MAR 09 2010

Humberto Molina
City of Merced
2880 Gateway Oaks Drive, Suite 300
Sacramento, CA 95833

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: N-1100226

Dear Mr. Molina:

Enclosed for your review and comment is the District’s analysis of the City of Merced’s application for an Authority to Construct for installing a 2,220 bhp Cummins Model QSK50-G4 NR2 diesel-fired IC engine powering an electrical generator, at 10260 Gove Rd, Merced.

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. Rick Dyer of Permit Services at (209) 557-6458.

Sincerely,

David Warner
Director of Permit Services

DW: RD/cm

Enclosures
MAR 09 2010

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

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: N-1100226

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District’s analysis of the City of Merced’s application for an Authority to Construct for installing a 2,220 bhp Cummins Model QSK50-G4 NR2 diesel-fired IC engine powering an electrical generator, at 10260 Gove Rd., Merced.

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Sincerely,

David Warner
Director of Permit Services

DW: RD/cm

Enclosure
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 the City of Merced for installing a 2,220 bhp Cummins Model QSK50-G4 NR2 diesel-fired IC engine powering an electrical generator, at 10260 Gove Rd, Merced.

The analysis of the regulatory basis for this proposed action, Project #N-1100226, is available for public inspection at http://www.valleyair.org/notifications/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, 4800 ENTERPRISE WAY, MODESTO, CA 95356-8718.
San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
Diesel-Fired Emergency Standby IC Engine

Facility Name: City of Merced
Mailing Address: 678 West 18th Street
Merced, CA 95340
Contact Person: Humberto Molina
Telephone: (209) 385-6951

Date: February 25, 2010
Engineer: Rick Dyer
Lead Engineer: Nick Pierce

Contact Person: John Nielsen
Telephone: (916) 207-4857
Application #: N-4302-15-0
Project #: N1100226
Complete: February 9, 2010

I. Proposal

The city of Merced is proposing to install a 2,220 bhp diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator at their waste water treatment facility.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (9/21/06)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702 Stationary Internal Combustion Engines – Phase 2 (1/18/07)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Title 13 California Code of Regulations (CCR), Section 2423 – Exhaust Emission Standards and Test Procedures, Off-Road Compression-Ignition Engines and Equipment
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines
California Environmental Quality Act (CEQA)
III. Project Location

The project is located at 10260 Gove Rd in Merced, 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 50 hours per year for maintenance and testing purposes.

V. Equipment Listing

N-4320-15-0: 2,220 BHP CUMMINS MODEL QSK50-G4 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR.

VI. Emission Control Technology Evaluation

The engine is equipped with:

[X] Turbocharger
[X] Intercooler/aftercooler
[ ] Injection timing retard (or equivalent per District Policy SSP-1805, dated 8/14/1996)
[X] Positive Crankcase Ventilation (PCV) or 90% efficient control device
[ ] This engine is required to be, and is UL certified
[ ] Catalytic particulate filter
[X] Very Low (0.0015%) sulfur diesel

The emission control devices/technologies and their effect on diesel engine emissions detailed below are from *Non-catalytic NOX Control of Stationary Diesel Engines*, by Don Koeberlein, CARB.

The turbocharger reduces the NOX emission rate from the engine by approximately 10% by increasing the efficiency and promoting more complete burning of the fuel.

The intercooler/aftercooler functions in conjunction with the turbocharger to reduce the inlet air temperature. By reducing the inlet air temperature, the peak combustion temperature is lowered, which reduces the formation of thermal NOX. NOX emissions are reduced by approximately 15% with this control technology.
The PCV system reduces crankcase VOC and PM$_{10}$ emissions by at least 90% over an uncontrolled crankcase vent.

The facility is using the latest EPA TIER-rated engine for this horsepower range.

The use of very low-sulfur diesel fuel (0.0015% by weight sulfur maximum) reduces SO$_x$ emissions by over 99% from standard diesel fuel.

VII. General Calculations

A. Assumptions

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency operating schedule:</td>
<td>24 hours/day</td>
</tr>
<tr>
<td>Non-emergency operating schedule:</td>
<td>50 hours/week</td>
</tr>
<tr>
<td>Density of diesel fuel:</td>
<td>7.1 lb/gal</td>
</tr>
<tr>
<td>EPA F-factor (adjusted to 60 °F):</td>
<td>9,051 dscf/MMBtu</td>
</tr>
<tr>
<td>Fuel heating value:</td>
<td>137,000 Btu/gal</td>
</tr>
<tr>
<td>BHP to Btu/hr conversion:</td>
<td>2,542.5 Btu/bhp-hr</td>
</tr>
<tr>
<td>Thermal efficiency of engine:</td>
<td>commonly ≈ 35%</td>
</tr>
<tr>
<td>PM$_{10}$ fraction of diesel exhaust:</td>
<td>0.96 (CARB, 1988)</td>
</tr>
</tbody>
</table>

- The applicant has supplied an emissions factor for NO$_x$ and VOC emissions combined. Therefore the District will use data from the EPA document "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling – Compressions Ignition", dated November 2002, as presented in the following table to estimate NO$_x$ and VOC emissions (District assumption).

<table>
<thead>
<tr>
<th>Horsepower Range (bhp)</th>
<th>Combined Standard, NO$_x$ + VOC (g/bhp-hr)</th>
<th>Estimated NO$_x$ Emissions (g/bhp-hr)</th>
<th>Estimated VOC Emissions (g/bhp-hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tier 2</td>
<td>Tier 3</td>
<td>Tier 2</td>
</tr>
<tr>
<td>≥ 50 to &lt; 100</td>
<td>5.6</td>
<td>3.5</td>
<td>5.2</td>
</tr>
<tr>
<td>≥ 100 to &lt; 175</td>
<td>4.9</td>
<td>3.0</td>
<td>4.5</td>
</tr>
<tr>
<td>≥ 175 to &lt; 300</td>
<td>4.9</td>
<td>3.0</td>
<td>4.5</td>
</tr>
<tr>
<td>≥ 300 to &lt; 600</td>
<td>4.8</td>
<td>3.0</td>
<td>4.5</td>
</tr>
<tr>
<td>≥ 600 to &lt; 750</td>
<td>4.8</td>
<td>3.0</td>
<td>4.5</td>
</tr>
<tr>
<td>≥ 750</td>
<td>4.8</td>
<td>N/A</td>
<td>4.5</td>
</tr>
</tbody>
</table>
For this application for a 2,220 bhp Tier 2 certified IC engine the applicant supplied NO\textsubscript{x} + VOC emissions factor is 4.4 g/bhp-hr. Therefore, the NO\textsubscript{x} and VOC emissions factors for this engine are calculated as follows:

\[
\begin{align*}
\text{NO}_x \ (\text{g/bhp-hr}) &= \text{NO}_x + \text{VOC} \ (\text{g/bhp-hr}) \times (4.5 \text{ g/bhp-hr} + 4.8 \text{ g/bhp-hr}) \\
\text{NO}_x \ \text{g/bhp-hr} &= 4.55 \text{ g/bhp-hr} \times (4.5 \text{ g/bhp-hr} + 4.8 \text{ g/bhp-hr}) \\
\text{NO}_x &= 4.27 \text{ g/bhp-hr} \\
\text{VOC} \ (\text{g/bhp-hr}) &= \text{NO}_x + \text{VOC} \ (\text{g/bhp-hr}) \times (0.3 \text{ g/bhp-hr} + 4.8 \text{ g/bhp-hr}) \\
\text{VOC} \ \text{g/bhp-hr} &= 4.55 \text{ g/bhp-hr} \times (0.3 \text{ g/bhp-hr} + 4.8 \text{ g/bhp-hr}) \\
\text{VOC} &= 0.28 \text{ g/bhp-hr}
\end{align*}
\]

B. Emission Factors

The applicant provided the ARB Executive Order U-R-002-0525 for this engine family, ACEXL050.AAD that listed NO+NMHC, PM\textsubscript{10}, and CO emissions.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor (g/bhp-hr)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>4.27</td>
<td>ARB/EPA Certification</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>0.0051</td>
<td>Mass Balance Equation Below</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>0.06</td>
<td>ARB/EPA Certification</td>
</tr>
<tr>
<td>CO</td>
<td>0.9</td>
<td>ARB/EPA Certification</td>
</tr>
<tr>
<td>VOC</td>
<td>0.28</td>
<td>ARB/EPA Certification</td>
</tr>
</tbody>
</table>

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

C. Calculations

1. Pre-Project Emissions (PE1)

Since this is a new emissions unit, PE1 = 0.

2. Post Project PE (PE2)

The daily and annual PE are calculated as follows:
3. Pre-Project Stationary Source Potential to Emit (SSPE1)

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

Since this is an existing facility, SSPE1 is equal to the PE1_Total Pre-Project from all units for all criteria pollutants. The SSPE1 emissions are taken from the application reviews for projects N1082818 and N1083330.
### SSPE1

<table>
<thead>
<tr>
<th>Permit #</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATC N-4302-10-0 - canceled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ATC N-4302-11-0 - canceled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ATC N-4302-12-0 - canceled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PTO N-4302-13-0</td>
<td>70</td>
<td>0</td>
<td>4</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>PTO N-4302-14-0</td>
<td>3,650</td>
<td>12,783</td>
<td>1,387</td>
<td>19,783</td>
<td>3,358</td>
</tr>
<tr>
<td>ERCs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6,792</td>
<td>15,342</td>
<td>1,594</td>
<td>20,564</td>
<td>3,423</td>
</tr>
</tbody>
</table>

| Major Source Thresholds | 50,000 | 140,000 | 140,000 | 200,000 | 50,000 |
| Major Source ?          | No     | No     | No     | No     | No     |

### SSPE2

<table>
<thead>
<tr>
<th>Permit #</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTO N-4302-1-0 - deleted</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ATC N-4202-2-0 - canceled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PTO N-4302-3-0 - deleted</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PTO N-4302-4-0 - deleted</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PTO N-4302-5-0 - deleted</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PTO N-4302-6-1</td>
<td>1,399</td>
<td>2,558</td>
<td>176</td>
<td>450</td>
<td>18</td>
</tr>
<tr>
<td>ATC N-4302-7-0 - canceled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PTO N-4302-8-0</td>
<td>1,673</td>
<td>1</td>
<td>27</td>
<td>315</td>
<td>41</td>
</tr>
<tr>
<td>ATC N-4302-9-0 - canceled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ATC N-4302-10-0 - canceled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ATC N-4302-11-0 - canceled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ATC N-4302-12-0 - canceled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PTO N-4302-13-0</td>
<td>70</td>
<td>0</td>
<td>4</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>PTO N-4302-14-0</td>
<td>3,650</td>
<td>12,783</td>
<td>1,387</td>
<td>19,783</td>
<td>3,358</td>
</tr>
<tr>
<td>ATC N-4302-15-0</td>
<td>1,045</td>
<td>1</td>
<td>15</td>
<td>220</td>
<td>69</td>
</tr>
<tr>
<td>ERCs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7,837</td>
<td>15,343</td>
<td>1,609</td>
<td>20,784</td>
<td>3,492</td>
</tr>
</tbody>
</table>

---

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.

For this project the change in emissions for the facility is due to the installation of the new emergency standby IC engine, permit unit N-4302-15-0. Therefore:
SSPE2

<table>
<thead>
<tr>
<th>Permit #</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Source Thresholds</td>
<td>50,000</td>
<td>140,000</td>
<td>140,000</td>
<td>200,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Major Source?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE1 (lb/yr)</th>
<th>SSPE2 (lb/yr)</th>
<th>Major Source Threshold (lb/yr)</th>
<th>Existing Major Source?</th>
<th>Becoming a Major Source?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>6,792</td>
<td>7,837</td>
<td>50,000</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>SOx</td>
<td>15,342</td>
<td>15,343</td>
<td>140,000</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>1,594</td>
<td>1,609</td>
<td>140,000</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>20,564</td>
<td>20,784</td>
<td>200,000</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>3,423</td>
<td>3,492</td>
<td>50,000</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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.

\[
QNEC = (PE2 - BE) + 4, \text{ where:}
\]

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

For this application:
\[
\begin{align*}
QNEC_{\text{NOx}} &= (1,045 \text{ lb-NOx/yr} - 0 \text{ lb-NOx/yr}) + 4 = 261.25 \text{ lb/qtr} \\
QNEC_{\text{SOx}} &= (1 \text{ lb-SOx/yr} - 0 \text{ lb-SOx/yr}) + 4 = 0.25 \text{ lb/qtr} \\
QNEC_{\text{PM10}} &= (15 \text{ lb-PM10/yr} - 0 \text{ lb-PM10/yr}) + 4 = 3.75 \text{ lb/qtr} \\
QNEC_{\text{CO}} &= (220 \text{ lb-CO/yr} - 0 \text{ lb-CO/yr}) + 4 = 54.5 \text{ lb/qtr} \\
QNEC_{\text{VOC}} &= (69 \text{ lb-VOC/yr} - 0 \text{ lb-VOC/yr}) + 4 = 17.25 \text{ lb/qtr}
\end{align*}
\]

<table>
<thead>
<tr>
<th>QNEC (lb/qtr)</th>
<th>Quarter 1</th>
<th>Quarter 2</th>
<th>Quarter 3</th>
<th>Quarter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>261</td>
<td>261</td>
<td>261</td>
<td>262</td>
</tr>
<tr>
<td>SOx</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>PM10</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>CO</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>VOC</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>18</td>
</tr>
</tbody>
</table>
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 2.0 pounds per day,
b) The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding 2.0 pounds per day,
c) Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding 2.0 pounds per day, and/or
d) Any new or modified emissions unit, in a stationary source project, which results in a Major Modification.

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

a. New emissions units – PE > 2.0 lb/day

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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Daily Emissions for Unit~15-0 (lb/day)</th>
<th>BACT Threshold (lb/day)</th>
<th>SSPE2 (lb/yr)</th>
<th>BACT Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{X}</td>
<td>501.6</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>SO\textsubscript{X}</td>
<td>0.6</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>No</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>7.0</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>CO</td>
<td>105.7</td>
<td>&gt; 2.0 and SSPE2 \geq 200,000 lb/yr</td>
<td>85</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>32.9</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Thus, BACT will be triggered for NO\textsubscript{X}, PM\textsubscript{10}, and VOC emissions from the engine for this project.

b. Relocation of emissions units – PE > 2.0 lb/day

As discussed previously in Section I, this engine is not being relocated from one stationary source to another as a result of this project. Therefore, BACT is not triggered for the relocation of emissions units with a PE > 2.0 lb/day.
c. Modification of emissions units – Adjusted Increase in Permitted Emissions (AIPE) > 2.0 lb/day

As discussed previously in Section I, this engine is not being modified as a result of this project. Therefore, BACT is not triggered for the modification of emissions units with an AIPE > 2.0 lb/day.

d. Major Modification

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

2. BACT Guideline

BACT Guideline 3.1.1, which appears in Appendix A 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 A of this report, BACT is satisfied with:

\[
\text{NO}_x: \quad \text{Latest EPA Tier Certification level for applicable horsepower range} \\
\text{PM}_{10}: \quad 0.15 \text{ g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)} \\
\text{VOC}: \quad \text{Latest EPA Tier Certification level for applicable horsepower range}
\]

The following condition will be listed on the ATC to ensure compliance with the PM\(_{10}\) BACT emissions limit:

- Emissions from this IC engine shall not exceed 0.06 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 13 CCR 2423 and 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

B. Offsets

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

1. Applicability

Public noticing is required for:

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

a. New Major Source

A New Major Source is a new facility, which is also a major source. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

b. Major Modification

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

c. PE > 100 lb/day

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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Daily PE for unit -15-0 (lb/day)</th>
<th>Public Notice Threshold (lb/day)</th>
<th>Public Notice Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{X}</td>
<td>501.6</td>
<td>100</td>
<td>Yes</td>
</tr>
<tr>
<td>SO\textsubscript{X}</td>
<td>0.6</td>
<td>100</td>
<td>No</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>7.0</td>
<td>100</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>105.7</td>
<td>100</td>
<td>Yes</td>
</tr>
<tr>
<td>VOC</td>
<td>32.9</td>
<td>100</td>
<td>No</td>
</tr>
</tbody>
</table>

As detailed in the preceding table, the NO\textsubscript{X} and CO 100-lb/day threshold was surpassed with this project. Therefore, public noticing is required for daily emissions greater than 100 lb/day for this new emissions unit.
d. Offset Threshold

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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE1 (lb/yr)</th>
<th>SSPE2 (lb/yr)</th>
<th>Offset Threshold (lb/yr)</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{X}</td>
<td>6,792</td>
<td>7,837</td>
<td>20,000</td>
<td>No</td>
</tr>
<tr>
<td>SO\textsubscript{X}</td>
<td>15,342</td>
<td>15,343</td>
<td>54,750</td>
<td>No</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>1,594</td>
<td>1,609</td>
<td>29,200</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>20,564</td>
<td>20,784</td>
<td>200,000</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>3,423</td>
<td>3,492</td>
<td>20,000</td>
<td>No</td>
</tr>
</tbody>
</table>

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

e. SSIPE > 20,000 lb/year

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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE2 (lb/yr)</th>
<th>SSPE1 (lb/yr)</th>
<th>SSIPE (lb/yr)</th>
<th>SSIPE Threshold (lb/yr)</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{X}</td>
<td>7,837</td>
<td>6,792</td>
<td>1,045</td>
<td>20,000</td>
<td>No</td>
</tr>
<tr>
<td>SO\textsubscript{X}</td>
<td>15,343</td>
<td>15,342</td>
<td>1</td>
<td>20,000</td>
<td>No</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>1,594</td>
<td>1,594</td>
<td>15</td>
<td>20,000</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>20,784</td>
<td>20,564</td>
<td>220</td>
<td>20,000</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>3,4892</td>
<td>3,423</td>
<td>69</td>
<td>20,000</td>
<td>No</td>
</tr>
</tbody>
</table>

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

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

D. Daily Emissions Limits

Daily Emissions Limitations (DELS) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT. For this emergency standby IC engine, the DELs are stated in the form of emission factors, the maximum engine horsepower rating, and the maximum operational time of 24 hours per day. Therefore, the following conditions (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- *Emissions from this IC engine shall not exceed any of the following limits:* 4.27 g-NOx/bhp-hr, 0.9 g-CO/bhp-hr, or 0.28 g-VOC/bhp-hr. [District Rule 2201 and 13 CCR 2423, 13 CCR 2423 and 17 CCR 93115, and 40 CFR Part 60 Subpart III]

- *Emissions from this IC engine shall not exceed 0.06 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure.* [District Rules 2201 and 4102, 13 CCR 2423 and 17 CCR 93115, and 40 CFR Part 60 Subpart III]

In addition, the DEL for SOx is established by the sulfur content of the fuel being combusted in the engine. 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 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 is required to demonstrate compliance with the offset, public notification, and daily emission limit requirements of Rule 2201. As required by District Rule 4702, Stationary Internal Combustion Engines - Phase 2, this IC engine is subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, District Rule 4702, of this evaluation.

4. Reporting

No reporting is required to ensure compliance with Rule 2201.

F. Ambient Air Quality Analysis

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

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

The proposed location is in a non-attainment area for PM10. As shown in the AAQA summary sheet in Appendix B, the calculated contribution of PM10 from the proposed equipment will not exceed EPA significance levels.

Therefore, this project is not expected to cause or make worse a violation of an air quality standard.

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 engine(s) will comply with the requirements of 40 CFR Part 60 Subpart III.
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td>Engine(s) must be fired on 500 ppm sulfur content fuel or less, and fuel with a minimum cetane 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.</td>
<td>The applicant has proposed the use of CARB certified diesel fuel, which meets all of the fuel requirements listed in Subpart III. A permit condition enforcing this requirement was included earlier in this evaluation.</td>
</tr>
</tbody>
</table>
| The operator/owner must install a non-resettable hour meter prior to startup of the engine(s). | The applicant has proposed to install a non-resettable hour meter. The following condition will be included on the permit:  
- This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart III] |
| 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. | 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. |
| The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions. | The following condition will be included on the permit:  
- This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart III] |

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


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 III:

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 III.

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

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

<table>
<thead>
<tr>
<th>Unit</th>
<th>Acute Hazard Index</th>
<th>Chronic Hazard Index</th>
<th>Cancer Risk</th>
<th>T-BACT Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-4302-15-0</td>
<td>N/A</td>
<td>N/A</td>
<td>0.02 in a million</td>
<td>No</td>
</tr>
</tbody>
</table>

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

- \{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 0.06 g-PM10/bhp-hr based on
  USEPA certification using ISO 8178 test procedure. [District Rules 2201 and
  4102, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]

- 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 and 17 CCR
  93115 and 40 CFR Part 60 Subpart IIII]

**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$_{10}$ emission factor of 0.4 g-
PM$_{10}$/bhp-hr.

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

The new engine has a PM$_{10}$ 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.

<table>
<thead>
<tr>
<th>District Rule 4702 Requirements</th>
<th>Proposed Method of Compliance with District Rule 4702 Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>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.</td>
</tr>
</tbody>
</table>
| 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:  
  - {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]  
  - {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702] |
| 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:  
  - {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: |

18
<table>
<thead>
<tr>
<th>District Rule 4702 Requirements Emergency Standby IC Engines</th>
<th>Proposed Method of Compliance with District Rule 4702 Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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]</td>
</tr>
</tbody>
</table>

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.

The following conditions will be included on the permit:

- (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]

- The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]

- (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]

**Rule 4801  Sulfur Compounds**

Rule 4801 requires that sulfur compound emissions (as SO₂) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

Volume SO₂ = (n x R x T) + P
n = moles SO₂
T (standard temperature) = 60 °F or 520 °R
R (universal gas constant) = \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ \text{R}}

\begin{align*}
0.000015 \frac{\text{lb} \cdot \text{S}}{\text{gal}} & \times 7.1 \text{ lb} & \times 64 \frac{\text{lb} \cdot \text{SO}_2}{\text{MMBtu}} & \times 1 \frac{\text{gal}}{\text{lb} \cdot \text{mol}} & \times 10.73 \frac{\text{psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ \text{R}} & \times 520^\circ \text{R} & \times 1,000,000 = 1.0 \text{ ppmv}
\end{align*}

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 III]

**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.

<table>
<thead>
<tr>
<th>Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</th>
<th>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.</td>
<td>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.</td>
</tr>
<tr>
<td>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).</td>
<td>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. Additionally, the proposed diesel PM emissions rate is less than or equal to 0.15 g/bhp-hr.</td>
</tr>
<tr>
<td>The engine may not be operated more than 50 hours per year for maintenance and testing purposes.</td>
<td>The following condition will be included on the permit:</td>
</tr>
<tr>
<td></td>
<td>- 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</td>
</tr>
<tr>
<td>Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</td>
<td>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>New stationary emergency standby diesel-fueled CI engines (&gt; 50 bhp) must meet the standards for off-road engines of the same model year and maximum rated power as specified in the Off-Road Compression Ignition Engine Standards (title 13, CCR, section 2423).</td>
<td>50 hours per calendar year. [District Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart III]</td>
</tr>
<tr>
<td>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</td>
<td>The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range.</td>
</tr>
<tr>
<td>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.</td>
<td>The District has verified that this engine is not located within 500' of a school.</td>
</tr>
<tr>
<td>Permit conditions enforcing these requirements were shown earlier in the evaluation.</td>
<td></td>
</tr>
</tbody>
</table>

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.

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

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

IX. Recommendation

Pending a successful NSR Public Noticing period, issue Authority to Construct N-4302-15-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix C.

X. Billing Information

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Fee Schedule</th>
<th>Fee Description</th>
<th>Fee Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-4302-15-0</td>
<td>3020-10-F</td>
<td>2,220 bhp IC engine</td>
<td>$749.00</td>
</tr>
</tbody>
</table>

Appendixes

A. Draft ATC
B. HRA Summary & AAQA
C. BACT Guideline & BACT Analysis
Appendix A

Draft ATC
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-4302-15-0
LEGAL OWNER OR OPERATOR: CITY OF MERCED
MAILING ADDRESS: ATTN: WWTF
678 WEST 18TH ST
MERCED, CA 95340

LOCATION:
10260 GOVE RD
MERCED, CA 95340

EQUIPMENT DESCRIPTION:
2,220 HP CUMMINS MODEL QSK50-G4-NR2 DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. \{98\} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. \{14\} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. \{15\} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. \{198\} 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]
5. 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]
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 Part 60 Subpart III]
7. Emissions from this IC engine shall not exceed any of the following limits: 4.27 g-NOx/bhp-hr, 0.9 g-CO/bhp-hr, or 0.28 g-VOC/bhp-hr. [District Rule 2201, 13 CCR 2423 and 17 CCR 93115, and 40 CFR Part 60 Subpart III]
8. Emissions from this IC engine shall not exceed 0.06 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 13 CCR 2423 and 17 CCR 93115, and 40 CFR Part 60 Subpart III]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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
Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475
9. {3405} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]

10. {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]

11. 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 and 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]

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. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]

16. {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]
Appendix B

HRA Summary & AAQA
San Joaquin Valley Air Pollution Control District
Risk Management Review

To: Rick Dyer, AQE - Permit Services
From: Yu Vu, AQS - Permit Services
Date: February 17, 2010
Facility Name: City of Merced
Location: 10260 Gove Rd., Merced, CA
Application #(s): N-4302-15-0
Project #: N-1100226

A. RMR SUMMARY

<table>
<thead>
<tr>
<th>Categories</th>
<th>Diesel-Fired IC Engine (Unit 15-0)</th>
<th>Project Totals</th>
<th>Facility Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prioritization Score</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Acute Hazard Index</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Chronic Hazard Index</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Maximum Individual Cancer Risk (10^-4)</td>
<td>0.02</td>
<td>0.02</td>
<td>1.00</td>
</tr>
<tr>
<td>T-BACT Required?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Permit Conditions?</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 not risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

Proposed Permit Conditions

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

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. 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]
3. {1344} The engine shall be operated only for maintenance, testing, and required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per year. [District NSR Rule and District Rule 4701]
B. RMR REPORT

I. Project Description

Technical Services received a request on February 9, 2010 to perform a Risk Management Review for a proposed installation of a 2,200 hp diesel-fired emergency IC engine powering an electrical generator. Because the project will trigger a public notice requirement, an ambient air quality analysis (AAQA) will also be performed.

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:

<table>
<thead>
<tr>
<th>Analysis Parameters</th>
<th>Unit 15-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Type</td>
<td>Point</td>
</tr>
<tr>
<td>BHP</td>
<td>2,200</td>
</tr>
<tr>
<td>Closest Receptor (m)</td>
<td>411.48</td>
</tr>
<tr>
<td>Max Hours per Year</td>
<td>50</td>
</tr>
</tbody>
</table>

Technical Services also performed modeling for criteria pollutants CO, NOx, SOx and PM_{10}. The emission rates used for criteria pollutant modeling were 4.37 lb/hr CO, 20.71 lb/hr NOx, 0.025 lb/hr SOx, and 0.292 lb/hr PM_{10}.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

<table>
<thead>
<tr>
<th>Diesel ICE</th>
<th>1 Hour</th>
<th>3 Hours</th>
<th>8 Hours</th>
<th>24 Hours</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>Pass</td>
<td>X</td>
<td>Pass</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>NOx</td>
<td>Pass</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>SOx</td>
<td>Pass</td>
<td>X</td>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
</tr>
<tr>
<td>PM_{10}</td>
<td>X</td>
<td>X</td>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
</tr>
</tbody>
</table>

*Results were taken from the attached PSD spreadsheet.  
*The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusion

The cancer risk factor associated with the proposed diesel-fired IC engine is less than 1.0 in a million. In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).

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

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

Attachments:

A. RMR request from the project engineer
B. Additional information from the applicant/project engineer
C. Toxic emissions summary
D. Prioritization score
## AAQA for (N-4302-15-0)

All Values are in ug/m^3

<table>
<thead>
<tr>
<th></th>
<th>NOx 1 Hour</th>
<th>NOx Annual</th>
<th>CO 1 Hour</th>
<th>CO 8 Hour</th>
<th>SOx 1 Hour</th>
<th>SOx 3 Hour</th>
<th>SOx 24 Hour</th>
<th>SOx Annual</th>
<th>PM 24 Hour</th>
<th>PM Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Background</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.374E+01</td>
<td>1.530E+01</td>
<td>3.612E+03</td>
<td>2.680E+03</td>
<td>1.598E+02</td>
<td>1.332E+02</td>
<td>7.193E+01</td>
<td>2.664E+01</td>
<td>7.500E+01</td>
<td>3.900E+01</td>
</tr>
<tr>
<td>Facility Totals</td>
<td>2.829E+02</td>
<td>1.537E+01</td>
<td>3.665E+03</td>
<td>2.710E+03</td>
<td>1.801E+02</td>
<td>1.334E+02</td>
<td>7.203E+01</td>
<td>2.664E+01</td>
<td>7.621E+01</td>
<td>3.900E+01</td>
</tr>
<tr>
<td>AAQS</td>
<td>338</td>
<td>56</td>
<td>23000</td>
<td>10000</td>
<td>655</td>
<td>1300</td>
<td>105</td>
<td>80</td>
<td>50</td>
<td>30</td>
</tr>
</tbody>
</table>

- **Pass**
- **Fail**

EPA's Significance Level (ug/m^3)

<table>
<thead>
<tr>
<th></th>
<th>NOx 1 Hour</th>
<th>NOx Annual</th>
<th>CO 1 Hour</th>
<th>CO 8 Hour</th>
<th>SOx 1 Hour</th>
<th>SOx 3 Hour</th>
<th>SOx 24 Hour</th>
<th>SOx Annual</th>
<th>PM 24 Hour</th>
<th>PM Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>1.0</td>
<td>2800.0</td>
<td>500.0</td>
<td>0.0</td>
<td>25.0</td>
<td>5.0</td>
<td>1.0</td>
<td>5.0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Device</td>
<td>NOx 1 Hour</td>
<td>NOx Annual</td>
<td>CO 1 Hour</td>
<td>CO 8 Hour</td>
<td>SOx 1 Hour</td>
<td>SOx 3 Hour</td>
<td>SOx 24 Hour</td>
<td>SOx Annual</td>
<td>PM 24 Hour</td>
<td>PM Annual</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
<td>------------</td>
<td>-----------</td>
<td>-----------</td>
<td>------------</td>
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<td>-----------</td>
</tr>
<tr>
<td>1</td>
<td>2.61E+00</td>
<td>1.49E-02</td>
<td>5.50E-01</td>
<td>5.50E-01</td>
<td>3.15E-03</td>
<td>3.15E-03</td>
<td>3.15E-03</td>
<td>1.44E-05</td>
<td>3.67E-02</td>
<td>2.16E-04</td>
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<tr>
<td>2</td>
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<td>1.49E-02</td>
<td>5.50E-01</td>
<td>5.50E-01</td>
<td>3.15E-03</td>
<td>3.15E-03</td>
<td>3.15E-03</td>
<td>1.44E-05</td>
<td>3.67E-02</td>
<td>2.16E-04</td>
</tr>
</tbody>
</table>
Appendix C

BACT Guideline & 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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Achieved in Practice or in the SIP</th>
<th>Technologically Feasible</th>
<th>Alternate Basic Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>Latest EPA Tier Certification level for applicable horsepower range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOX</td>
<td>Latest EPA Tier Certification level for applicable horsepower range</td>
<td>0.15 g/HP-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent (ATCM)</td>
<td></td>
</tr>
<tr>
<td>PM10</td>
<td>Very low sulfur diesel fuel (15 ppmw sulfur or less)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCX</td>
<td>Latest EPA Tier Certification level for applicable horsepower range</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 Engine

1. BACT Analysis for NO\textsubscript{X} Emissions:
   a. Step 1 - Identify all control technologies

   The SJVUAPCD BACT Clearinghouse guideline 3.1.1 identifies achieved in practice BACT for NO\textsubscript{X} emissions from emergency diesel IC engines as follows:

   1) Latest EPA Tier Certification level for applicable horsepower range

   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. Therefore, a cost effectiveness analysis is not required.

   e. Step 5 - Select BACT

   BACT for NO\textsubscript{X} emissions from this emergency standby diesel IC engine is the latest EPA Tier Certification level for the applicable horsepower range. The applicant has proposed to install a Tier 2 certified 2,220 bhp emergency standby diesel IC engine, which is the latest Tier Certification for an engine this size as shown in the attached Tier Certification table at the end of this Appendix; therefore BACT for NO\textsubscript{X} emissions is satisfied.
2. BACT Analysis for PM\textsubscript{10} Emissions:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.1 identifies achieved in practice BACT for PM\textsubscript{10} emissions from emergency diesel IC engines as follows:

1) 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. Therefore, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for PM\textsubscript{10} emissions from this emergency standby diesel IC engine is having PM\textsubscript{10} emissions of 0.15 g/hp-hr, or the latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. The applicant has proposed to install a Tier 2 certified 2,220 bhp emergency standby diesel IC engine, which is the latest Tier Certification for an engine this size as shown in the attached Tier Certification table at the end of this Appendix; therefore BACT for PM\textsubscript{10} emissions is satisfied.
BACT Analysis for VOC Emissions:

3. BACT Analysis for VOC Emissions:

   a. Step 1 - Identify all control technologies

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

         1) EPA Tier Certification level for applicable horsepower range

      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. Therefore, a cost effectiveness analysis is not required.

   e. Step 5 - Select BACT

      BACT for VOC emissions from this emergency standby diesel IC engine is the latest EPA Tier Certification level for the applicable horsepower range. The applicant has proposed to install a Tier 2 certified 2,220 bhp emergency standby diesel IC engine which is the latest Tier Certification for an engine this size as shown in the attached Tier Certification table at the end of this Appendix; therefore BACT for VOC emissions is satisfied.
# Title 13 CCR 2423

## (December 2005)

### Tier Certification & Exhaust Emission Standards

(grams per brake horsepower-hour)

<table>
<thead>
<tr>
<th>Power Rating (hp)</th>
<th>Tier</th>
<th>Model Year</th>
<th>NOₓ</th>
<th>HC</th>
<th>NMHC + NOₓ</th>
<th>CO</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ≤ hp &lt; 75</td>
<td>1</td>
<td>1998 - 2003</td>
<td>6.9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2004 - 2007</td>
<td>-</td>
<td>5.6</td>
<td>3.7</td>
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<td>-</td>
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<tr>
<td></td>
<td>3</td>
<td>2008 - 2011</td>
<td>-</td>
<td>3.5</td>
<td>3.7</td>
<td>-</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>4*</td>
<td>2008 - 2012</td>
<td>-</td>
<td>3.5</td>
<td>3.7</td>
<td>-</td>
<td>0.22</td>
</tr>
</tbody>
</table>

(Interim)

| 75 ≤ hp < 100     | 1    | 1998 - 2003| 6.9 | -  | -          | -  | -  |
|                   | 2    | 2004 - 2007| -   | 5.6| 3.7        | 0.3| -  |
|                   | 3    | 2008 - 2011| -   | 3.5| 3.7        | -  | -  |

| 100 ≤ hp < 175    | 1    | 1997 - 2002| 6.9 | -  | -          | -  | -  |
|                   | 2    | 2003 - 2006| -   | 4.9| 3.7        | 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.