 E. Gettysburg Avenue  
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**Southern Region**  
34948 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 881-392-5500 FAX: 881-392-5585



**SEP 14 2011**

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-1112189**

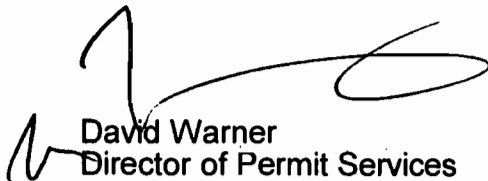
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Fresno Bee  
Fresno Bee

**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 Veteran's Administration Medical Center for installing four, 821 hp, diesel, emergency-standby, internal combustion engines powering 550 kW electrical generators, at 2615 E Clinton Ave, Fresno, California.

The analysis of the regulatory basis for this proposed action, Project #C-1112189, 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  
Diesel-Fired Emergency Standby IC Engine**

Facility Name:	VA Medical Center	Date:	August 30, 2011
Mailing Address:	2615 E Clinton Ave Fresno, CA 95703-2223	Engineer:	G. Heinen
		Lead Engineer:	S. Gill
Contact Person:	Donald Ennis, Contractor		
Telephone:	(916) 871-2661		
Application #:	C-1336-18-0, -19-0, -20-0, and -21-0		
Project #:	C-1112189		
Complete:	July 30, 2011		

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**I. Proposal**

VA Medical Center is proposing to install four, 821 hp, diesel-fired, emergency standby, internal combustion (IC) engines powering four, 550 kW electrical generators. The new emergency standby IC engines will replace five existing, transportable, emergency standby IC engines that are currently permitted under permits to operate (PTOs) #C-1336-13-0, -14-0, -15-0, -16-0, and -17-0. The transportable engines were installed as interim replacements for C-1336-4-0, -5-0, -6-0, -8-0, and -9-0, which have been cancelled. The five transportable engines' PTOs will be cancelled upon implementation of the four replacement IC engines' ATCs that are addressed in this project.

**II. Applicable Rules**

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)  
Rule 2520 Federally Mandated Operating Permits (6/21/01)  
Rule 4001 New Source Performance Standards (4/14/99)  
Rule 4002 National Emission Standards for Hazardous Air Pollutants (5/20/04)  
Rule 4101 Visible Emissions (2/17/05)  
Rule 4102 Nuisance (12/17/92)  
Rule 4201 Particulate Matter Concentration (12/17/92)  
Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/03)  
Rule 4702 Stationary Internal Combustion Engines – 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

California Environmental Quality Act (CEQA)  
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)  
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:  
CEQA Guidelines

### **III. Project Location**

The project is located at 2615 E Clinton Ave in Fresno, CA.

The District has verified that the equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

### **IV. Process Description**

The emergency standby engine powers an electrical generator. Other than emergency standby operation, the engine may be operated up to 40 hours per year for maintenance and testing purposes.

### **V. Equipment Listing**

- C-1336-18-0:** 821 BHP MTU DETROIT DIESEL, MODEL 12V1600G70S, TIER 2 CERTIFIED, DIESEL-FIRED, EMERGENCY STANDBY IC ENGINE POWERING A 550 KW ELECTRICAL GENERATOR.
- C-1336-19-0:** 821 BHP MTU DETROIT DIESEL, MODEL 12V1600G70S, TIER 2 CERTIFIED, DIESEL-FIRED, EMERGENCY STANDBY IC ENGINE POWERING A 550 KW ELECTRICAL GENERATOR.
- C-1336-20-0:** 821 BHP MTU DETROIT DIESEL, MODEL 12V1600G70S, TIER 2 CERTIFIED, DIESEL-FIRED, EMERGENCY STANDBY IC ENGINE POWERING A 550 KW ELECTRICAL GENERATOR.
- C-1336-21-0:** 821 BHP MTU DETROIT DIESEL, MODEL 12V1600G70S, TIER 2 CERTIFIED, DIESEL-FIRED, EMERGENCY STANDBY IC ENGINE POWERING A 550 KW ELECTRICAL GENERATOR.

### **VI. Emission Control Technology Evaluation**

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

The proposed engines meet the latest Tier Certification requirements; therefore, the engines meet the latest ARB/EPA emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide (see Appendix C for a copy of the emissions data sheet).

The use of very low-sulfur diesel fuel (0.0015% by weight sulfur maximum) reduces SO<sub>x</sub> emissions by over 99% from standard diesel fuel.

## VII. General Calculations

### A. Assumptions

Emergency operating schedule:	24 hours/day
Non-emergency operating schedule:	40 hours/year (per applicant)
Density of diesel fuel:	7.1 lb/gal
EPA F-factor (adjusted to 60 °F):	9,051 dscf/MMBtu
Fuel heating value:	137,000 Btu/gal
BHP to Btu/hr conversion:	2,542.5 Btu/bhp-hr
Thermal efficiency of engine:	commonly ≈ 35%
PM <sub>10</sub> fraction of diesel exhaust:	0.96 (CARB, 1988)

EPA Tier 2 engines have certified NO<sub>x</sub> + VOC emissions of 4.8 g/bhp-hr for engines rated greater than 750 bhp. It will be assumed the NO<sub>x</sub> + VOC emission factor is split 95% NO<sub>x</sub> and 5% VOC (per the District's Carl Moyer program) or 4.6 g/bhp-hr NO<sub>x</sub> and 0.2 g/bhp-hr VOC.

### B. Emission Factors

Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO <sub>x</sub>	4.6	ARB/EPA Certification
SO <sub>x</sub>	0.0051	Mass Balance Equation Below
PM <sub>10</sub>	0.15	ARB/EPA Certification
CO	2.6	ARB/EPA Certification
VOC	0.2	ARB/EPA Certification

A SO<sub>x</sub> emission factor is calculated according to the following formula, based on the sulfur content of the fuel and the assumed combustion factors shown above:

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

**C. Calculations**

**1. Pre-Project Emissions (PE1)**

Since these are new emissions units, PE1 = 0 for each of the four units.

**2. Post-Project PE (PE2)**

The daily and annual PE for each of the four units is calculated as follows:

Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO <sub>x</sub>	4.60	821	24	40	199.8	333
SO <sub>x</sub>	0.0051	821	24	40	0.2	0
PM <sub>10</sub>	0.15	821	24	40	6.5	11
CO	2.60	821	24	40	112.9	188
VOC	0.20	821	24	40	8.7	14

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid ATCs or PTOs at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

SSPE1 is summarized in the following table. See Appendix F for detailed SSPE calculations.

SSPE1					
	NO <sub>x</sub> (lb/yr)	SO <sub>x</sub> (lb/yr)	PM <sub>10</sub> (lb/yr)	CO (lb/yr)	VOC (lb/yr)
SSPE1 Total	8,969	5,119	2,621	25,364	2,032

#### 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.

SSPE2 is summarized in the following table. See Appendix F for detailed SSPE calculations.

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)
SSPE2 Total	8,901	5,118	2,615	25,256	2,023

#### 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	Major Source Threshold (lb/yr)	SSPE1 (lb/yr)	Existing Major Source? (SSPE1 > Threshold?)	SSPE2 (lb/yr)	Becoming a Major Source? (SSPE2 > Threshold?)
NO <sub>x</sub>	20,000	8,969	No	8,901	No
SO <sub>x</sub>	140,000	5119	No	5,118	No
PM <sub>10</sub>	140,000	2,621	No	2,615	No
CO	200,000	25,364	No	25,256	No
VOC	20,000	2,032	No	2,023	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 these are new emissions units, 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 section VII.C.5., this project does not constitute a Major Source. Therefore, in accordance with District Rule 2201, Section 3.17, this project does not constitute a Federal Major Modification.

## **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 E.

**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.

As discussed in Section I, the facility is proposing to install four new emergency standby IC engines. Additionally, as determined in Section VII.C.7, this project does not result in a Major Modification. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

The daily emissions from each of the new engines are compared to the BACT threshold levels in the following table:

<b>New Emissions Unit BACT Applicability</b>				
<b>Pollutant</b>	<b>Daily Emissions for unit -13-0 (lb/day)</b>	<b>BACT Threshold (lb/day)</b>	<b>SSPE2 (lb/yr)</b>	<b>BACT Triggered?</b>
<b>NO<sub>x</sub></b>	199.8	> 2.0	n/a	<b>Yes</b>
<b>SO<sub>x</sub></b>	0.2	> 2.0	n/a	<b>No</b>
<b>PM<sub>10</sub></b>	6.5	> 2.0	n/a	<b>Yes</b>
<b>CO</b>	112.9	> 2.0 and SSPE2 ≥ 200,000 lb/yr	25,256	<b>No</b>
<b>VOC</b>	8.7	> 2.0	n/a	<b>Yes</b>

As shown above, BACT will be triggered for NO<sub>x</sub>, PM<sub>10</sub>, and VOC emissions from the engines for this project.

## 2. BACT Guideline

BACT Guideline 3.1.1, which appears in Appendix B of this report, covers diesel-fired emergency IC engines.

## 3. Top Down BACT Analysis

Per District Policy APR 1305, Section IX, "A top-down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District's NSR Rule for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

Pursuant to the attached Top-Down BACT Analysis, which appears in Appendix B of this report, BACT is satisfied with:

- NO<sub>x</sub>: Latest EPA Tier Certification level for applicable horsepower range
- VOC: Latest EPA Tier Certification level for applicable horsepower range
- PM<sub>10</sub>: 0.15 g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)

The applicant is proposing to install the Tier 2 engines. Although the EPA Tier 4I engine standard took effect on January 1, 2011, the applicant stated that availability of those units was limited when these units were purchased in January, 2011. According to 40 CFR Part 60, Section 60.4208, EPA allows engines produced in prior years to be installed up to two years after the date that a new Tier standard became effective so Tier 2 engines, of this size, could be installed until December 31, 2012. Current District policy is to allow the previous Tier engines to be installed if a current Tier engine is not reasonably available. The District agrees that, at time of purchase the Tier 4I engines were not reasonably available and the proposed Tier 2 engines are approved as meeting the BACT standard.

The following condition will be listed on the ATCs to ensure compliance with the PM<sub>10</sub> BACT emissions limit:

- Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]

Therefore, compliance with the BACT requirements is expected.

**B. Offsets**

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

**C. Public Notification**

**1. Applicability**

Public noticing is required for:

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

As discussed in Section VII.C.5 previously, the facility is not a Major Source.

- b. Major Modifications

As shown in Section VII.C.7, this project is not a Major Modification.

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

***As calculated in Section VII.C.2, daily emissions for NO<sub>x</sub> and CO are greater than 100 lb/day.***

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

As shown in the table below, the SSPE2 is less than the offset threshold so offsets are not required.

<b>Offset Threshold Comparison</b>					
	<b>NO<sub>x</sub> (lb/yr)</b>	<b>SO<sub>x</sub> (lb/yr)</b>	<b>PM<sub>10</sub> (lb/yr)</b>	<b>CO (lb/yr)</b>	<b>VOC (lb/yr)</b>
<b>SSPE2 Total</b>	8,901	5,118	2,615	25,256	2,023
<b>Offset Threshold</b>	20,000	54,750	29,200	200,000	20,000
<b>Offsets Triggered? (SSPE2 &gt; Threshold?)</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

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

As shown in the table below, the SSIPE is negative for all pollutants so it is below the public notice threshold and offsets are not triggered for SSIPE purposes.

<b>Offset Threshold Comparison</b>					
	<b>NO<sub>x</sub> (lb/yr)</b>	<b>SO<sub>x</sub> (lb/yr)</b>	<b>PM<sub>10</sub> (lb/yr)</b>	<b>CO (lb/yr)</b>	<b>VOC (lb/yr)</b>
<b>SSPE2 Total</b>	8,901	5,118	2,615	25,256	2,023
<b>SSPE1 Total</b>	8,969	5,119	2,621	25,364	2,032
<b>SSIPE (SSPE2 – SSPE1)</b>	-68	-1	-6	-108	-9

## 2. Public Notice Action

As demonstrated in Section VIII.C.1.c. above, this project will require public noticing since it includes new units with a PE greater than 100 lb/day of NO<sub>x</sub> and CO. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATCs for this equipment.

## D. Daily Emissions Limits

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Sections 5.7.2 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.16.1 and 3.16.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. Therefore, the following conditions will be listed on the ATCs to ensure compliance:

- Emissions from this IC engine shall not exceed any of the following limits: 4.6 g-NO<sub>x</sub>/bhp-hr, 2.6 g-CO/bhp-hr, or 0.2 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart III]
- Emissions from this IC engine shall not exceed 0.15 g-PM<sub>10</sub>/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart III]
- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, and 40 CFR Part 60 Subpart III]

## **E. Compliance Assurance**

### **1. Source Testing**

Pursuant to District Policy APR 1705, source testing is not required for emergency standby IC engines to demonstrate compliance with Rule 2201.

### **2. Monitoring**

No monitoring is required to demonstrate compliance with Rule 2201.

### **3. Recordkeeping**

Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

### **4. Reporting**

No reporting is required to ensure compliance with Rule 2201.

## **F. Ambient Air Quality Analysis (AAQA)**

Section 4.14.1 of this rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted a Risk Management Review (RMR).

As shown by the RMR summary sheet in Appendix D, intermittent use equipment can be exempted by the reviewing agency from inclusion in an analysis. The limited hours of operation of the proposed equipment is less than the EPA requirements so the units are exempt from CAAQS/NAAQS analysis.

### **Rule 2520 Federally Mandated Operating Permits**

As discussed in Section VII.C.5 previously, the facility is not a Major Source for any criteria pollutant; therefore, Rule 2520 does not apply.

### **Rule 4001 New Source Performance Standards (NSPS)**

#### **40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

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

<b>40 CFR 60 Subpart III Requirements for New Emergency IC Engines Powering Generators (2007 and Later Model Year)</b>	<b>Proposed Method of Compliance with 40 CFR 60 Subpart III Requirements</b>
<p>Engine(s) must meet the appropriate Subpart III emission standards for new engines, based on the model year, size, and number of liters per cylinder.</p>	<p>The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range, guaranteeing compliance with the emission standards of Subpart III.</p>
<p>Engine(s) must be fired on 500 ppm sulfur content fuel or less, and fuel with a minimum centane index of 40 or a maximum aromatic content of 35 percent by volume. Starting in October 1, 2010, the maximum allowable sulfur fuel content will be lowered to 15 ppm.</p>	<p>The applicant has proposed the use of CARB certified diesel fuel, which meets all of the fuel requirements listed in Subpart III. A permit condition enforcing this requirement was included earlier in this evaluation.</p>
<p>The operator/owner must install a non-resettable hour meter prior to startup of the engine(s).</p>	<p>The applicant has proposed to install a non-resettable hour meter. The following condition will be included on the permit:</p> <ul style="list-style-type: none"> <li>• This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart III]</li> </ul>
<p>Emergency engine(s) may be operated for the purpose of maintenance and testing up to 100 hours per year. There is no limit on emergency use.</p>	<p>The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year. Current permit conditions limit such usage to 40 hours per year. The following condition will be included on the permit:</p> <ul style="list-style-type: none"> <li>• 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 regulatory purposes shall not exceed 40 hours per calendar year. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart III]</li> </ul>
<p>The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.</p>	<p>The following condition will be included on the permit:</p> <ul style="list-style-type: none"> <li>• This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart III]</li> </ul>

## **Rule 4002 National Emission Standards for Hazardous Air Pollutants**

### **40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Emissions (RICE)**

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

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

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

These are new engines located as an area source of HAPS, but, as shown above, the proposed engines will be in compliance with 40 CFR 60 Subpart IIII.

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

The proposed engines are expected to comply with 40 CFR 63 Subpart ZZZZ.

## **Rule 4101 Visible Emissions**

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]



**Rule 4102 Nuisance**

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

**California Health & Safety Code 41700 (Health Risk Assessment)**

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources (dated 3/2/01) specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite. Therefore, a risk management review (RMR) was performed for this project. The RMR results are summarized in the following table, and can be seen in detail in Appendix D.

	<b>RMR Results</b>			
Unit	C-1336-18-0	C-1336-19-0	C-1336-20-0	C-1336-21-0
Prioritization Score	N/A	N/A	N/A	N/A
Acute Hazard Index	N/A	N/A	N/A	N/A
Chronic Hazard Index	N/A	N/A	N/A	N/A
Cancer Risk	1.09 in a million	1.09 in a million	1.09 in a million	1.09 in a million
T-BACT Required?	Yes	Yes	Yes	Yes

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

Based on the RMR, the project triggers T-BACT requirements. The pollutant of concern is a particulate so BACT for PM-10 is considered to satisfy T-BACT. BACT Guideline 3.1.1, which appears in Appendix B of this report, lists BACT for PM-10 as

“0.15 g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent.”

Since the Tier standard for PM-10 is equal to 0.15 g/bhp-hr, the following conditions will be listed on the ATCs to ensure compliance with T-BACT and the RMR:

- Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, 40 CFR Part 60 Subpart III]
- {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]
- 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 40 hours per calendar year. [District Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart III]
- Permits C-1336-13-0, -14-0, -15-0, -16-0, and -17-0 shall be cancelled upon implementation of this Authority to Construct. [District Rule 2201]

Therefore, compliance with CH&SC 41700 is expected..

#### **Rule 4201 Particulate Matter Concentration**

Rule 4201 limits particulate matter emissions from any single source operation to 0.1 g/dscf, which, as calculated below, is equivalent to a PM<sub>10</sub> emission factor of 0.4 g-PM<sub>10</sub>/bhp-hr.

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

As indicated in section VII.B, the new engines have a certified PM<sub>10</sub> emission factor of 0.15 g/bhp-hr which is less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATCs:

- {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 7.5.2.3 of District Rule 4702, as of June 1, 2006 District Rule 4701 is no longer applicable to diesel-fired emergency standby or emergency IC engines. Therefore, the proposed emergency internal combustion engine(s) will comply with the requirements of District Rule 4702 and no further discussion of Rule 4701 is required.

#### **Rule 4702 Internal Combustion Engines – Phase 2**

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

<b>District Rule 4702 Requirements Emergency Standby IC Engines</b>	<b>Proposed Method of Compliance with District Rule 4702 Requirements</b>
<p>Operation of emergency standby engines is limited to 100 hours or less per calendar year for non-emergency purposes, verified through the use of a non-resettable elapsed operating time meter.</p>	<p>The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year. Also, the permit will limit non-emergency operation to 40 hours/year. A permit condition enforcing this requirement was shown earlier in the evaluation.</p>
<p>Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract.</p>	<p>The following conditions will be included on the permit:</p> <ul style="list-style-type: none"> <li>• {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]</li> <li>• {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]</li> </ul>
<p>The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.</p>	<p>A permit condition enforcing this requirement was shown earlier in the evaluation.</p>
<p>The owner/operator must monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.</p>	<p>The following condition will be included on the permit:</p> <ul style="list-style-type: none"> <li>• {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]</li> </ul>

<p>Records of the total hours of operation of the emergency standby engine, type of fuel used, purpose for operating the engine, all hours of non-emergency and emergency operation, and support documentation must be maintained. All records shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request.</p>	<p>The following conditions will be included on the permit:</p> <ul style="list-style-type: none"> <li>• {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]</li> <li>• The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]</li> <li>• {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]</li> </ul>
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### 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:

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

Where,

n = moles SO<sub>2</sub>

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

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

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

Since 1.0 ppmv is ≤ 2,000 ppmv, these engines are expected to comply with Rule 4801. Therefore, the following condition will be listed on the ATCs to ensure compliance:

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

**California Health & Safety Code 42301.6 (School Notice)**

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

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

The following table demonstrates how the proposed engines will comply with the requirements of Title 17 CCR Section 93115.

<p><b>Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</b></p>	<p><b>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</b></p>
<p>Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.</p>	<p>The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, was included earlier in this evaluation.</p>
<p>The engine(s) must emit diesel PM at a rate less than or equal to 0.15 g/bhp-hr or must meet the diesel PM standard, as specified in the Off-road compression ignition standards for off-road engines with the same maximum rated power (Title 13 CCR, Section 2423).</p>	<p>The applicant has proposed the use of engines that are certified to the latest EPA Tier Certification level for the applicable horsepower range, guaranteeing compliance with the emission standards of Subpart IIII. Additionally, the proposed diesel PM emissions rate is less than or equal to 0.15 g/bhp-hr.</p>
<p>The engine may not be operated more than 50 hours per year for maintenance and testing purposes.</p>	<p>The following condition will be included on the permits:</p> <ul style="list-style-type: none"> <li>• 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 40 hours per calendar year. [District Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]</li> </ul>
<p>New stationary emergency standby diesel-fueled CI engines (&gt; 50 bhp) must meet the standards for off-road engines of the same model year and maximum rated power as specified in the Off-Road Compression Ignition Engine Standards (title 13, CCR, section 2423).</p>	<p>The applicant has proposed the use of engines that are certified to the latest EPA Tier Certification level for the applicable horsepower range.</p>

<p>Engines, with a PM10 emissions rate greater than 0.01 g/bhp-hr and located at schools, may not be operated for maintenance and testing whenever there is a school sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM</p>	<p>The District has verified that the engines are not located within 500' of a school.</p>
<p>An owner or operator shall maintain monthly records of the following: emergency use hours of operation; maintenance and testing hours of operation; hours of operation for emission testing; initial start-up testing hours; hours of operation for all other uses; and the type of fuel used. All records shall be retained for a minimum of 36 months.</p>	<p>Permit conditions enforcing these requirements were shown earlier in the evaluation.</p>

**California Environmental Quality Act (CEQA)**

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001.

The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

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

procedures to be followed when processing permits for projects that are exempt under CEQA.

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

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

#### **IX. Recommendation**

Pending a successful NSR Public Noticing period, issue Authorities to Construct C-1336-18-0, -19-0, -20-0, and -21-0 subject to the permit conditions on the attached draft Authorities to Construct in Appendix A.

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

<b>Billing Schedule</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Fee Amount</b>
C-1336-18-0	3020-10-G	821 bhp IC engine	\$815.00
C-1336-19-0	3020-10-G	821 bhp IC engine	\$815.00
C-1336-20-0	3020-10-G	821 bhp IC engine	\$815.00
C-1336-21-0	3020-10-G	821 bhp IC engine	\$815.00

#### **Appendixes**

- A. Draft ATCs
- B. BACT Guideline and BACT Analysis
- C. Emissions Data
- D. HRA Summary and AAQA
- E. QNEC Calculations
- F. SSPE1 and SSPE2 Calculations

Appendix A

Draft ATCs



San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-1336-18-0

**LEGAL OWNER OR OPERATOR:** VA MEDICAL CENTER  
**MAILING ADDRESS:** 2615 E CLINTON AVE  
FRESNO, CA 93703-2286

**LOCATION:** 2615 E CLINTON AVE  
FRESNO, CA 93703-2286

**EQUIPMENT DESCRIPTION:**

INSTALL A NEW 821 BHP (INTERMITTENT) MTU/DETROIT DIESEL 1600, 12V1600G70S TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN 550KW ELECTRICAL GENERATOR.

**CONDITIONS**

1. Permits C-1336-13-0, -14-0, -15-0, -16-0, and -17-0 shall be cancelled upon implementation of Authorities to Construct C-1336-18-0, -19-0, -20-0, and -21-0. [District Rule 2201]
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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {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]
6. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart III]
7. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, 40 CFR Part 60 Subpart III]
8. Emissions from this IC engine shall not exceed any of the following limits: 4.6 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.2 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart III]
9. Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart III]

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

**DRAFT**

DAVID WARNER, Director of Permit Services

C-1336-18-0: Aug 30 2011 2:17PM - HEINENG : Joint Inspection NOT Required

10. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart III]
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. {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]
13. {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]
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. 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 40 hours per calendar year. [District Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart III]
16. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
17. {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-1336-19-0

**LEGAL OWNER OR OPERATOR:** VA MEDICAL CENTER  
**MAILING ADDRESS:** 2615 E CLINTON AVE  
FRESNO, CA 93703-2286

**LOCATION:** 2615 E CLINTON AVE  
FRESNO, CA 93703-2286

**EQUIPMENT DESCRIPTION:**  
821 BHP (INTERMITTENT) MTU 12V1600G70S TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC  
ENGINE POWERING AN ELECTRICAL GENERATOR

**CONDITIONS**

1. Permits C-1336-13-0, -14-0, -15-0, -16-0, and -17-0 shall be cancelled upon implementation of Authorities to Construct C-1336-18-0, -19-0, -20-0, and -21-0. [District Rule 2201]
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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {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]
6. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart III]
7. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, 40 CFR Part 60 Subpart III]
8. Emissions from this IC engine shall not exceed any of the following limits: 4.6 g-NO<sub>x</sub>/bhp-hr, 2.6 g-CO/bhp-hr, or 0.2 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart III]
9. Emissions from this IC engine shall not exceed 0.15 g-PM<sub>10</sub>/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart III]

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-1336-19-0 : Aug 30 2011 2:17PM - HEINENG : Joint Inspection NOT Required

10. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart III]
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. {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]
13. {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]
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. 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 40 hours per calendar year. [District Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart III]
16. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
17. {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-1336-20-0

**LEGAL OWNER OR OPERATOR:** VA MEDICAL CENTER  
**MAILING ADDRESS:** 2615 E CLINTON AVE  
FRESNO, CA 93703-2286

**LOCATION:** 2615 E CLINTON AVE  
FRESNO, CA 93703-2286

**EQUIPMENT DESCRIPTION:**  
821 BHP (INTERMITTENT) MTU 12V1600G70S TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

**CONDITIONS**

1. Permits C-1336-13-0, -14-0, -15-0, -16-0, and -17-0 shall be cancelled upon implementation of Authorities to Construct C-1336-18-0, -19-0, -20-0, and -21-0. [District Rule 2201]
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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {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]
6. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart III]
7. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, 40 CFR Part 60 Subpart III]
8. Emissions from this IC engine shall not exceed any of the following limits: 4.6 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.2 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart III]
9. Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart III]

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

**DRAFT**

DAVID WARNER, Director of Permit Services  
C-1336-20-0: Aug 30 2011 2:17PM - HEINENG : Joint Inspection NOT Required

10. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart III]
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. {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]
13. {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]
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. 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 40 hours per calendar year. [District Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart III]
16. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
17. {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-1336-21-0

**LEGAL OWNER OR OPERATOR:** VA MEDICAL CENTER  
**MAILING ADDRESS:** 2615 E CLINTON AVE  
FRESNO, CA 93703-2286

**LOCATION:** 2615 E CLINTON AVE  
FRESNO, CA 93703-2286

**EQUIPMENT DESCRIPTION:**  
821 BHP (INTERMITTENT) MTU 12V1600G70S TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

**CONDITIONS**

1. Permits C-1336-13-0, -14-0, -15-0, -16-0, and -17-0 shall be cancelled upon implementation of Authorities to Construct C-1336-18-0, -19-0, -20-0, and -21-0. [District Rule 2201]
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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {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]
6. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart III]
7. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, 40 CFR Part 60 Subpart III]
8. Emissions from this IC engine shall not exceed any of the following limits: 4.6 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.2 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart III]
9. Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart III]

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

**DRAFT**

DAVID WARNER, Director of Permit Services  
C-1336-21-0 : Aug 30 2011 2:17PM - HEINENG : Joint Inspection NOT Required

10. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart III]
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. {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]
13. {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]
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. 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 40 hours per calendar year. [District Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart III]
16. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
17. {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

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## Appendix B

### BACT Guideline and BACT Analysis

# San Joaquin Valley Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 3.1.1**  
**Last Update: 7/10/2009**  
**Emergency Diesel IC Engine**

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	Latest EPA Tier Certification level for applicable horsepower range		
NOX	Latest EPA Tier Certification level for applicable horsepower range		
PM10	0.15 g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)		
SOX	Very low sulfur diesel fuel (15 ppmw sulfur or less)		
VOC	Latest EPA Tier Certification level for applicable horsepower range		

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

# Top Down BACT Analysis for the Emergency IC Engines

## 1. BACT Analysis for NO<sub>x</sub>, VOC, and PM<sub>10</sub> Emissions:

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

The SJVUAPCD BACT Clearinghouse guideline 3.1.1 identifies achieved in practice BACT for emissions from emergency diesel IC engines as follows:

Pollutant	Achieved in Practice
NO <sub>x</sub> , VOC	Latest EPA Tier Certification level for applicable horsepower range
PM <sub>10</sub>	0.15 g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)

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

No ranking needs to be done because only one control option is listed in Step 1.

### d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control option listed for each pollutant. Therefore, a cost effectiveness analysis is not required.

### e. Step 5 - Select BACT

BACT for NO<sub>x</sub>, VOC emissions from these emergency standby diesel IC engines are the latest EPA Tier Certification level for the applicable horsepower range. The applicant is proposing to install the Tier 2 engines. Although the EPA Tier 4I engine standard took effect on January 1, 2011, the applicant stated that availability of those units was limited when these units were purchased in January, 2011. According to 40 CFR Part 60, Section 60.4208, EPA allows engines produced in prior years to be installed up to two years after the date that a new Tier standard became effective so Tier 2 engines, of this size, could be installed until December 31, 2012. Current District policy is to allow the previous Tier engines to be installed if a current Tier engine is not reasonably available. The District agrees that, at time of purchase the Tier 4I engines were not reasonably available and the proposed Tier 2 engines are approved as meeting the BACT standard.

BACT for PM10 is 0.15 g/hp-hr, or the latest EPA Tier Certification level for the applicable horsepower range, whichever is more stringent. The applicant is proposing engines that meet this requirement.

Therefore, compliance with the BACT requirements is expected.

**Title 13 CCR 2423**  
(December 2005)

**Tier Certification & Exhaust Emission Standards**  
(grams per brake horsepower-hour)

Power Rating (hp)	Tier	Model Year	NO <sub>x</sub>	HC	NMHC +NO <sub>x</sub>	CO	PM
50 ≤ hp < 75	1	1998 – 2003	6.9	-	-	-	-
	2	2004 - 2007	-		5.6		
	3	2008 - 2011			3.5		
	4*	2008 – 2012 (Interim)			3.5	3.7	
75 ≤ hp < 100	1	1998 – 2003	6.9	-	-	-	-
	2	2004 – 2007	-		5.6		
	3	2008 – 2011			3.5	0.3	
100 ≤ hp < 175	1	1997 – 2002	6.9	-	-	-	-
	2	2003 – 2006	-		4.9		
	3	2007 – 2011			3.0	0.22	
175 ≤ hp < 300	1	1996 – 2002	6.9	1.0	-	8.5	0.4
	2	2003 – 2005	-	-	4.9	2.6	0.15
	3	2006 - 2010			3.0		
300 ≤ hp < 600	1	1996 – 2000	6.9	1.0	-	8.5	0.4
	2	2001 – 2005	-	-	4.8	2.6	0.15
	3	2006 – 2010			3.0		
600 ≤ hp ≤ 750	1	1996 – 2001	6.9	1.0	-	8.5	0.4
	2	2002 – 2005	-	-	4.8	2.6	0.15
	3	2006 – 2010			3.0		
> 750	1	2000 – 2005	6.9	1.0	-	8.5	0.4
	2	2006 – 2010	-	-	4.8	2.6	0.15

\* Manufacturers may optionally certify engine families to the interim Tier 4 for this power category through 2012.

## Appendix C

### Emissions Data Sheet

Permit #: C-1336-18-0	<b>Last Updated</b>
Facility: VA MEDICAL CENTER	08/30/2011 HEINENG

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	333.0	0.0	11.0	188.0	14.0
Daily Emis. Limit (lb/Day)	199.8	0.2	6.5	112.9	8.7
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	83.0	0.0	3.0	47.0	3.0
Q2:	83.0	0.0	3.0	47.0	4.0
Q3:	83.0	0.0	3.0	47.0	3.0
Q4:	84.0	0.0	2.0	47.0	4.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: C-1336-19-0	<b>Last Updated</b>
Facility: VA MEDICAL CENTER	08/30/2011 HEINENG

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	333.0	0.0	11.0	188.0	14.0
Daily Emis. Limit (lb/Day)	199.8	0.2	6.5	112.9	8.7
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	83.0	0.0	3.0	47.0	3.0
Q2:	83.0	0.0	3.0	47.0	4.0
Q3:	83.0	0.0	3.0	47.0	3.0
Q4:	84.0	0.0	2.0	47.0	4.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					



Permit #: C-1336-20-0	Last Updated
Facility: VA MEDICAL CENTER	08/30/2011 HEINENG

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	333.0	0.0	11.0	188.0	14.0
Daily Emis. Limit (lb/Day)	199.8	0.2	6.5	112.9	8.7
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	83.0	0.0	3.0	47.0	3.0
Q2:	83.0	0.0	3.0	47.0	4.0
Q3:	83.0	0.0	3.0	47.0	3.0
Q4:	84.0	0.0	2.0	47.0	4.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: C-1336-21-0	<b>Last Updated</b>
Facility: VA MEDICAL CENTER	08/30/2011 HEINENG

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	333.0	0.0	11.0	188.0	14.0
Daily Emis. Limit (lb/Day)	199.8	0.2	6.5	112.9	8.7
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	83.0	0.0	3.0	47.0	3.0
Q2:	83.0	0.0	3.0	47.0	4.0
Q3:	83.0	0.0	3.0	47.0	3.0
Q4:	84.0	0.0	2.0	47.0	4.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

## Appendix D

### HRA Summary and AAQA

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: George Heinen – Permit Services  
 From: Cheryl Lawler – Technical Services  
 Date: August 9, 2011  
 Facility Name: VA Medical Hospital  
 Location: 2615 E. Clinton Avenue, Fresno  
 Application #(s): C-1336-18-0, 19-0, 20-0, 21-0  
 Project #: C-1112189

## A. RMR SUMMARY

RMR Summary						
Categories	Emergency Diesel ICE (Unit 18-0)	Emergency Diesel ICE (Unit 19-0)	Emergency Diesel ICE (Unit 20-0)	Emergency Diesel ICE (Unit 21-0)	Project Totals	Facility Totals
Prioritization Score	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	>1	>1
Acute Hazard Index	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A	N/A
Chronic Hazard Index	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A	N/A
Maximum Individual Cancer Risk	1.09E-06	1.09E-06	1.09E-06	1.09E-06	4.36E-06	4.36E-06
T-BACT Required?	Yes-PM10	Yes-PM10	Yes-PM10	Yes-PM10		
Special Permit Conditions?	Yes	Yes	Yes	Yes		

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

### Proposed Permit Conditions

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

#### Units 18-0, 19-0, 20-0, 21-0

1. Modified {1901} The PM10 emissions rate shall not exceed **0.15 g/hp-hr** based on US EPA certification using ISO 8178 test procedure. [District Rule 2201]
2. {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] N
3. Modified {1344} The engine shall be operated only for maintenance, testing, and required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed **40 hours** per year. [District NSR Rule and District Rule 4701] N

## B. RMR REPORT

### I. Project Description

Technical Services received a request on July 12, 2011, to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the installation of four identical new 821 bhp diesel-fired emergency standby internal combustion engines, each driving a 550 kW generator. Five existing transportable engines will be removed when these units are installed (Units 13-0, 14-0, 15-0, 16-0, & 17-0).

### II. Analysis

Technical Services performed screening level health risk assessments using the District's Diesel Exhaust Risk Screening spreadsheet.

The following parameters were used for the review:

Analysis Parameters Units 18-0, 19-0, 20-0, 21-0						
Unit #	bhp-hr	PM <sub>10</sub> g/hp-hr	Receptor (m)	Quad	Hours/Year	Load%
18-0, 19-0, 20-0, 21-0	821	0.15	30.48	4	40	100
Location Type		Urban BD		Receptor Type		Residents & Patients

Although this project triggers a public notice, an AAQA was not performed. Based on EPA's clarification memoranda for NO<sub>2</sub> & SO<sub>2</sub>, dated March 1, 2011, intermittent use equipment can be exempted by the reviewing agency from inclusion in analyses. The District has interpreted EPA's guidance to extend to all modeling periods for which there is a CAAQS/NAAQS. Since the number of hours allowed by the District for emergency and intermittent use equipment is less than the levels imposed by EPA, these units will be exempted from CAAQS/NAAQS analyses. Therefore, an AAQA will not be performed and no further discussion is required.

### III. Conclusion

The cancer risk associated with the operation of each proposed emergency diesel IC engine is **1.09E-06**, which is greater than the 1 in a million threshold. In accordance with the District's Risk Management Policy, each engine is approved **with** Toxic Best Available Control Technology (T-BACT).

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

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

**Appendix E**  
**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:

$$\text{QNEC} = \text{PE2} - \text{PE1},$$

where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr

PE2 = Post-Project Potential to Emit for each emissions unit, lb/qtr

PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr

Since these are new emissions units, PE1 = 0 for all pollutants.

Thus,

$$\text{QNEC} = \text{PE2 (lb/qtr)}$$

Using the PE2 (lb/yr) values calculated in Section VII.C.2, Quarterly PE2 is calculated as follows:

$$\text{PE2}_{\text{quarterly}} = \text{PE2 (lb/yr)} \div 4 \text{ quarters/year} = \text{QNEC}$$

QNEC					
Pollutant	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
PE2 Total (lb/yr)	333	0	11	188	14
1 <sup>st</sup> Quarter PE2 (lb/qtr)	83	0	3	47	3
2 <sup>nd</sup> Quarter PE2 (lb/qtr)	83	0	3	47	4
3 <sup>rd</sup> Quarter PE2 (lb/qtr)	83	0	3	47	3
4 <sup>th</sup> Quarter PE2 (lb/qtr)	84	0	2	47	4

Since each unit is identical, the QNEC is the same for each unit.

## Appendix F

### SSPE1 and SSPE2 Calculations



<b>Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)</b>					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
C-1336-1-2	2,523	1,706	857	8,168	607
C-1336-2-2	2,523	1,706	857	8,168	607
C-1336-3-2	2,523	1,706	857	8,168	607
C-1336-11-0	0	0	0	0	73
C-1336-12-0	0	0	0	0	73
C-1336-13-0	604	1	20	342	26
C-1336-14-0	306	0	10	173	13
C-1336-15-0	306	0	10	173	13
C-1336-16-0	131	0	7	122	9
C-1336-17-0	53	0	3	50	4
Pre-project SSPE (SSPE2)	8,969	5,119	2,621	25,364	2,032

The Post-Project Stationary Source Potential to Emit is calculated assuming that the PTO for the five transportable engines will be cancelled upon implementation of the ATCs for the project engines. A condition is included on the permit to require the cancellation.

<b>Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)</b>					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
C-1336-1-2	2,523	1,706	857	8,168	607
C-1336-2-2	2,523	1,706	857	8,168	607
C-1336-3-2	2,523	1,706	857	8,168	607
C-1336-11-0	0	0	0	0	73
C-1336-12-0	0	0	0	0	73
C-1336-18-0	333	0	11	188	14
C-1336-19-0	333	0	11	188	14
C-1336-20-0	333	0	11	188	14
C-1336-21-0	333	0	11	188	14
Post-project SSPE (SSPE2)	8,901	5,118	2,615	25,256	2,023