NOV 2 4 2014

Jeff Carvalho
San Joaquin Regional Rail Commission
949 E. Channel Street
Stockton, CA 95202-2620

Re: Notice of Preliminary Decision – Authorities to Construct
Facility Number: N-9057
Project Number: N-1143024

Dear Mr. Carvalho:

Enclosed for your review and comment is the District’s analysis of San Joaquin Regional Rail Commission’s application for Authorities to Construct for two diesel fired emergency IC engines (757 horsepower and 121 horsepower), located at 1020 East Alpine Avenue, Stockton, CA.

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Fred Cruz of Permit Services at (209) 557-6456.

Sincerely,

[Signature]

Arnaud Marjollet
Director of Permit Services

AM: FJC/st

Enclosures

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

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1890 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6081

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

www.valleyair.org www.healthyairliving.com
San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Diesel-fired Emergency Standby IC Engines

Facility Name: San Joaquin Regional Rail Commission
Mailing Address: 949 East Channel Street
Stockton, CA 95202-2620
Contact Person: Jeff Carvalho
Telephone: (209) 944-6220
Email: jeff@acerail.com
Application Nos: N-9057-1-0 and N-9057-2-0
Project No: N-1143024
Complete: October 21, 2014

I. Proposal:
San Joaquin Regional Rail Commission submitted Authority to Construct applications to permit two diesel-fired emergency standby internal combustion (IC) engines that were installed without first obtaining an Authority to Construct permit. Per the applicant the engines were installed in November 2012 and July 2013.

II. Applicable Rules:

Rule 2201 New and Modified Stationary Source Review Rule (4/21/2011)
Rule 2410 Prevention of Significant Deterioration (6/16/2011)
Rule 2520 Federally Mandated Operating Permits (6/21/2001)
Rule 4001 New Source Performance Standards (4/14/1999)
Rule 4101 Visible Emissions (2/17/2005)
Rule 4102 Nuisance (12/17/1992)
Rule 4201 Particulate Matter Concentration (12/17/1992)
Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/2003)
Rule 4702 Stationary Internal Combustion Engines – Phase 2 (8/18/2011)
Rule 4801 Sulfur Compounds (12/17/1992)
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 facility is located at 1020 East Alpine Avenue, Stockton, 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 covered by permit unit N-9057-1-0 powers an electrical generator. Other than emergency operation, this engine may be operated up to 50 hours per year for maintenance and testing purposes. The emergency standby engine covered by permit unit N-9057-2-0 powers a fire pump. Other than emergency operation, this engine may be operated up to 100 hours per year for maintenance and testing purposes.

V. Equipment Listing:

N-9057-1-0: 757 BHP VOLVO MODEL TAD1641GE DIESEL-FIRED EMERGENCY ENGINE (TIER 2 CERTIFIED) POWERING AN ELECTRICAL GENERATOR.

N-9057-2-0: 121 BHP JOHN DEERE MODEL 4045HFC28A DIESEL-FIRED EMERGENCY (TIER 3 CERTIFIED) ENGINE POWERING A FIRE PUMP.

VI. Emission Control Technology Evaluation:

N-9057-1-0:
The applicant has proposed to install a 2012 Model Year Tier 2 certified diesel-fired IC engine that is fired on very low-sulfur diesel fuel (0.0015% by weight sulfur maximum).

NOx, CO, VOC and PM10:
Per District Guidance Document FYI-324 and the District BACT Guideline 3.1.1, the applicant is required to install the latest available tier certification standard for emergency engines as noted below. A new emergency engine shall meet the requirements as follows:

\[
\begin{align*}
50 \leq \text{bhp} < 75: & \quad \text{Tier 4 Interim certification standards} \\
75 \leq \text{bhp} < 750: & \quad \text{Tier 3 certification standards} \\
\geq 750 \text{ bhp}: & \quad \text{Tier 2 certification standards}
\end{align*}
\]

The applicant has proposed to install a 757 bhp Tier 2 certified emergency engine which meets the requirements of District Policy FYI-324 (see Appendix B for copies of the emissions data sheet for these engines).

N-9057-2-0:
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 PM10 emissions by at least 90% over an uncontrolled crankcase vent.

SOx (both engines):
The use of very low-sulfur diesel fuel (0.0015% by weight sulfur maximum) reduces SOx emissions by over 99% from standard diesel fuel.

VII. General Calculations:

A. Assumptions

- Operating schedule: 24 hours/day, 50 hours/year (N-9057-1-0)
- Operating schedule: 24 hours/day, 100 hours/year (N-9057-2-0)
- Density of diesel fuel: 7.1 lb/gal
- EPA F-factor: 9051 dscf/MMBtu (corrected to 60° F)
- PM10 fraction of diesel exhaust is 96% (Reference - CARB, 1988)
- Fuel heating value: 137,000 Btu/gal
- BHP to Btu/hr conversion: 2542.5 Btu/hp-hr
- Thermal efficiency of engine: commonly ≈ 35%
- Fuel rate: 31.3 gal/hr @ 100% load (engine data sheet N-9057-1-0)
- Fuel rate: 8.9 gal/hr @ 100% load (engine data sheet N-9057-2-0)
B. Emission Factors

The applicant supplied the emissions factor for NO\textsubscript{x} and VOC emissions as a combined emission factor. 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\textsubscript{x} and VOC emissions (District assumption).

<table>
<thead>
<tr>
<th>Horsepower Range (bhp)</th>
<th>Combined Standard, NO\textsubscript{x} + VOC (g/bhp-hr)</th>
<th>Estimated NO\textsubscript{x} Emissions (g/bhp-hr)</th>
<th>Estimated VOC Emissions (g/bhp-hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tier 2 Tier 3</td>
<td>Tier 2</td>
<td>Tier 3</td>
</tr>
<tr>
<td>≥ 50 to &lt; 100</td>
<td>5.6 3.5</td>
<td>5.2</td>
<td>3.3</td>
</tr>
<tr>
<td>≥ 100 to &lt; 175</td>
<td>4.9 3.0</td>
<td>4.5</td>
<td>2.8</td>
</tr>
<tr>
<td>≥ 175 to &lt; 300</td>
<td>4.9 3.0</td>
<td>4.5</td>
<td>2.8</td>
</tr>
<tr>
<td>≥ 300 to &lt; 600</td>
<td>4.8 3.0</td>
<td>4.5</td>
<td>2.8</td>
</tr>
<tr>
<td>≥ 600 to &lt; 750</td>
<td>4.8 3.0</td>
<td>4.5</td>
<td>2.8</td>
</tr>
<tr>
<td>≥ 750</td>
<td>4.8 N/A</td>
<td>4.5</td>
<td>N/A</td>
</tr>
</tbody>
</table>

N-9057-1-0: This 757 bhp engine is a Tier 2 certified IC engine and the applicant supplied the combined NO\textsubscript{x} + VOC emissions factor as 4.1 g/bhp-hr. Therefore, the NO\textsubscript{x} and VOC emissions factors are calculated as follows:

\[
\text{NO}_x (g/bhp-hr) = \text{NO}_x + \text{VOC} (g/bhp-hr) \times (4.5 g/bhp-hr + 4.8 g/bhp-hr)
\]
\[
\text{NO}_x \text{ g/bhp-hr} = 4.1 g/bhp-hr \times (4.5 g/bhp-hr + 4.8 g/bhp-hr)
\]
\[
\text{NO}_x = 3.84 g/bhp-hr
\]

\[
\text{VOC} (g/bhp-hr) = \text{NO}_x + \text{VOC} (g/bhp-hr) \times (0.3 g/bhp-hr + 4.8 g/bhp-hr)
\]
\[
\text{VOC \ g/bhp-hr} = 4.1 g/bhp-hr \times (0.3 g/bhp-hr + 4.8 g/bhp-hr)
\]
\[
\text{VOC} = 0.26 g/bhp-hr
\]

N-9057-1-0:

<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>3.84</td>
<td>Engine manufacturer</td>
</tr>
<tr>
<td>CO</td>
<td>0.82</td>
<td>Engine manufacturer</td>
</tr>
<tr>
<td>VOC</td>
<td>0.26</td>
<td>Engine manufacturer</td>
</tr>
<tr>
<td>PM10</td>
<td>0.075</td>
<td>Engine manufacturer</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>0.005</td>
<td>Calculated below</td>
</tr>
</tbody>
</table>

N-9057-2-0: This 121 bhp engine is a Tier 3 certified IC engine and the applicant supplied the combined NO\textsubscript{x} + VOC emissions factor as 2.54 g/bhp-hr (3.4 g/kw-hr). Therefore, the NO\textsubscript{x} and VOC emissions factors are calculated as follows:
NOx (g/bhp-hr) = NOx + VOC (g/bhp-hr) x (2.8 g/bhp-hr + 3.0 g/bhp-hr)
NOx g/bhp-hr = 2.54 g/bhp-hr x (2.8 g/bhp-hr + 3.0 g/bhp-hr)
NOx = 2.37 g/bhp-hr

VOC (g/bhp-hr) = NOx + VOC (g/bhp-hr) x (0.2 g/bhp-hr + 3.0 g/bhp-hr)
VOC g/bhp-hr = 2.54 g/bhp-hr x (0.2 g/bhp-hr + 3.0 g/bhp-hr)
VOC = 0.17 g/bhp-hr

### Emission Factor Table

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor (g/bhp-hr)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>2.37</td>
<td>Engine manufacturer</td>
</tr>
<tr>
<td>CO</td>
<td>1.12</td>
<td>Engine manufacturer</td>
</tr>
<tr>
<td>VOC</td>
<td>0.17</td>
<td>Engine manufacturer</td>
</tr>
<tr>
<td>PM10</td>
<td>0.19</td>
<td>Engine manufacturer</td>
</tr>
<tr>
<td>SOx</td>
<td>0.005</td>
<td>Calculated below</td>
</tr>
</tbody>
</table>

The emission factor for SOx may be calculated based on the current CARB standard for diesel sulfur content, which is 15 ppm by weight.

\[
\frac{0.000015 \text{ lb - S}}{\text{lb - fuel}} \times \frac{7.1 \text{ lb - fuel}}{\text{gallon}} \times \frac{2 \text{ lb - SO2}}{1 \text{ gal}} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp - hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.005 \frac{\text{g - SOx}}{\text{bhp - hr}}
\]

C. Calculations:

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

   Since these are new emission units, PE1 will equal zero for all pollutants for each engine.

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

   The potential to emit emissions from this emergency IC engine is based on the maximum operating capacity of the engine for 24 hours per day. The following calculation for NOx emissions is representative of emission calculations for all pollutants.

   N-9057-1-0: Annual emissions are based on 50 hours per year for non-emergency operation.

   \[
   \begin{align*}
   \text{NOx:} & \quad 3.84 \text{ g/hp-hr} \times 757 \text{ hp} \times \frac{\text{lb}}{453.6 \text{ g}} \\
   \text{NOx:} & \quad 6.41 \text{ lb/hr}, 153.8 \text{ lb/day}, 320 \text{ lb/yr} \\
   \text{CO:} & \quad 1.37 \text{ lb/hr}, 32.8 \text{ lb/day}, 68 \text{ lb/yr} \\
   \text{VOC:} & \quad 0.43 \text{ lb/hr}, 10.4 \text{ lb/day}, 22 \text{ lb/yr} \\
   \text{PM10:} & \quad 0.13 \text{ lb/hr}, 3.0 \text{ lb/day}, 6 \text{ lb/yr} \\
   \text{SOx:} & \quad 0.001 \text{ lb/hr}, 0.2 \text{ lb/day}, 0.4 \text{ lb/yr} \\
   \end{align*}
   \]

   \footnote{Per District Policy APR 1105, Use of Significant Figures, annual emissions less than 0.5 lb are set to zero.}
San Joaquin Regional Rail Commission
N-9057-1-0 & N-9057-2-0 – Project N-1143024

<table>
<thead>
<tr>
<th></th>
<th>NOx</th>
<th>CO</th>
<th>VOC</th>
<th>PM10</th>
<th>SOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily PE</td>
<td>153.8</td>
<td>32.8</td>
<td>10.4</td>
<td>3.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Annual PE</td>
<td>320</td>
<td>68</td>
<td>22</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

N-9057-2-0: Annual emissions are based on 100 hours per year for non-emergency operation.

\[
\text{NO}_x: \quad 2.37 \, \text{g/hp-hr} \times 121 \, \text{hp} \times \frac{1}{453.6} \, \text{lb} \\
\text{NO}_x: \quad 0.63 \, \text{lb/hr}, \ 15.2 \, \text{lb/day}, \ 63 \, \text{lb/yr} \\
\text{CO:} \quad 0.30 \, \text{lb/hr}, \ 7.2 \, \text{lb/day}, \ 30 \, \text{lb/yr} \\
\text{VOC:} \quad 0.05 \, \text{lb/hr}, \ 1.1 \, \text{lb/day}, \ 5 \, \text{lb/yr} \\
\text{PM}_{10}: \quad 0.05 \, \text{lb/hr}, \ 1.2 \, \text{lb/day}, \ 5 \, \text{lb/yr} \\
\text{SO}_x: \quad 0.001 \, \text{lb/hr}, \ 0.03 \, \text{lb/day}, \ 0.1 \, \text{lb/yr} \quad \text{2} \\
\]

<table>
<thead>
<tr>
<th></th>
<th>NOx</th>
<th>CO</th>
<th>VOC</th>
<th>PM10</th>
<th>SOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily PE</td>
<td>15.2</td>
<td>7.2</td>
<td>1.1</td>
<td>1.2</td>
<td>0</td>
</tr>
<tr>
<td>Annual PE</td>
<td>63</td>
<td>30</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

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 these are new emission units at a new facility, SSPE1 is equal to zero for all pollutants.

4. Post Project Stationary Source Potential to Emit (SSPE2):

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

---

2 Per District Policy APR 1105, Use of Significant Figures, daily emissions less than 0.05 and annual emissions less than 0.5 lb are set to zero.
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 have any ERCs which have been banked at the source; therefore, SSPE2 does not have to be adjusted.

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.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.
As shown above, the facility is not an existing major source for PSD for any pollutant. Therefore the facility is not an existing major source for PSD.


The equipment is considered as new emissions unit and the baseline emissions will equal zero for all pollutants.

7. SB 288 Major Modification:

The purpose of Major Modification calculations is to determine the following:

A. If Best Available Control Technology (BACT) is triggered for a new or modified emission unit that results in a Major Modification (District Rule 2201, Section 4.1.3); and

B. If a public notification is triggered (District Rule 2201, Section 5.4.1).

Based on the pre and post-project stationary source potential to emit calculations (less onsite Emission Reduction Credit's) in this document, the facility is not a Major Source for any pollutant. Therefore, the proposed project cannot trigger a Major modification and no further calculations are required.

8. Federal Major Modification

This facility is not a Major Source for any pollutant. Therefore, this project can not constitute a Federal Major Modification and no further discussion is required.

9. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix C.
10. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination:

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

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

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

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

**Potential to Emit of attainment/unclassified pollutant for New or Modified Emission Units vs PSD Significant Emission Increase Thresholds**

As a screening tool, the potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if total potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

<table>
<thead>
<tr>
<th>PSD Major Source Determination: Potential to Emit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO₂</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Total PE from New and Modified Units</td>
</tr>
<tr>
<td>PSD Major Source threshold</td>
</tr>
<tr>
<td>New PSD Major Source?</td>
</tr>
</tbody>
</table>

As demonstrated above, because the project has a total potential to emit from all new and modified emission units below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.
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

These engines are each considered as a new emissions unit and the daily emissions are compared to the BACT thresholds in the following tables:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Daily Emissions for unit -1-0 (lb/day)</th>
<th>BACT Threshold (lb/day)</th>
<th>SSPE2 (lb/yr)</th>
<th>BACT Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>153.8</td>
<td>&gt; 2.0</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>SOx</td>
<td>0.2</td>
<td>&gt; 2.0</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>3.0</td>
<td>&gt; 2.0 and SSPE2 ≥ 200,000 lb/yr</td>
<td>98</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>32.8</td>
<td>&gt; 2.0</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>VOC</td>
<td>10.4</td>
<td>&gt; 2.0</td>
<td>N/A</td>
<td>Yes</td>
</tr>
</tbody>
</table>

BACT will be triggered for NOx, PM10 and VOC emissions from this engine.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Daily Emissions for unit -2-0 (lb/day)</th>
<th>BACT Threshold (lb/day)</th>
<th>SSPE2 (lb/yr)</th>
<th>BACT Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>15.2</td>
<td>&gt; 2.0</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>SOx</td>
<td>0</td>
<td>&gt; 2.0</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>1.2</td>
<td>&gt; 2.0</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>7.2</td>
<td>&gt; 2.0 and SSPE2 ≥ 200,000 lb/yr</td>
<td>98</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>1.1</td>
<td>&gt; 2.0</td>
<td>N/A</td>
<td>No</td>
</tr>
</tbody>
</table>
BACT will be triggered for NO\textsubscript{x} emissions from this engine.

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

These engines are not being relocated from one stationary source to another stationary source as a result of this project.

c. Modification of emissions units – Adjusted Increase in Permitted Emissions (AIPE) > 2.0 lb/day

Neither engine is being modified. Therefore, BACT is not triggered for the modification of emissions units with an AIPE > 2.0 lb/day.

d. Major Modification

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 D of this report, covers diesel-fired emergency IC engines.

BACT Guideline 3.1.4, 2\textsuperscript{nd} quarter 2001, which appears in Appendix D of this report, covers diesel-fired emergency IC engines powering a firewater pump.

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 D of this report, BACT is satisfied with:

N-9057-1-0:
NO\textsubscript{x}, VOC: Tier 2 engine
PM10: 0.15 g/bhp-hr, or less

N-9057-2-0:
Pursuant to the attached Top-Down BACT Analysis, which appears in Appendix D of this report, BACT is satisfied with:

NO\textsubscript{x}: Certified NO\textsubscript{x} emissions of 6.9 g/bhp-hr or less
B. Offsets:

Since emergency standby IC engines are exempt from the offset requirements of Rule 2201, per Section 4.6.2, offsets are not required for these engines and offset calculations are not required.

C. Public Notification:

1. Applicability:

   Public noticing is required for:
   a. New Major Sources, which is a new facility that also becomes 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 SSIPE of greater than 20,000 lb/year for any pollutant.

   a. New Major Source

   A New Major Source is a new facility, which also becomes 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 Sections VII.C.7 and VII.C.8, 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 -1-0 (lb/day)</th>
<th>Public Notice Threshold (lb/day)</th>
<th>Public Notice Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>153.8</td>
<td>100</td>
<td>Yes</td>
</tr>
<tr>
<td>SOx</td>
<td>0.2</td>
<td>100</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>3.0</td>
<td>100</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>32.8</td>
<td>100</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>10.4</td>
<td>100</td>
<td>No</td>
</tr>
</tbody>
</table>
As detailed in the preceding tables, emissions from permit unit N-9057-1-0 exceed the 100 lb/day thresholds for NOx and public noticing is required for this project.

d. Offset Threshold

The following table compares the SSPE1 and SSPE2 with the offset thresholds to determine if any offset thresholds have been surpassed.

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

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:
As detailed in the preceding table, there are 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, this project will result in emissions, for any criteria pollutant, which would subject the project to the noticing requirements listed above. Therefore, public notice will be required for this project.

D. Daily Emissions Limits

Daily Emissions Limitations (DELS) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT. For 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 will be listed on each ATC to ensure compliance:

N-9057-1-0:
- Emissions from this IC engine shall not exceed any of the following limits: 3.84 g-NOx/bhp-hr, 0.82 g-CO/bhp-hr, or 0.26 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- Emissions from this IC engine shall not exceed 0.075 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]
- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115]
N-9057-2-0:

- Emissions from this IC engine shall not exceed any of the following limits: 2.37 g-NOx/bhp-hr, 1.12 g-CO/bhp-hr, or 0.17 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

- Emissions from this IC engine shall not exceed 0.19 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]

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

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
   Monitoring is not 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
   Reporting is not required to ensure compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA):

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

The proposed location is in an attainment area for NOx, CO, and SOx. As shown by the AAQA summary sheet 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 the state's PM10 as well as federal and state PM2.5 thresholds. As shown by the AAQA summary sheet the
proposed equipment will not cause a violation of an air quality standard for PM$_{10}$ and PM$_{2.5}$.

**Rule 2520 Federally Mandated Operating Permits**

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

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

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

Pursuant to § 60.4200 of Subpart III, these engines are subject to this federal regulation. However, the District has not been delegated authorization to enforce the requirements of this regulation. The applicant will be so notified in a permit condition.

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


Pursuant to § 63.6585 of Subpart ZZZZ, these engines are subject to this federal regulation. However, the District has not been delegated authorization to enforce the requirements of 40 CFR 63 Subpart ZZZZ for non-Part 70 sources (Major Sources). The applicant will be so notified in a permit condition.

**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.

Technical Services received a request on October 20, 2014, to perform an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for a 757 bhp and 121 bhp emergency diesel IC engines. An AAQA is only required and modeled for the Unit 1-0 engine (757 bhp). Technical Services performed a screening level health risk assessment using the District's Diesel Exhaust Risk Screening spreadsheet. (see RMR Summary in Appendix E).

<table>
<thead>
<tr>
<th>Categories</th>
<th>Emergency Diesel ICE (Unit 1-0)</th>
<th>Emergency Diesel ICE (Unit 2-0)</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>
<td>&gt;1</td>
</tr>
<tr>
<td>Acute Hazard Index</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.00</td>
</tr>
<tr>
<td>Chronic Hazard Index</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.00</td>
</tr>
<tr>
<td>Maximum Individual Cancer Risk</td>
<td>2.5E-07</td>
<td>9.7E-07</td>
<td>1.22E-06</td>
<td>1.22E-06</td>
</tr>
<tr>
<td>T-BACT Required?</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Permit Conditions?</td>
<td>Yes</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 no risk factor, or the risk factor is so low that the risk has been determined to be insignificant for this type of unit.

For permit unit N-9057-1-0, the emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

The Cancer Risks associated with the operation of the proposed diesel IC engines are 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).

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

**Unit 1-0**

1. The PM10 emissions rate shall not exceed 0.075 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
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. 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]
**Unit 2-0**

1. The PM10 emissions rate shall not exceed 0.19 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]

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. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

### 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.

\[
\frac{0.1 \text{ grain - PM}}{\text{dscf}} \times \frac{g}{15.43 \text{ grain}} \times \frac{1 \text{ Btu}_{\text{in}}}{0.35 \text{ Btu}_{\text{out}}} \times \frac{9.05 \text{ dscf}}{1 \text{ Btu}} \times \frac{2,542.5 \text{ Btu}}{1 \text{ bhp - hr}} \times \frac{0.96 g - PM_{10}}{1 g - PM} = 0.4 \frac{g - PM_{10}}{bhp - hr}
\]

The new engines each have 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:

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

### Rule 4701 Internal Combustion Engines – Phase 1

District Rule 4701 is applicable to diesel-fired emergency standby or emergency IC engines. Rule 4702 is at least as stringent as this rule in all aspects; therefore, compliance with that rule will ensure compliance with Rule 4701.

### Rule 4702 Internal Combustion Engines – Phase 2

The following table demonstrates how the proposed engines will comply with the requirements of District Rule 4702. The following table applies to permit unit N-9057-1-0.

<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>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 the engine maintenance and testing to 50 hours/year for each engine. Thus, compliance is expected.</td>
</tr>
<tr>
<td>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</td>
<td>The following conditions will be included on each permit:</td>
</tr>
<tr>
<td></td>
<td>• An emergency situation is an</td>
</tr>
</tbody>
</table>
| San Joaquin Regional Rail Commission  
N-9057-1-0 & N-9057-2-0 – Project N-1143024 |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract.</td>
</tr>
<tr>
<td>The owner/operator must monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>• (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 Rules 4701 and 4702]</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
the following table applies to permit unit N-9057-2-0.

<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>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>This emergency engine will be limited to 100 hours per calendar year for non-emergency purposes. Thus, compliance is expected.</td>
</tr>
</tbody>
</table>

Records of the total hours of operation of the emergency engine, 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:

- 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, and the purpose of the operation (for example: load testing, weekly testing, etc.). 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]
- All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 4701 and 4702 and 17 CCR 93115]

Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO$_2$) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

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

- $n =$ moles $\text{SO}_2$
- $T = \text{standard temperature} = 60 ^\circ \text{F} \text{ or } 520 ^\circ \text{R}$
R (universal gas constant) = $\frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ \text{R}}$

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

Since $1.0 \text{ ppmv}$ is $\leq 2,000 \text{ ppmv}$, 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, and 17 CCR 93115]

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

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

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

The following table demonstrates how the proposed engines will comply with the requirements of Title 17 CCR Section 93115. The following applies to permit unit N-9057-1-0.

<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 engines 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>Engines 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 (17 CCR 93115)</td>
<td>The applicant has proposed the use of an engine that is certified to the applicable 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 each 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 50 hours per calendar year. [District Rule 4702 &amp; 17 CCR</td>
</tr>
</tbody>
</table>
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.

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.

The following applies to permit unit N-9057-2-0.

<table>
<thead>
<tr>
<th>Title 17 CCR Section 93115 Requirements for In-use Emergency IC Engines Powering Fire Pump Assemblies</th>
<th>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency engines 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>
</tbody>
</table>

The requirements of Section 93115.6(b)(3) [limitation on hours per year for maintenance and testing purposes] do not apply to in-use emergency fire pump assemblies that are driven directly by stationary diesel-fueled CI engines and only operated the number of hours necessary to comply with the testing requirements of National Fire Protection Association (NFPA) 25 "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems", 2002 edition, which is incorporated into this section by reference.

The following condition will be included on the permit:

- (3816) This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems". Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115] N
The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its Environmental Review Guidelines (ERG) in 2001.

The basic purposes of CEQA are to:

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

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

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

For the proposed project, the District performed an Engineering Evaluation (this document) and determined that the project will occur at an existing facility; involves negligible expansion of the existing use; and would not have a significant effect on the environment. The District further determined that the project qualifies for processing under the procedures set forth in the District's Permit Services Procedures Manual in the Guidelines for Expedited Application Review (GEAR). Thus, as discussed above, issuance of such ATC(s) is ministerial approval for the District and is not subject to CEQA provisions.
IX. Recommendations:

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct permits N-9057-1-0 and N-9057-2-0 subject to the permit conditions on the attached draft Authorities to Construct in Appendix A.

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-9057-1-0</td>
<td>3020-10-D</td>
<td>757 bhp IC engine</td>
<td>$479</td>
</tr>
<tr>
<td>N-9057-2-0</td>
<td>3020-10-B</td>
<td>121 bhp IC engine</td>
<td>$117</td>
</tr>
</tbody>
</table>

Appendices

A. Authority to Construct permits N-9057-1-0 and N-9057-2-0
B. Engine Emissions Data
C. QNEC Calculations
D. BACT Guideline and BACT Analysis
E. RMR Summary
Appendix A

Authority to Construct permits

N-9057-1-0 and N-9057-2-0
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-9057-1-0
LEGAL OWNER OR OPERATOR: SAN JOAQUIN REGIONAL RAIL COMMISSION
MAILING ADDRESS: 949 E CHANNEL ST
STOCKTON, CA 95202-2820
LOCATION: 1020 E ALPINE AVE
STOCKTON, CA

EQUIPMENT DESCRIPTION:
757 BHP VOLVO MODEL TAD1641GE DIESEL-FIRED EMERGENCY ENGINE (TIER 2 CERTIFIED) 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. (15) No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. (14) Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. (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]
5. (4749) This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
6. (4258) Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 3.84 g-NOx/bhp-hr, 0.82 g-CO/bhp-hr, or 0.26 g-VOC/bhp-hr. [District Rules 2201 and 4102, and 17 CCR 93115]
8. Emissions from this IC engine shall not exceed 0.075 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-8400 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 Sadredln, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services
Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-8400 • Fax (209) 557-6475
9. (4261) 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. (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]

12. (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]

13. (3496) The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]

14. (4777) 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 Rules 2201 and 4702, and 17 CCR 93115]

15. (4263) 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]

17. U.S. EPA administers the requirements of 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ. The owner or operator shall comply with the emission and operating limitations, testing requirements, initial and continuous compliance requirements as specified in these subparts. The owner or operator shall submit all applicable notifications, reports, and records to the administrator by the required compliance dates. [District Rules 4001 and 4002]
AUTHORITY TO CONSTRUCT

PERMIT NO: N-9057-2-0

LEGAL OWNER OR OPERATOR: SAN JOAQUIN REGIONAL RAIL COMMISSION
MAILING ADDRESS: 949 E CHANNEL ST
STOCKTON, CA 95202-2620

LOCATION: 1020 E ALPINE AVE
STOCKTON, CA

EQUIPMENT DESCRIPTION:
121 BHP JOHN DEERE MODEL 4045HFC28A DIESEL-FIRED EMERGENCY (TIER 3 CERTIFIED) ENGINE POWERING
A FIRE PUMP.

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. (3395) Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District
Rules 2201 and 4801 and 17 CCR 93115]
6. (3403) This engine shall be equipped with an operational non-resettable elapsed
time meter or other APCO approved
alternative. [District Rule 4702 and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 2.37 g-NOx/bhp-hr, 1.12 g-CO/bhp-hr, or
0.17 g-VOC/bhp-hr. [District Rule 2201 and 13 CCR 2423 and 17 CCR 93115]
8. Emissions from this IC engine shall not exceed 0.19 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test
procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-8400 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

Arnaud Marjolle, Director of Permit Services

Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475
9. (3816) This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems". Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

10. 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, and the purpose of the operation (for example: load testing, weekly testing, etc.). 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]

11. (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]

12. U.S. EPA administers the requirements of 40 CFR Part 60 Subpart III and 40 CFR Part 63 Subpart ZZZZ. The owner or operator shall comply with the emission and operating limitations, testing requirements, initial and continuous compliance requirements as specified in these subparts. The owner or operator shall submit all applicable notifications, reports, and records to the administrator by the required compliance dates. [District Rules 4001 and 4002]
Appendix B

Engine emissions data
STATEMENT OF EXHAUST EMISSIONS
2011 VOLVO DIESEL FUELED GENERATOR

The stated values are actual exhaust emission test measurements obtained from an engine representative of the type described above.

Values based on 5-mode testing are official data of record as submitted to regulatory agencies for certification purposes. Testing was conducted in accordance with prevailing EPA & CARB protocols, which are typically accepted by SCAQMD and other regional authorities.

No emission values provided above are to be construed as guarantees of emission levels for any given Generac generator unit.

Generac Power Systems reserves the right to revise this information without prior notice.

Consult state and local regulatory agencies for specific permitting requirements.

The emission performance data supplied by the equipment manufacturer is only one element required toward completion of the permitting and installation process. State and local regulations may vary on a case-by-case basis and must be consulted by the permit applicant/equipment owner prior to equipment purchase or installation. The data supplied herein by Generac Power Systems cannot be construed as a guarantee of installability of the generating set.

### Emissions based on declared Rated BHP of specific Engine Models.

(These values are Actual Exhaust Emissions during a 5-Mode test based on declared Rated BHP.)

<table>
<thead>
<tr>
<th>CO</th>
<th>NOx + NMHC</th>
<th>PM</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.10</td>
<td>5.50</td>
<td>0.101</td>
<td>Grams/kW-hr</td>
</tr>
<tr>
<td>0.82</td>
<td>4.10</td>
<td>0.075</td>
<td>Grams/bhp-hr</td>
</tr>
</tbody>
</table>

**The stated values are actual exhaust emission test measurements obtained from an engine representative of the type described above.**

**Values based on 5-mode testing are official data of record as submitted to regulatory agencies for certification purposes.**

**Testing was conducted in accordance with prevailing EPA & CARB protocols, which are typically accepted by SCAQMD and other regional authorities.**

**No emission values provided above are to be construed as guarantees of emission levels for any given Generac generator unit.**

**Generac Power Systems reserves the right to revise this information without prior notice.**

**Consult state and local regulatory agencies for specific permitting requirements.**

**The emission performance data supplied by the equipment manufacturer is only one element required toward completion of the permitting and installation process. State and local regulations may vary on a case-by-case basis and must be consulted by the permit applicant/equipment owner prior to equipment purchase or installation. The data supplied herein by Generac Power Systems cannot be construed as a guarantee of installability of the generating set.**

---

**INDUSTRIAL SALES**

**P.O. BOX 8 WAUKESHA, WI 53187  262-544-4800  FAX 262-544-4854**

DATA SUBJECT TO CHANGE WITHOUT NOTICE 0191600SSD  02/11 rev 10/11
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.

<table>
<thead>
<tr>
<th>MODEL YEAR</th>
<th>ENGINE FAMILY</th>
<th>DISPLACEMENT (liters)</th>
<th>FUEL TYPE</th>
<th>USEFUL LIFE (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>BJDXL08.8105</td>
<td>4.5, 6.8</td>
<td>Diesel</td>
<td>8000</td>
</tr>
</tbody>
</table>

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Electronic Control Module, Smoke Puff Limiter

TYPICAL EQUIPMENT APPLICATION
Loaders, Tractor, Pump, Compressor, Generator Set, Other Industrial Equipment

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):

<table>
<thead>
<tr>
<th>RATED POWER CLASS</th>
<th>EMISSION STANDARD CATEGORY</th>
<th>EXHAUST (g/kW-hr)</th>
<th>OPACITY (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>75 ≤ kW &lt; 130</td>
<td>Tier 3</td>
<td>STD.</td>
<td>CERT</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>4.0</td>
<td>5.0</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>0.30</td>
<td>1.5</td>
<td>1.0 0.25</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>15</td>
<td>13 3 25</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>15</td>
<td>13 3 25</td>
</tr>
</tbody>
</table>

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 December 2010.

Annette Hebert, Chief
Mobile Source Operations Division
Appendix C

QNEC Calculations

Quarterly Net Emissions Change (QNEC)

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

\[
QNEC = PE2 - PE1, \text{ where:}
\]

- \( QNEC \) = 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

Using the emission calculations in this evaluation, \( PE2_{\text{quarterly}} \) and \( BE_{\text{quarterly}} \) can be calculated as follows:

This calculation is required for application emission profile purposes. It is assumed that each unit's annual emissions are evenly distributed throughout the year as follows: \( \Delta PE \text{ (lb/qtr)} = PE \text{ (lb/yr)} \div 4 \text{ qtr/yr} \)

<table>
<thead>
<tr>
<th>( \Delta PE_{\text{NOx}} )</th>
<th>( \Delta PE_{\text{CO}} )</th>
<th>( \Delta PE_{\text{VOC}} )</th>
<th>( \Delta PE_{\text{PM10}} )</th>
<th>( \Delta PE_{\text{SOx}} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>= 320 lb-NOx/year - 0 lb-NOx/year</td>
<td>= 68 lb-CO/year - 0 lb-CO/year</td>
<td>= 22 lb-VOC/year - 0 lb-VOC/year</td>
<td>= 6 lb-PM10/year - 0 lb-PM10/year</td>
<td>= 0 lb-SOx/year - 0 lb-SOx/year</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quarter 1</th>
<th>Quarter 2</th>
<th>Quarter 3</th>
<th>Quarter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>CO</td>
<td>17</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>VOC</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>PM10</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>SOx</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>( \Delta PE_{\text{NOx}} )</th>
<th>( \Delta PE_{\text{CO}} )</th>
<th>( \Delta PE_{\text{VOC}} )</th>
<th>( \Delta PE_{\text{PM10}} )</th>
<th>( \Delta PE_{\text{SOx}} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>= 63 lb-NOx/year - 0 lb-NOx/year</td>
<td>= 30 lb-CO/year - 0 lb-CO/year</td>
<td>= 5 lb-VOC/year - 0 lb-VOC/year</td>
<td>= 5 lb-PM10/year - 0 lb-PM10/year</td>
<td>= 0 lb-SOx/year - 0 lb-SOx/year</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quarter 1</th>
<th>Quarter 2</th>
<th>Quarter 3</th>
<th>Quarter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>15</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>CO</td>
<td>7</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>VOC</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>PM10</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>SOx</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
### Emergency Diesel I.C. Engine Driving a Fire Pump

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Achieved in Practice or contained in the SIP</th>
<th>Technologically Feasible</th>
<th>Alternate Basic Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC</td>
<td>Positive crankcase ventilation (unless it voids the Underwriters Laboratories (UL) certification)</td>
<td>Catalytic Oxidation</td>
<td></td>
</tr>
<tr>
<td>SOx</td>
<td>Low-sulfur diesel fuel (500 ppmw sulfur or less) or Very Low-sulfur diesel fuel (15 ppmw sulfur or less), where available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM10</td>
<td>0.1 grams/bhp-hr (if TBACT is triggered) (corrected 7/16/01) 0.4 grams/bhp-hr (if TBACT is not triggered)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>Certified NOx emissions of 6.9 g/bhp-hr or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>Oxidation Catalyst</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Any engine model included in the ARB or EPA diesel engine certification lists and identified as having a PM10 emission rate of 0.149 grams/bhp-hr or less, based on ISO 8178 test procedure, shall be deemed to meet the 0.1 grams/bhp-hr requirement.

2. A site-specific Health Risk Analysis is used to determine if MAGI is triggered. *(Clarification added 05/07/01)*

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

---

*This is a Summary Page for this Class of Source*
Appendix D

BACT Guideline and BACT Analysis
### San Joaquin Valley
### Unified Air Pollution Control District

#### Best Available Control Technology (BACT) Guideline 3.1.1
**Last Update: 9/10/2013**
**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></td>
<td></td>
</tr>
<tr>
<td></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>
<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>SOX</td>
<td>Latest EPA Tier Certification level for applicable horsepower range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOC</td>
<td>Latest EPA Tier Certification level for applicable horsepower range</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: for emergency engines 50 <= bhp < 75, Tier 4 Interim certification is the requirement; for emergency engines 75 <= bhp <750 bhp, Tier 3 certification is the requirement; for emergency engines => 750 bhp, Tier 2 certification is the requirement.*

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 NOx and VOC emissions N-9057-1-0:

BACT Guideline 3.1.1 (September 10, 2013) applies to emergency diesel IC engines. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

1. BACT analysis for NOx and VOC emissions:

   a. Step 1 - Identify all control technologies

      BACT Guideline 3.1.1 identifies only the following option:

         • Latest EPA Tier Certification level for applicable horsepower range

      To determine the latest applicable Tier level, the following EPA and state regulations were consulted:

         • 40 CFR Part 60 Subpart III - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
         • 40 CFR Part 89 – Control of Emissions from New and In-Use Nonroad Compression – Ignition Engines
         • 40 CFR Part 1039 – Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines
         • Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

      40 CFR Parts 89 and 1039, which apply only to nonroad engines, do not directly apply because the proposed emergency engine does not meet the definition of a nonroad engine. Therefore, only Title 17 CCR, Section 93115 and 40 CFR Part 60 Subpart III apply directly to the proposed emergency engine.

      Title 17 CCR, Section 93115.6(a)(3)(A) (CARB stationary diesel engine ATCM) applies to emergency standby diesel-fired engines and requires that such engines be certified to the emission levels in Table 1 (below). Please note that these levels are at least as stringent or more stringent than the emission levels in 40 CFR Subpart III.
Table 1: Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines g/bhp-hr (g/kW-hr)

<table>
<thead>
<tr>
<th>Maximum Engine Power</th>
<th>Tier</th>
<th>Model Year(s)</th>
<th>PM</th>
<th>NMHC+NOx</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ≤ HP &lt; 75</td>
<td>2</td>
<td>2007</td>
<td>0.15 (0.20)</td>
<td>5.6 (7.5)</td>
<td>3.7 (5.0)</td>
</tr>
<tr>
<td>(37 ≤ kW &lt; 56)</td>
<td>4i</td>
<td>2008+</td>
<td></td>
<td>3.5 (4.7)</td>
<td></td>
</tr>
<tr>
<td>75 ≤ HP &lt; 100</td>
<td>2</td>
<td>2007</td>
<td>0.15 (0.20)</td>
<td>5.6 (7.5)</td>
<td>3.7 (5.0)</td>
</tr>
<tr>
<td>(56 ≤ kW &lt; 75)</td>
<td>3</td>
<td>2008+</td>
<td></td>
<td>3.5 (4.7)</td>
<td></td>
</tr>
<tr>
<td>100 ≤ HP &lt; 175</td>
<td>3</td>
<td>2007</td>
<td>0.15 (0.20)</td>
<td>3.0 (4.0)</td>
<td>3.7 (5.0)</td>
</tr>
<tr>
<td>(75 ≤ kW &lt; 130)</td>
<td></td>
<td>2008+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>175 ≤ HP &lt; 300</td>
<td>3</td>
<td>2007</td>
<td>0.15 (0.20)</td>
<td>3.0 (4.0)</td>
<td>2.6 (3.5)</td>
</tr>
<tr>
<td>(130 ≤ kW &lt; 225)</td>
<td></td>
<td>2008+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300 ≤ HP &lt; 600</td>
<td>3</td>
<td>2007</td>
<td>0.15 (0.20)</td>
<td>3.0 (4.0)</td>
<td>2.6 (3.5)</td>
</tr>
<tr>
<td>(225 ≤ kW &lt; 450)</td>
<td></td>
<td>2008+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600 ≤ HP &lt; 750</td>
<td>3</td>
<td>2007</td>
<td>0.15 (0.20)</td>
<td>3.0 (4.0)</td>
<td>2.6 (3.5)</td>
</tr>
<tr>
<td>(450 ≤ kW &lt; 560)</td>
<td></td>
<td>2008+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HP &gt; 750</td>
<td>2</td>
<td>2007</td>
<td>0.15 (0.20)</td>
<td>4.8 (6.4)</td>
<td>2.6 (3.5)</td>
</tr>
<tr>
<td>(kW &gt; 560)</td>
<td></td>
<td>2008+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additionally, 40 CFR Subpart III establishes emission standards for emergency diesel IC engines. These emission standards are the same as those specified in the CARB ATCM, except for engines rated greater than or equal to 50 and less than 75 hp. For such IC engines, the CARB ATCM is more stringent.

Therefore, the most stringent applicable emission standards are those listed in the CARB ATCM (Table 1). For IC engines rated greater than 750 bhp the highest Tier required is Tier 2 (N-9057-1-0).

Also, please note that neither the state ATCM nor the Code of Federal Regulations require the installation of IC engines meeting a higher Tier standard than those listed above for emergency applications, due to concerns regarding the effectiveness of the exhaust emissions controls during periods of short-term operation (such as testing operational readiness of an emergency engine).

The proposed engine is rated at 757 bhp. Therefore, the applicable control technology option is EPA Tier 2 certification.

b. Step 2 - Eliminate technologically infeasible options

The control option listed in Step 1 is not technologically infeasible.

c. Step 3 - Rank remaining options by control effectiveness

Ranking is not necessary since there is only one control option listed in Step 1.
d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control option remaining under consideration. Therefore, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for NOx and VOC will be the use of an EPA Tier 2 certified engine. The applicant is proposing such a unit. Therefore, the District's BACT requirements will be satisfied.
2. BACT Analysis for PM$_{10}$ Emissions:

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

- 0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)

The latest EPA Tier Certification level for an engine of the proposed model year and horsepower rating is Tier 2. Refer to the Top-Down BACT analysis for NOx for a discussion regarding the determination of the EPA Tier level to be considered.

Please note Tier 2 engines do not have a PM emission standard that is more stringent than 0.15 g/hp-hr. Additionally, the ATCM requires a PM emission standard of 0.15 g/hp-hr for all new emergency diesel IC engines.

Therefore, a PM/PM10 emission standard of 0.15 g/hp-hr is required as BACT.

b. Step 2 - Eliminate technologically infeasible options

The control option listed in Step 1 is not technologically infeasible.

c. Step 3 - Rank remaining options by control effectiveness

Ranking is not necessary since there is only one control option listed in Step 1.

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control option remaining under consideration. Therefore, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for PM$_{10}$ is the use of an engine with PM$_{10}$ emission factor of 0.15 g/hp-hr or less. The applicant is proposing an engine that meets this requirement. Therefore, BACT will be satisfied.
Top Down BACT Analysis for the Emergency IC Engines N-9057-2-0:

Oxides of nitrogen (NO\textsubscript{x}) are generated from the high temperature combustion of the diesel fuel. A majority of the NO\textsubscript{x} emissions are formed from the high temperature reaction of nitrogen and oxygen in the inlet air. The rest of the NO\textsubscript{x} emissions are formed from the reaction of fuel-bound nitrogen with oxygen in the inlet air.

1. BACT Analysis for NO\textsubscript{x} Emissions:

a. Step 1 - Identify all control technologies

The SJVAPCD BACT Clearinghouse guideline 3.1.4, 2\textsuperscript{nd} quarter 2001, identifies achieved in practice BACT for NO\textsubscript{x} emissions from emergency diesel IC engines powering a firewater pump as follows:

1) Certified emissions of 6.9 g-NO\textsubscript{x}/bhp-hr or less

There are no technologically feasible alternatives or control alternatives identified as alternate basic equipment for this class and category of source.

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

Ranking is not necessary since the applicant has proposed the achieved in practice option.

c. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control achieved in practice in the ranking list from Step 3. Therefore, per SJVAPCD BACT policy, a cost effectiveness analysis is not required.

d. Step 5 - Select BACT

BACT for the control of NO\textsubscript{x} emissions from this emergency diesel IC engine powering a firewater pump is the use of an engine with certified emissions of 6.9 g-NO\textsubscript{x}/bhp-hr, or less. The applicant has proposed to install a 121 bhp emergency diesel IC engine powering a firewater pump with certified emissions of 6.9 g-NO\textsubscript{x}/bhp-hr, or less. Therefore, BACT for NO\textsubscript{x} emissions is satisfied.
Appendix E

RMR Summary
A. RMR SUMMARY

<table>
<thead>
<tr>
<th>Categories</th>
<th>Emergency Diesel ICE (Unit 1-0)</th>
<th>Emergency Diesel ICE (Unit 2-0)</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>
<td>&gt;1</td>
</tr>
<tr>
<td>Acute Hazard Index</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.00</td>
</tr>
<tr>
<td>Chronic Hazard Index</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.00</td>
</tr>
<tr>
<td>Maximum Individual Cancer Risk</td>
<td>2.5E-07</td>
<td>9.7E-07</td>
<td>1.22E-06</td>
<td>1.22E-06</td>
</tr>
<tr>
<td>T-BACT Required?</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Special Permit Conditions?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</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 no risk factor, or the risk factor is so low that the risk 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 1-0

1. The PM10 emissions rate shall not exceed 0.075 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
2. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
3. 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]
Unit 2-0

1. The PM10 emissions rate shall not exceed 0.19 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
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. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

B. RMR REPORT

I. Project Description

Technical Services received a request on October 20, 2014, to perform an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for a 757 bhp and 121 bhp emergency diesel IC engines. Per the processing engineer, the AAQA was only required and modeled for the Unit 1-0 engine (757 bhp).

II. Analysis

Diesel exhaust emissions and the Cancer Risks from the engines were calculated using the District approved DICE spreadsheet.

The following parameters were used for the review:

<table>
<thead>
<tr>
<th>Analysis Parameters</th>
<th>Unit 1-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM10 g/hp-hr</td>
<td>Source Type</td>
</tr>
<tr>
<td>0.075</td>
<td>Stack Diameter (m)</td>
</tr>
<tr>
<td>BHP 757</td>
<td>0.2</td>
</tr>
<tr>
<td>Closest Receptor (m)</td>
<td>Stack Height (m)</td>
</tr>
<tr>
<td>152.4</td>
<td>3.43</td>
</tr>
<tr>
<td>Max Hours per Year</td>
<td>Stack Gas Temp. (K)</td>
</tr>
<tr>
<td>50</td>
<td>751</td>
</tr>
<tr>
<td>Location Type</td>
<td>Stack Gas Velocity (m/s)</td>
</tr>
<tr>
<td>Urban</td>
<td>56.75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis Parameters</th>
<th>Unit 2-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit #</td>
<td>bhp-hr</td>
</tr>
<tr>
<td>2-0</td>
<td>121</td>
</tr>
<tr>
<td>Location Type</td>
<td>Urban</td>
</tr>
</tbody>
</table>

For Unit 1-0, Technical Services also performed modeling for criteria pollutants NOx, SOx, and PM10; as well as the RMR for the engine. The emission rates used for criteria pollutant modeling were 320 lb/yr NOx, 0.4 lb/yr SOx, and 6 lb/yr PM10.
The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

<table>
<thead>
<tr>
<th>Diesel ICE (Unit 1-0)</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>NA¹</td>
<td>X</td>
<td>NA¹</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>NO₂</td>
<td>NA¹</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Pass</td>
</tr>
<tr>
<td>SO₂</td>
<td>NA¹</td>
<td>NA¹</td>
<td>X</td>
<td>NA¹</td>
<td>Pass</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>NA¹</td>
<td>Pass³</td>
</tr>
</tbody>
</table>

*Results were taken from the attached PSD spreadsheet.
¹The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour, and 24-hour) standards is not required.
²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusions

For Unit 1-0, the emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

The Cancer Risks associated with the operation of the proposed diesel IC engines are 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 the proposed units.

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

Attachments

RMR Request Form & Attachments
DICE Spreadsheets
AAQA Results
Facility Summary
AERMOD Non-Regulatory Option Checklist