



FEB 08 2011

Ashby Lawson  
Power Plus  
950 F St  
West Sacramento CA 95605

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Project Number: C-1110062**

Dear Mr. Lawson:

Enclosed for your review and comment is the District's analysis of Power Plus's application for an Authority to Construct for five diesel-fired emergency standby internal combustion engines, at 2615 E Clinton Ave, Fresno.

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. Juscelino Siongco of Permit Services at (559) 230-5891.

Sincerely,

David Warner  
Director of Permit Services

DW:jms

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  
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**Southern Region**  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585



FEB 08 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-1110062**

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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 Power Plus for five diesel-fired emergency standby internal combustion engines, at 2615 E Clinton Ave, Fresno.

The analysis of the regulatory basis for this proposed action, Project #C-1110062, 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:	February 3, 2011
Mailing Address:	950 F St West Sacramento CA 95605	Engineer:	Juscelino Siongco
Contact Person:	Ashby Lawson	Lead Engineer:	Martin Keast
Telephone:	(916) 416-8767		
Application #:	C-1336-13-0, -14-0, -15-0, -16-0, and -17-0		
Project #:	C-1110062		
Complete:	January 24, 2011		

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**I. Proposal**

VA Medical Center is proposing to install five diesel-fired emergency standby internal combustion (IC) engines powering an electrical generator. The five new emergency standby IC engines will replace five existing emergency standby IC engines that are currently permitted under permits to operate (PTOs) #C-1336-4-0, -5-0, -6-0, -8-0, and -9-0. Each existing permit will be cancelled upon implementation of each replacement IC engine's authority to construct (ATC).

**II. Applicable Rules**

Rule 2201 New and Modified Stationary Source Review Rule (12/18/08)  
Rule 2520 Federally Mandated Operating Permits (6/21/01)  
Rule 4001 New Source Performance Standards (4/14/99)  
Rule 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-1336-13-0:** 1490 BHP CUMMINS MODEL QST30-G5 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR
- C-1336-14-0:** 755 BHP CUMMINS MODEL QSX15-G9 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR
- C-1336-15-0:** 755 BHP CUMMINS MODEL QSX15-G9 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR
- C-1336-16-0:** 532 BHP ISUZU MODEL 6WG1X TIER 3 CERTIFIED DIESEL-FIRE EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR
- C-1336-17-0:** 216 BHP JOHN DEERE MODEL 6068HF285 TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

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

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

The proposed engine(s) meet the latest Tier Certification requirements; therefore, the engine(s) meets 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 and/or the ARB/EPA executive order).

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
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)

The engine has certified NO<sub>x</sub> + VOC emissions of 4.8 g/bhp-hr for the three engines with >750 bhp and 3.0 g/bhp-hr for the other two remaining engines. 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).

### B. Emission Factors

C-1336-13-0, -14-0, and -15-0

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

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

C-1336-16-0, and -17-0

Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO <sub>x</sub>	2.8	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

$$\frac{0.000015 \text{ lb} - S}{\text{lb} - \text{fuel}} \times \frac{7.1 \text{ lb} - \text{fuel}}{\text{gallon}} \times \frac{2 \text{ lb} - SO_2}{1 \text{ lb} - S} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp} - \text{hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0051 \frac{\text{g} - SO_x}{\text{bhp} - \text{hr}}$$

**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-1336-13-0

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	1490	24	40	362.6	604
SO <sub>x</sub>	0.0051	1490	24	40	0.4	1
PM <sub>10</sub>	0.15	1490	24	40	11.8	20
CO	2.60	1490	24	40	205.0	342
VOC	0.20	1490	24	40	15.8	26

C-1336-14-0 and -15-0

<b>Pollutant</b>	<b>Emissions Factor (g/bhp-hr)</b>	<b>Rating (bhp)</b>	<b>Daily Hours of Operation (hrs/day)</b>	<b>Annual Hours of Operation (hrs/yr)</b>	<b>Daily PE2 (lb/day)</b>	<b>Annual PE2 (lb/yr)</b>
NO <sub>x</sub>	4.60	755	24	40	183.8	306
SO <sub>x</sub>	0.0051	755	24	40	0.2	0
PM <sub>10</sub>	0.15	755	24	40	6.0	10
CO	2.60	755	24	40	103.9	173
VOC	0.20	755	24	40	8.0	13

C-1336-16-0

<b>Pollutant</b>	<b>Emissions Factor (g/bhp-hr)</b>	<b>Rating (bhp)</b>	<b>Daily Hours of Operation (hrs/day)</b>	<b>Annual Hours of Operation (hrs/yr)</b>	<b>Daily PE2 (lb/day)</b>	<b>Annual PE2 (lb/yr)</b>
NO <sub>x</sub>	2.80	532	24	40	78.8	131
SO <sub>x</sub>	0.0051	532	24	40	0.1	0
PM <sub>10</sub>	0.15	532	24	40	4.2	7
CO	2.60	532	24	40	73.2	122
VOC	0.20	532	24	40	5.6	9

C-1336-17-0

<b>Pollutant</b>	<b>Emissions Factor (g/bhp-hr)</b>	<b>Rating (bhp)</b>	<b>Daily Hours of Operation (hrs/day)</b>	<b>Annual Hours of Operation (hrs/yr)</b>	<b>Daily PE2 (lb/day)</b>	<b>Annual PE2 (lb/yr)</b>
NO <sub>x</sub>	2.80	216	24	40	32.0	53
SO <sub>x</sub>	0.0051	216	24	40	0.1	0
PM <sub>10</sub>	0.15	216	24	40	1.7	3
CO	2.60	216	24	40	29.7	50
VOC	0.20	216	24	40	2.3	4



### 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)
<b>SSPE1 Total</b>	10,398	5,119	2,682	25,345	2,279

### 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)
<b>SSPE2 Total</b>	8,969	5,119	2,621	25,364	2,032
<b>Offset Threshold</b>	<b>20,000</b>	<b>54,750</b>	<b>29,200</b>	<b>200,000</b>	<b>20,000</b>
<b>Offset Threshold Surpassed?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</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>	10,398	8,969	20,000	No	No
SO <sub>x</sub>	5,119	5119	140,000	No	No
PM <sub>10</sub>	2,682	2,621	140,000	No	No
CO	25,345	25,364	200,000	No	No
VOC	2,279	2,032	20,000	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 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 a new emergency standby IC engine. 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 the new engine are compared to the BACT threshold levels in the following table:

C-1336-13-0

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -13-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	362.6	> 2.0	n/a	Yes
SO <sub>x</sub>	0.4	> 2.0	n/a	No
PM <sub>10</sub>	11.8	> 2.0	n/a	Yes
CO	205	> 2.0 and SSPE2 ≥ 200,000 lb/yr	342	No
VOC	15	> 2.0	n/a	Yes

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

C-1336-14-0 and -15-0

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -14-0 and -15-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	183.8	> 2.0	n/a	Yes
SO <sub>x</sub>	0.2	> 2.0	n/a	No
PM <sub>10</sub>	6	> 2.0	n/a	Yes
CO	103.9	> 2.0 and SSPE2 ≥ 200,000 lb/yr	342	No
VOC	8	> 2.0	n/a	Yes

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

C-1336-16-0

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -16-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	78.8	> 2.0	n/a	Yes
SO <sub>x</sub>	0.1	> 2.0	n/a	No
PM <sub>10</sub>	4.2	> 2.0	n/a	Yes
CO	73.2	> 2.0 and SSPE2 ≥ 200,000 lb/yr	342	No
VOC	5.6	> 2.0	n/a	Yes

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

C-1336-17-0

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -17-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	32.0	> 2.0	n/a	Yes
SO <sub>x</sub>	0.1	> 2.0	n/a	No
PM <sub>10</sub>	1.7	> 2.0	n/a	No
CO	29.7	> 2.0 and SSPE2 ≥ 200,000 lb/yr	342	No
VOC	2.3	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO<sub>x</sub>, and VOC emissions from this engine 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 following condition will be listed on the ATC 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 III]

## **B. Offsets**

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

## **C. Public Notification**

### **1. Applicability**

Public noticing is required for:

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

As shown in Section VII.C.6, this facility is not a new 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 Section VII.C.4, an offset threshold will not be surpassed.

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

For this project, the proposed engine is the only emissions source that will generate an increase in Potential to Emit. Since the proposed engine emissions are well below 20,000 lb/year for all pollutants (See Section VII.C.2), the SSIPE for this project will be below the public notice threshold.

### **2. Public Notice Action**

As demonstrated above, this project will require public noticing. 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 Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. Therefore, the following conditions will be listed on the ATC to ensure compliance:

### C-1336-13-0, -14-0, and -15-0

- 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]
- 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]
- 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]

### C-1336-16-0 and -17-0

- Emissions from this IC engine shall not exceed any of the following limits: 2.8 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]
- 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]
- 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 the required analysis.

As shown by the AAQA summary sheet in Appendix D, the proposed equipment will not cause or make worse a violation of an air quality standard for NO<sub>x</sub>, CO, PM<sub>10</sub>, or SO<sub>x</sub>.

### Rule 2520 Federally Mandated Operating Permits

Since this facility's potential to emit does not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

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

#### 40 CFR 60 Subpart III – 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 III.

40 CFR 60 Subpart III Requirements for New Emergency IC Engines Powering Generators (2007 and Later Model Year)	Proposed Method of Compliance with 40 CFR 60 Subpart III Requirements
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.	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.
Engine(s) must be fired on 500 ppm sulfur	The applicant has proposed the use of CARB



<p>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>certified diesel fuel, which meets all of the fuel requirements listed in Subpart IIII. 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 IIII]</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. Thus, compliance is expected.</p>
<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 IIII]</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 engine(s) 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

The proposed engine(s) will be in compliance with 40 CFR 60 Subpart IIII.

Additionally, 40 CFR 63 Subpart ZZZZ requires engines rated greater 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 be in compliance 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.

RMR Results				
Unit	Acute Hazard Index	Chronic Hazard Index	Cancer Risk	T-BACT Required?
C-1336-13-0	N/A	N/A	2.24 in a million	Yes
C-1336-14-0	N/A	N/A	1.50 in a million	Yes
C-1336-15-0	N/A	N/A	1.50 in a million	Yes
C-1336-16-0	N/A	N/A	2.21 in a million	Yes
C-1336-17-0	N/A	N/A	3.69 in a million	Yes

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

Note: Delete the following if not applicable. Include any additional HRA conditions, as necessary.

- {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]
- 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]
- 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-1336-4-0, -5-0, -6-0, -8-0, and -9-0 shall be cancelled upon implementation of this Authority to Construct. [District Rule 2201]

#### 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.

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

The new engine has a PM<sub>10</sub> emission factor less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATC:

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

**Rule 4701 Internal Combustion Engines – Phase 1**

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 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>
Operation of emergency standby engines is limited to 100 hours or less per calendar year for non-emergency purposes, verified through the use of a non-resettable elapsed operating time meter.	The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year. Thus, compliance is expected.
Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract.	The following conditions will be included on the permit: <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>
The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.	A permit condition enforcing this requirement was shown earlier in the evaluation.
The owner/operator must monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.	The following condition will be included on the permit: <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:</li> </ul>

	<p>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]</p>
<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>

### 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

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

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

Since 1.0 ppmv is  $\leq$  2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition will be listed on the ATC to ensure compliance:

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

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

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

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

The following table demonstrates how the proposed engine(s) will comply with the requirements of Title 17 CCR Section 93115.

<b>Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</b>	<b>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</b>
Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.	The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, was included earlier in this evaluation.
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).	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 IIII. Additionally, the proposed diesel PM emissions rate is less than or equal to 0.15 g/bhp-hr.
The engine may not be operated more than 50 hours per year for maintenance and testing purposes.	The following condition will be included on the permit: <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 50 hours per calendar year. [District Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]</li> </ul>
New stationary emergency standby diesel-	The applicant has proposed the use of engine(s) that

<p>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>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 this engine is 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 ATC(s) is a ministerial approval for the District and is not subject to CEQA provisions.

### IX. Recommendation

Pending a successful NSR Public Noticing period, issue Authorities to Construct C-1336-13-0, -14-0, -15-0, -16-0, and -17-0 subject to the permit conditions on the attached draft Authority 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-1336-13-0	3020-10-F	1490 bhp IC engine	\$749.00
C-1336-14-0	3020-10-D	755 bhp IC engine	\$479.00
C-1336-15-0	3020-10-D	755 bhp IC engine	\$479.00
C-1336-16-0	3020-10-D	532 bhp IC engine	\$479.00
C-1336-17-0	3020-10-C	216 bhp IC engine	\$240.00



## **Appendixes**

- A. Draft ATC
- 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 ATC

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**ISSUANCE DATE: DRAFT**

**PERMIT NO:** C-1336-13-0

**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:**  
1490 BHP CUMMINS MODEL QST30-G5 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE  
POWERING AN ELECTRICAL GENERATOR (TRANSPORTABLE)

**CONDITIONS**

1. Permit C-1336-4-0 shall be cancelled upon implementation of this Authority to Construct. [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 IIII]
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 IIII]
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 IIII]
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 IIII]

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-1336-13-0 : Feb 4 2011 10:35AM - SIONGCOJ : 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 IIII]
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]
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 IIII]
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-1336-14-0

**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:**  
755 BHP CUMMINS MODEL QSX15-G9 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE  
POWERING AN ELECTRICAL GENERATOR (TRANSPORTABLE)

**CONDITIONS**

1. Permit C-1336-5-0 shall be cancelled upon implementation of this Authority to Construct. [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 IIII]
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 IIII]
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 IIII]
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 IIII]

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-1336-14-0 : Feb 4 2011 10:35AM - SIONGCOJ : 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 IIII]
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]
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 IIII]
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**

**PERMIT NO:** C-1336-15-0

**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:**  
755 BHP CUMMINS MODEL QSX15-G9 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE  
POWERING AN ELECTRICAL GENERATOR (TRANSPORTABLE)

**CONDITIONS**

1. Permit C-1336-6-0 shall be cancelled upon implementation of this Authority to Construct. [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 IIII]
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 IIII]
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 IIII]
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 IIII]

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-1336-15-0; Feb 4 2011 10:35AM - SIONGCOJ : 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 IIII]
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]
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 IIII]
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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San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**ISSUANCE DATE:** DRAFT

**PERMIT NO:** C-1336-16-0

**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:**  
532 BHP ISUZU MODEL 6WG1X TIER 3 CERTIFIED DIESEL-FIRE EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR (TRANSPORTABLE)

**CONDITIONS**

1. Permit C-1336-8-0 shall be cancelled upon implementation of this Authority to Construct. [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 IIII]
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 IIII]
8. Emissions from this IC engine shall not exceed any of the following limits: 2.8 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 IIII]
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 IIII]

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-1336-16-0 : Feb 4 2011 10:35AM - SIONGCOJ : 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 IIII]
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]
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 IIII]
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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San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**DRAFT**  
ISSUANCE DATE: DRAFT

**PERMIT NO:** C-1336-17-0

**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:**  
216 BHP JOHN DEERE MODEL 6068HF285 TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE  
POWERING AN ELECTRICAL GENERATOR (TRANSPORTABLE)

**CONDITIONS**

1. Permit C-1336-9-0 shall be cancelled upon implementation of this Authority to Construct. [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 IIII]
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 IIII]
8. Emissions from this IC engine shall not exceed any of the following limits: 2.8 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 IIII]
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 IIII]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

**DAVID WARNER**, Director of Permit Services  
C-1336-17-0 : Feb 4 2011 10:35AM - SIONGCOJ : 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 IIII]
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]
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 IIII]
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>, CO, 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
CO, 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 CO, 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 proposes to install a Tier 2 and 3 certified emergency standby diesel IC engines, which are the latest Tier Certification for the engines this size as shown in the attached Tier Certification table at the end of this Appendix.

BACT for PM<sub>10</sub> 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.


**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	-	-	3.7	-
	2	2004 - 2007	-		5.6		0.3
	3	2008 - 2011			3.5		
	4*	2008 – 2012 (Interim)			3.5		
75 ≤ hp < 100	1	1998 – 2003	6.9	-	-	3.7	-
	2	2004 – 2007	-		5.6		0.3
	3	2008 – 2011			3.5		
100 ≤ hp < 175	1	1997 – 2002	6.9	-	-	3.7	-
	2	2003 – 2006	-		4.9		0.22
	3	2007 – 2011			3.0		
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

 <b>AIR RESOURCES BOARD</b>	<b>CUMMINS INC.</b>	<b>EXECUTIVE ORDER U-R-002-0368</b> New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

**IT IS ORDERED AND RESOLVED:** That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2007	7CEXL030.AAD	30.0	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler			Generator	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

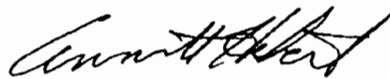
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
kW > 560	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	N/A	N/A	N/A
		CERT	--	--	6.2	0.7	0.11	--	--	--

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

**This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.**

Executed at El Monte, California on this 6 day of November 2006.



Annette Hebert, Chief  
Mobile Source Operations Division

# Engine Model Summary Form

ATTACHMENT B (of 1)

U-R-002-0368

Manufacturer: Cummins Inc.  
 Engine category: Nonroad CI  
 EPA Engine Family: 7CEXL030.AAD  
 Mfr Family Name: D573  
 Process Code: New Submission

1.Engine Code	2.Engine Model	3.BHP @RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke @ peak torque	8.Fuel Rate: (lbs/hr) @ peak torque	9.Emission Control Device Per SAE J1930
175:FR5247	QST30-G	1490 @ 1800	426	517.1	N/A	N/A	N/A	DDI, TC, CAC 
1704:FR5250	QST30-G	1490 @ 1800	426	517.1	N/A	N/A	N/A	
2713:FR5263	QST30-G	1362 @ 1800	373	453.3	N/A	N/A	N/A	
2714:FR5264	QST30-G	1362 @ 1800	373	453.3	N/A	N/A	N/A	
2717:FR5269	QST30-G	1400 @ 1500	505	511.1	N/A	N/A	N/A	
2716:FR5265	QST30-G	1300 @ 1500	465	470.5	N/A	N/A	N/A	
2717:FR5266	QST30-G	1300 @ 1500	465	470.5	N/A	N/A	N/A	
2718:FR5267	QST30-G	1231 @ 1500	435	440.0	N/A	N/A	N/A	
2719:FR5268	QST30-G	1231 @ 1500	435	440.0	N/A	N/A	N/A	
1808:FR5253	QST30-G	1239 @ 1800	366	443.9	N/A	N/A	N/A	
1818:FR5254	QST30-G	1239 @ 1800	366	443.9	N/A	N/A	N/A	

 <b>AIR RESOURCES BOARD</b>	<b>CUMMINS INC.</b>	<b>EXECUTIVE ORDER U-R-002-0455</b> New Off-Road Compression-Ignition Engines
--	---------------------	---

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

**IT IS ORDERED AND RESOLVED:** That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2008	8CEXL015.AAJ	15.0	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Engine Control Module, Direct Diesel Injection, Turbocharger, Charge Air Cooler			Generator Set	

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NO<sub>x</sub>), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NO<sub>x</sub>), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NO <sub>x</sub>	NMHC+NO <sub>x</sub>	CO	PM	ACCEL	LUG	PEAK
kW > 560	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	N/A	N/A	N/A
		FEL	N/A	N/A	5.8	N/A	0.16	N/A	N/A	N/A
		CERT	--	--	5.7	0.7	0.13	--	--	--


**BE IT FURTHER RESOLVED:** That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

**This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.**

Executed at El Monte, California on this 15<sup>th</sup> day of May 2008.

  
 Annette Hebert, Chief  
 Mobile Source Operations Division

ATACHUEW7 P3 1 of 1  
**Engine Model Summary Form**

U-R-002-0455

Manufacturer: **Cummins Inc.**  
 Engine category: **Nonroad CI**  
 EPA Engine Family: **8CEXL015.AAJ**  
 Mfr Family Name: **J103**  
 Process Code: **New Submission**

Don

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6 Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
8587:FR10549	QSX15-G	755@1800	424	257.1	N/A	N/A	N/A	DDI,ECM,TC,CAC
8142:FR10441	QSX15-G	755@1800	424	257.1	N/A	N/A	N/A	DDI,ECM,TC,CAC

 <b>AIR RESOURCES BOARD</b>	<b>CUMMINS INC.</b>	<b>EXECUTIVE ORDER U-R-002-0483</b> New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

**IT IS ORDERED AND RESOLVED:** That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2009	9CEXL015.AAJ	15.0	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Engine Control Module, Direct Diesel Injection, Turbocharger, Charge Air Cooler			Generator Set	

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
kW > 560	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	N/A	N/A	N/A
		FEL	N/A	N/A	5.8	N/A	0.16	N/A	N/A	N/A
		CERT	--	--	5.7	0.7	0.13	--	--	--

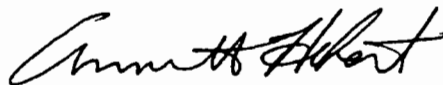
**BE IT FURTHER RESOLVED:** That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

**This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.**

Executed at El Monte, California on this 24 day of November 2008.



Annette Hebert, Chief  
Mobile Source Operations Division

ATTACHMENT 15 10+1  
Engine Model Summary Template

U-R-002-0483

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm <sup>3</sup> /stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm <sup>3</sup> /stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
9CEXL015.AAJ	8587:FR10549	QSX15-G	755@1800	424	257.1	N/A	N/A	N/A	DDI,ECM,TC,CAL
9CEXL015.AAJ	8142:FR10441	QSX15-G	755@1800	424	257.1	N/A	N/A	N/A	DDI,ECM,TC,CAL

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

**IT IS ORDERED AND RESOLVED:** That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2007	7SZXL15.7HXB	15.7	Diesel	8000
<b>SPECIAL FEATURES &amp; EMISSION CONTROL SYSTEMS</b>			<b>TYPICAL EQUIPMENT APPLICATION</b>	
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Electronic Control Module, Exhaust Gas Recirculation			Generator Set	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kW-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):


RATED POWER CLASS	EMISSION STANDARD CATEGORY	STD	EXHAUST (g/kW-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
225 ≤ kW < 450	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	N/A	N/A	N/A
		CERT	--	--	3.3	0.8	0.15	--	--	--

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

**This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.**

Executed at El Monte, California on this 22<sup>nd</sup> day of March 2007.

  
 Annette Hebert, Chief  
 Mobile Source Operations Division



Engine Model Summary Template

U-R-006-0265

ATTACHMENT

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1939
7SZXL15.7HXB	6WG1XDHBA-01	BH-6WG1X	532.4@1800	326.5@1800	196.1@1800	-	-	-	ECM,TC,CAC ,DFI,EGR

	John Deere Power Systems	EXECUTIVE ORDER U-R-004-0362 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

**IT IS ORDERED AND RESOLVED:** That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2009	9JDXL06.8104	6.8	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Electronic Control Module, Smoke Puff Limiter			Loaders, Tractor, Pump, Compressor, Generator Set, Other Industrial Equipment	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NO<sub>x</sub>), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NO<sub>x</sub>), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

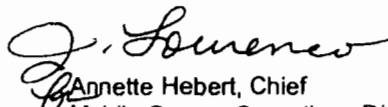
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NO <sub>x</sub>	NMHC+NO <sub>x</sub>	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW < 225	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
		CERT	--	--	3.6	1.3	0.18	14	3	30

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

**This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.**

Executed at El Monte, California on this 12<sup>th</sup> day of December 2008.

  
 Annette Hebert, Chief  
 Mobile Source Operations Division

U-R-004-0362

Engine Model Summary Form

Manufacturer: John Deere Power Systems  
Engine category: Nonroad CI  
EPA Engine Family: 9JDXL06.8104  
Mfr Family Name: 350HAB  
Process Code: New Submission

Attachment P. 1 of 2

1 Engine Code	2 Engine Model	3 BHP @ RPM (SAE Gross)	4 Fuel Rate: mm <sup>3</sup> /stroke @ peak HP (for diesel only)	5 Fuel Rate: (lb/hr) @ peak HP (for diesels only)	6 Torque @ RPM (SEA Gross)	7 Fuel Rate: mm <sup>3</sup> /stroke @ peak torque	8 Fuel Rate: (lb/hr) @ peak torque	9 Emission Control Device Per SAE J1930
8068HF285A	6068H	214.57@2400	103.10@2400	83.40@2400	822.13@1500	128.8@1500	64.05@1500	EM EC SPL
8068HF285B	6068H	189.82@2400	82.80@2400	74.94@2400	578.91@1500	119.33@1500	80.39@1500	EM EC SPL
8068HF285C	6068H 138 kw	185.07@2400	88.70@2400	70.18@2400	527.28@1500	107.56@1500	54.44@1500	EM EC SPL
8068HF285D	6068H	185.07@2200	82.80@2200	88.94@2200	578.91@1500	120.2@1500	80.81@1500	EM EC SPL
8068HF285K	6068H 117 kw	237.37@1800	138.20@1800	83.87@1800	N/A	N/A	N/A	EM EC SPL
8068HF285L	6068H	187.14@1800	115.90@1800	70.33@1800	N/A	N/A	N/A	EM EC SPL
8068HFC82	6068H	209.20@2400	101.10@2400	81.88@2400	557.53@1700	118.5@1700	88.08@1700	EM EC SPL
8068HFS82	6068H	187.14@1800	115.70@1800	70.22@1800	N/A	N/A	N/A	EM EC SPL
8068HFS83	6068H	237.37@1800	138.10@1800	83.87@1800	N/A	N/A	N/A	EM EC SPL
4045HF285K	6068H	187.14@1800	173.80@1800	70.35@1800	N/A	N/A	N/A	EM EC SPL
8068HN055	6068H	189.09@2300	80.00@2300	73.08@2300	548.88@1500	97.4@1500	57.79@1500	EM EC SPL
8068HFC28A	6068H	237.37@1760	140.80@1760	83.80@1760	N/A	N/A	N/A	EM EC SPL
8068HFC28B	6068H	189.82@2400	85.80@2400	77.45@2400	N/A	N/A	N/A	EM EC SPL
8068HFC28C	8068H	189.82@2350	86.80@2350	76.84@2350	N/A	N/A	N/A	EM EC SPL
8068HFC28D	8068H	187.14@2100	106.20@2100	75.27@2100	N/A	N/A	N/A	EM EC SPL
8068HFC28E	6068H	189.82@2400	84.80@2400	76.88@2400	578.91@1500	120.8@1500	81.18@1500	EM EC SPL

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Appendix D  
HRA Summary and AAQA

## San Joaquin Valley Air Pollution Control District Risk Management Review

To: Juscelino Siongco, AQE - Permit Services  
 From: Yu Vu, AQS - Permit Services  
 Date: February 2, 2011  
 Facility Name: VA Medical Center  
 Location: 2615 E Clinton Ave, Fresno, CA  
 Application #(s): C-1336-13-0, -14-0, -15-0, -16-0, -17-0  
 Project #: C-1110062

### A. RMR SUMMARY

RMR Summary							
Categories	Diesel-Fired IC Engine (Unit 13-0)	Diesel-Fired IC Engine (Unit 14-0)	Diesel-Fired IC Engine (Unit 15-0)	Diesel-Fired IC Engine (Unit 16-0)	Diesel-Fired IC Engine (Unit 17-0)	Project Totals	Facility Totals
<b>Prioritization Score</b>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	>1.0
<b>Acute Hazard Index</b>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>
<b>Chronic Hazard Index</b>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>
<b>Maximum Individual Cancer Risk (10<sup>-6</sup>)</b>	2.24	1.50	1.50	2.21	3.69	11.14 <sup>3</sup>	11.14 <sup>3</sup>
<b>T-BACT Required?</b>	Yes	Yes	Yes	Yes	Yes		
<b>Special Permit Conditions?</b>	Yes	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 a prioritization score greater than 1.0.
- 2 Acute and Chronic Hazard Indices were not calculated since there is no risk factor, or the risk factor is so low that the risk has been determined to be insignificant for this type of unit.
- 3 The engines in this project would replace existing TIER 0 engines, and result in a risk reduction.

### Proposed Permit Conditions

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

#### Unit # 13-0

1. The PM10 emissions rate shall not exceed **0.15 g/hp-hr** based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
2. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] N
3. 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 Rules 2201, and 4702 and 17 CCR 93115] N

4. Upon implementation of this ATC, permit # C-1336-4-0 shall be deleted.

**T-BACT is required for this unit because of emissions of diesel particulate matter which is a PM-10. In accordance with District policy, BACT for this unit will be considered to be T-BACT.**

Unit # 14-0

1. The PM10 emissions rate shall not exceed **0.15** g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
2. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] N
3. 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 Rules 2201, and 4702 and 17 CCR 93115] N
4. Upon implementation of this ATC, permit # C-1336-5-0 shall be deleted.

**T-BACT is required for this unit because of emissions of diesel particulate matter which is a PM-10. In accordance with District policy, BACT for this unit will be considered to be T-BACT.**

Unit # 15-0

1. The PM10 emissions rate shall not exceed **0.15** g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
2. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] N
3. 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 Rules 2201, and 4702 and 17 CCR 93115] N
4. Upon implementation of this ATC, permit # C-1336-6-0 shall be deleted.

**T-BACT is required for this unit because of emissions of diesel particulate matter which is a PM-10. In accordance with District policy, BACT for this unit will be considered to be T-BACT.**

Unit # 16-0

1. The PM10 emissions rate shall not exceed **0.15** g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
2. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] N
3. 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 Rules 2201, and 4702 and 17 CCR 93115] N
4. Upon implementation of this ATC, permit # C-1336-8-0 shall be deleted.

**T-BACT is required for this unit because of emissions of diesel particulate matter which is a PM-10. In accordance with District policy, BACT for this unit will be considered to be T-BACT.**

Unit # 17-0

1. The PM10 emissions rate shall not exceed **0.15 g/hp-hr** based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
2. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] N
3. 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 Rules 2201, and 4702 and 17 CCR 93115] N
4. Upon implementation of this ATC, permit # C-1336-9-0 shall be deleted.

**T-BACT is required for this unit because of emissions of diesel particulate matter which is a PM-10. In accordance with District policy, BACT for this unit will be considered to be T-BACT.**

**B. RMR REPORT****I. Project Description**

Technical Services received a request on February 2, 2011, to perform a Risk Management Review for five (5) diesel-fired emergency IC engines rated at 1,490 bhp (unit 13-0), 755 bhp (unit 14-0), 755 bhp (unit 15-0), 532 bhp (unit 16-0), and 216 bhp (unit 17-0), all powering electrical generators. As per the engineer, **the engines in this project would replace existing TIER 0 engines, and result in a risk reduction.** Therefore, an Ambient Air Quality Analysis will not be necessary, despite this project requiring a public notice. This analysis will be performed only to determine T-BACT applicability.

**II. Analysis**

Technical Services performed a screening level health risk assessment using the District developed DICE database.

The following parameters were used for the review:

<b>Analysis Parameters Unit 13-0</b>			
<b>Source Type</b>	Point	<b>Location Type</b>	Urban
<b>BHP</b>	1,490	<b>PM<sub>10</sub> g/hp-hr</b>	0.15
<b>Closest Receptor (m)</b>	0	<b>Quad</b>	Quad 2
<b>Max Hours per Year</b>	40	<b>Type of Receptor</b>	Resident

<b>Analysis Parameters Unit 14-0</b>			
<b>Source Type</b>	Point	<b>Location Type</b>	Urban
<b>BHP</b>	755	<b>PM<sub>10</sub> g/hp-hr</b>	0.15
<b>Closest Receptor (m)</b>	0	<b>Quad</b>	Quad 2
<b>Max Hours per Year</b>	40	<b>Type of Receptor</b>	Resident



<b>Analysis Parameters Unit 15-0</b>			
<b>Source Type</b>	<b>Point</b>	<b>Location Type</b>	<b>Urban</b>
<b>BHP</b>	755	<b>PM<sub>10</sub> g/hp-hr</b>	0.15
<b>Closest Receptor (m)</b>	0	<b>Quad</b>	Quad 2
<b>Max Hours per Year</b>	40	<b>Type of Receptor</b>	Resident

<b>Analysis Parameters Unit 16-0</b>			
<b>Source Type</b>	<b>Point</b>	<b>Location Type</b>	<b>Urban</b>
<b>BHP</b>	532	<b>PM<sub>10</sub> g/hp-hr</b>	0.15
<b>Closest Receptor (m)</b>	0	<b>Quad</b>	Quad 2
<b>Max Hours per Year</b>	40	<b>Type of Receptor</b>	Resident

<b>Analysis Parameters Unit 17-0</b>			
<b>Source Type</b>	<b>Point</b>	<b>Location Type</b>	<b>Urban</b>
<b>BHP</b>	216	<b>PM<sub>10</sub> g/hp-hr</b>	0.15
<b>Closest Receptor (m)</b>	0	<b>Quad</b>	Quad 2
<b>Max Hours per Year</b>	40	<b>Type of Receptor</b>	Resident

### III. Conclusion

The engines in this project would replace existing TIER 0 engines, and result in a risk reduction. In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT) for PM10.

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for this 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:

QNEC = PE2 - PE1, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr
- PE2 = Post-Project Potential to Emit for each emissions unit, lb/qtr
- PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr

Since this is a new unit, PE1 = 0 for all pollutants. Thus, QNEC = PE2 (lb/qtr).

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

$$PE2_{\text{quarterly}} = PE2 \text{ (lb/yr)} \div 4 \text{ quarters/year} = QNEC$$

#### C-1336-13-0

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	604	151.0
SO <sub>x</sub>	1	0.3
PM <sub>10</sub>	20	5.0
CO	342	85.5
VOC	26	6.5

#### C-1336-14-0 and -15-0

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	306	76.5
SO <sub>x</sub>	0	0.0
PM <sub>10</sub>	10	2.5
CO	173	43.3
VOC	13	3.3

C-1336-16-0

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	131	32.8
SO <sub>x</sub>	0	0.0
PM <sub>10</sub>	7	1.8
CO	122	30.5
VOC	9	2.3

C-1336-17-0

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	53	13.3
SO <sub>x</sub>	0	0.0
PM <sub>10</sub>	3	0.8
CO	50	12.5
VOC	4	1.0

**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-1336-4-0	1,344	1	53	399	148
C-1336-5-0	410	0	16	122	45
C-1336-6-0	484	0	19	144	53
C-1336-8-0	439	0	17	131	49
C-1336-9-0	152	0	6	45	17
C-1336-11-0	0	0	0	0	73
C-1336-12-0	0	0	0	0	73
Pre-project SSPE (SSPE1)	10,398	5,119	2,682	25,345	2,279

<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-1336-13-0	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
Post-project SSPE (SSPE2)	8,969	5,119	2,621	25,364	2,032