



NOV 14 2012

Jeremy Bergh  
Ref: City of Turlock Water Control  
C.Overaa & Company  
200 Parr Blvd  
Richmond, CA 94801

**Re: Notice of Preliminary Decision - Authority to Construct  
Project Number: N-1122818**

Dear Mr. Bergh:

Enclosed for your review and comment is the District's analysis of the City of Turlock Water Control's application for an Authority to Construct for installing a 954 bhp diesel-fired emergency standby IC engine, at 901 S Walnut Rd, Turlock.

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/st

Enclosures

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

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

**Central Region (Main Office)**  
1990 E. Gettysburg Avenue  
Fresno, CA 93726-0244  
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**Southern Region**  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585



NOV 14 2012

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-1122818**

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of the City of Turlock Water Control's application for an Authority to Construct for installing a 954 bhp diesel-fired emergency standby IC engine, at 901 S Walnut Rd, Turlock.

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Modesto Bee  
Modesto Bee

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

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to the City of Turlock Water Control for installing a 954 bhp diesel-fired emergency standby IC engine, at 901 S Walnut Rd, Turlock.

The analysis of the regulatory basis for this proposed action, Project #N-1122818, is available for public inspection at [http://www.valleyair.org/notices/public\\_notices\\_idx.htm](http://www.valleyair.org/notices/public_notices_idx.htm) and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 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 Turlock Water Control	Date:	November 9, 2012
Mailing Address:	156 S. Broadway, Ste 270 Turlock, CA 95380	Engineer:	Rick Dyer
Contact Person:	Jeremy Bergh – C.Overaa & Company	Lead Engineer:	James Harader
Telephone:	510-719-1209		
FAX:	NA		
Application #:	N-3669-13-0		
Project #:	N-1122818		
Complete:	November 1, 2012		

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**I. Proposal**

The City of Turlock Water Control is proposing to install a 954 bhp diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator.

**II. Applicable Rules**

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)  
Rule 2520 Federally Mandated Operating Permits (6/21/01)  
Rule 4001 New Source Performance Standards (4/14/99)  
Rule 4002 National Emission Standards for Hazardous Air Pollutants (5/20/04)  
Rule 4101 Visible Emissions (2/17/05)  
Rule 4102 Nuisance (12/17/92)  
Rule 4201 Particulate Matter Concentration (12/17/92)  
Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/03)  
Rule 4702 Stationary Internal Combustion Engines – Phase 2 (8/18/11)  
Rule 4801 Sulfur Compounds (12/17/92)  
CH&SC 41700 Health Risk Assessment  
CH&SC 42301.6 School Notice  
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines  
California Environmental Quality Act (CEQA)  
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)  
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:  
CEQA Guidelines

### **III. Project Location**

The project is located at 901 S. Walnut Rd in Turlock, 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**

954 BHP DOOSAN MODEL P222FE YOB TIER 2 CERTIFIED DIESEL-FIRED  
EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

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

The applicant has proposed to install a Tier 2 certified diesel-fired IC engine that will be fired on very low-sulfur diesel fuel (0.0015% by weight sulfur maximum).

#### NO<sub>x</sub>, CO, VOC and PM<sub>10</sub>:

The proposed engine does not meet the latest published Tier Certification requirements; however, compliance with both BACT and CARB's stationary ATCM requirements will be met as described below (see Appendix D for a copy of the emissions data sheet).

Although Tier 4i requirements for this category of engine went into effect in 2011, CARB regulations and District policy allows for the availability of Tier 4i units to be accounted for. CARB's Stationary ATCM exemption §93115.3(u) says, "If the Executive Officer or District finds, based on verifiable information from the engine manufacturer, distributor, or dealer, that current model year engines meeting the current emission standards are not available or not available in sufficient numbers or in a sufficient range of makes, models, and horsepower ratings, then the Executive Officer or the District may allow the sale, purchase, or installation of a new stock engine meeting the emission standards from the previous model year to meet the new stationary diesel-fueled engine emission standards pursuant to title 13 of the California Code of Regulations or 40 CFR part 89." The District has thoroughly investigated, with each of the common manufacturers', the availability of Tier 4i units in this size range, and has found them to be currently unavailable. Since Tier 4i units are not available, as described above, the installation of a Tier 2 unit is acceptable, as Tier 2 is the prior published Tier in this engine's size range.

SO<sub>x</sub>:

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

**VII. General Calculations**

**A. Assumptions**

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

The engine has certified NO<sub>x</sub> + VOC emissions of 4.0 g/bhp-hr. It will be assumed the NO<sub>x</sub> + VOC emission factor is split 95% NO<sub>x</sub> and 5% VOC (per the District's Carl Moyer program).

**B. Emission Factors**

Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO <sub>x</sub>	3.80	Engine Manufacturer
SO <sub>x</sub>	0.0051	Mass Balance Equation Below
PM <sub>10</sub>	0.10	Engine Manufacturer
CO	0.7	Engine Manufacturer
VOC	0.20	Engine Manufacturer

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

**C. Calculations**

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

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

## 2. Post-Project PE (PE2)

The daily and annual PEs are calculated as follows:

Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO <sub>x</sub>	3.80	954	24	50	191.8	399
SO <sub>x</sub>	0.0051	954	24	50	0.3	1
PM <sub>10</sub>	0.10	954	24	50	5.0	11
CO	0.70	954	24	50	35.3	74
VOC	0.20	954	24	50	10.1	21

## 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.

The total stationary source potential emissions will be based on the combined emissions from all permit units at the facility. The emissions for existing permit units are taken from engineering evaluation on project N1080058.

Stationary Source Potential Emissions (SSPE1)						
Permit Number	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)	NH <sub>3</sub> (lb/year)
N-3669-1-1	1,259	3,154	371	1,277	1,459	0
N-3669-2-0	1,472	1,051	247	865	486	0
N-3669-3-0	1,680	2,365	615	8,751	1,490	0
N-3669-5-0	2,421	160	172	522	195	0
N-3669-7-1	104	4	3	11	27	0
N-3669-8-0	1,297	7,096	324	1,031	152	0
N-3669-10-0	0	0	2	0	8,576	96
N-3669-11-0	0	0	1	0	2,848	4,688
N-3669-12-0	0	0	1	0	0	0
<b>Total</b>	<b>8,233</b>	<b>13,830</b>	<b>1,736</b>	<b>12,457</b>	<b>15,233</b>	<b>4,784</b>

#### 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 -13-0. The SSPE2 is shown below:

Stationary Source Potential Emissions (SSPE2)						
Permit Number	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)	NH <sub>3</sub> (lb/year)
N-3669-1-1	1,259	3,154	371	1,277	1,459	0
N-3669-2-0	1,472	1,051	247	865	486	0
N-3669-3-0	1,680	2,365	615	8,751	1,490	0
N-3669-5-0	2,421	160	172	522	195	0
N-3669-7-1	104	4	3	11	27	0
N-3669-8-0	1,297	7,096	324	1,031	152	0
N-3669-10-0	0	0	2	0	8,576	96
N-3669-11-0	0	0	1	0	2,848	4,688
N-3669-12-0	0	0	1	0	0	0
N-3669-13-0	399	1	11	74	21	0
<b>Total</b>	<b>8,632</b>	<b>13,831</b>	<b>1,747</b>	<b>12,531</b>	<b>15,254</b>	<b>4,784</b>

#### 5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site."

This facility does not contain ERCs which have been banked at the source; therefore, no adjustment to SSPE2 is necessary.



Major Source Determination					
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Major Source Threshold (lb/yr)	Existing Major Source?	Becoming a Major Source?
NO <sub>x</sub>	8,233	8,632	20,000	No	No
SO <sub>x</sub>	13,830	13,831	140,000	No	No
PM <sub>10</sub>	1,736	1,747	140,000	No	No
CO	12,457	12,531	200,000	No	No
VOC	15,233	15,254	20,000	No	No

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

## 6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

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

otherwise,

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

Since this unit is located at a non-Major Source, BE = PE1 for all criteria pollutants.

## 7. SB 288 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 an SB 288 Major Modification.

## 8. Federal Major Modification

District Rule 2201, Section 3.17 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM<sub>10</sub> (140,000 lb/year), it is not a major source for PM<sub>2.5</sub> (200,000 lb/year).

### 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, 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:

$$QNEC_{NOx} = (399 \text{ lb-NO}_x/\text{yr} - 0 \text{ lb-NO}_x/\text{yr}) \div 4 = 99.75 \text{ lb/qtr}$$

$$QNEC_{SOx} = (1 \text{ lb-SO}_x/\text{yr} - 0 \text{ lb-SO}_x/\text{yr}) \div 1 = 0.25 \text{ lb/qtr}$$

$$QNEC_{PM10} = (11 \text{ lb-PM}_{10}/\text{yr} - 0 \text{ lb-PM}_{10}/\text{yr}) \div 4 = 2.75 \text{ lb/qtr}$$

$$QNEC_{CO} = (74 \text{ lb-CO}/\text{yr} - 0 \text{ lb-CO}/\text{yr}) \div 4 = 18.5 \text{ lb/qtr}$$

$$QNEC_{VOC} = (21 \text{ lb-VOC}/\text{yr} - 0 \text{ lb-VOC}/\text{yr}) \div 4 = 5.25 \text{ lb/qtr}$$

QNEC (lb/qtr)				
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
<b>NOx</b>	99	100	100	100
<b>SOx</b>	0	0	0	1
<b>PM<sub>10</sub></b>	2	3	3	3
<b>CO</b>	18	18	19	19
<b>VOC</b>	5	5	5	6

## 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 an SB288 Major Modification or a Federal Major Modification, as defined by the rule.

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

As discussed in Section I, the facility is proposing to install a new emergency standby IC engine. Additionally, as determined in Section VII.C.7 and VII.C.8, this project does not result in an SB288 Major Modification or a Federal Major Modification. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

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

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -13-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	191.8	> 2.0	n/a	Yes
SO <sub>x</sub>	0.3	> 2.0	n/a	No
PM <sub>10</sub>	5.0	> 2.0	n/a	Yes
CO	35.3	> 2.0 and SSPE2 ≥ 200,000 lb/yr	9	No
VOC	10.1	> 2.0	n/a	Yes

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

## 2. BACT Guideline

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

## 3. Top-Down BACT Analysis

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

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

NO<sub>x</sub>: Tier 2 certified engine  
VOC: Tier 2 certified engine  
PM<sub>10</sub>: 0.15 g/hp-hr

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

- *Emissions from this IC engine shall not exceed 0.10 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]*

## **B. Offsets**

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

## **C. Public Notification**

### **1. Applicability**

Public noticing is required for:

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

As shown in Section VII.C.6, this facility is not a new Major Source.

- b. Major Modifications

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

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

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

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

As shown in Section VII.C.4, an offset threshold will not be surpassed.

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

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

## **2. Public Notice Action**

As demonstrated above, this project will require public noticing. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the 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. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- *Emissions from this IC engine shall not exceed any of the following limits: 3.8 g-NO<sub>x</sub>/bhp-hr, 0.7 g-CO/bhp-hr, or 0.20 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]*
- *Emissions from this IC engine shall not exceed 0.10 g-PM<sub>10</sub>/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**

No monitoring is required to demonstrate compliance with Rule 2201.

### **3. Recordkeeping**

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

### **4. Reporting**

No reporting is required to ensure compliance with Rule 2201.

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

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

As shown by the AAQA summary sheet in Appendix C, the proposed equipment will not cause or make worse a violation of an air quality standard for NO<sub>x</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub>, or SO<sub>x</sub>.

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

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

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

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

Pursuant to § 60.4200 of Subpart IIII, this engine is 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**

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

Pursuant to § 63.6585 of Subpart ZZZZ, this engine is 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. Therefore, a risk management review (RMR) was performed for this project. The RMR results are summarized in the following table, and can be seen in detail in Appendix C.

RMR Summary			
Categories	Diesel-fired Emergency ICE (Unit 1-0)	Project Totals	Facility Totals
Prioritization Score	N/A <sup>1</sup>	N/A <sup>1</sup>	>1
Acute Hazard Index	N/A <sup>2</sup>	N/A <sup>2</sup>	0.00
Chronic Hazard Index	N/A <sup>2</sup>	N/A <sup>2</sup>	0.00
Maximum Individual Cancer Risk	2.0E-07	2.0E-07	4.00E-07
T-BACT Required?	No		
Special Permit Conditions?	Yes		

1. Prioritization for this unit was not conducted since it has been determined that all diesel-fired ICE 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.

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 0.10 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]*
- *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]*

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

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

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

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

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

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

The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines. Except as provided in Section 4.0, the provisions of this rule apply to any internal combustion engine, rated greater than 50 bhp that requires a PTO.

The proposed engine(s) are also subject to District Rule 4702, Internal Combustion Engines. Since emissions limits of District Rule 4702 and all other requirements are equivalent or more stringent than District Rule 4701 requirements, compliance with District Rule 4702 requirements will satisfy requirements of District Rule 4701.



## Rule 4702 Internal Combustion Engines

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

District Rule 4702 Requirements Emergency Standby IC Engines	Proposed Method of Compliance with District Rule 4702 Requirements
Operation of emergency standby engines is limited to 100 hours or less per calendar year for non-emergency purposes, verified through the use of a non-resettable elapsed operating time meter.	The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year. Thus, compliance is expected.
Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract.	<p>The following conditions will be included on the permit:</p> <ul style="list-style-type: none"> <li>• <i>{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 Rules 4701 and 4702]</i></li> <li>• <i>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]</i></li> </ul>
The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.	A permit condition enforcing this requirement was shown earlier in the evaluation.
The owner/operator must monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.	<p>The following condition will be included on the permit:</p> <p><i>{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]</i></p>

District Rule 4702 Requirements Emergency Standby IC Engines	Proposed Method of Compliance with District Rule 4702 Requirements
<p>Records of the total hours of operation of the emergency standby engine, type of fuel used, purpose for operating the engine, all hours of non-emergency and emergency operation, and support documentation must be maintained. All records shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request.</p>	<p>The following conditions will be included on the permit:</p> <ul style="list-style-type: none"> <li>• <i>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 Rules 4701 and 4702 and 17 CCR 93115]</i></li> <li>• <i>The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]</i></li> <li>• <i>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 Rules 4701 and 4702 and 17 CCR 93115]</i></li> </ul>

### Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO<sub>2</sub>) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

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

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

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

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

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

Since 1.0 ppmv is  $\leq$  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, 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 engine(s) will comply with the requirements of Title 17 CCR Section 93115.

Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.	The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, was included earlier in this evaluation.
The engine may not be operated more than 50 hours per year for maintenance and testing purposes.	The following condition will be included on the permit: <ul style="list-style-type: none"> <li>• <i>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]</i></li> </ul>
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	The District has verified that this engine is not located within 500' of a school.

<p><b>Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</b></p>	<p><b>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</b></p>
<p>An owner or operator shall maintain monthly records of the following: emergency use hours of operation; maintenance and testing hours of operation; hours of operation for emission testing; initial start-up testing hours; hours of operation for all other uses; and the type of fuel used. All records shall be retained for a minimum of 36 months.</p>	<p>Permit conditions enforcing these requirements were shown earlier in the evaluation.</p>

### **California Environmental Quality Act (CEQA)**

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

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

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

The State Legislature granted a number of exemptions from CEQA, including projects that require only ministerial approval. Based upon analysis of its own laws and

consideration of CEQA provisions, the District has identified a limited number of District permitting activities considered to be ministerial approvals. As set forth in §4.2.1 of the ERG, projects permitted consistent with the District's *Guidelines for Expedited Application Review (GEAR)* are standard application reviews in which little or no discretion is used in issuing Authority to Construct (ATC) documents.

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

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**

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct N-3669-13-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix A.

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

<b>Billing Schedule</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Fee Amount</b>
N-3669-13-0	3020-10-E	954 bhp IC engine	\$602.00

## **Appendixes**

- A. Draft ATC
- B. BACT Guideline and BACT Analysis
- C. RMR Summary
- D. Exhaust Emissions Statement

Appendix A

Draft ATC

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: N-3669-13-0

LEGAL OWNER OR OPERATOR: CITY OF TURLOCK WATER CONTROL  
MAILING ADDRESS: 156 S BROADWAY, STE 270  
TURLOCK, CA 95380

LOCATION: 901 S WALNUT RD  
TURLOCK, CA 95380

EQUIPMENT DESCRIPTION:  
954 BHP DOOSAN MODEL P222FE YOB TIER 2 CERTIFIED 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. {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. 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. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 4701 and 4702 and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 3.8 g-NOx/bhp-hr, 0.7 g-CO/bhp-hr, or 0.2 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
8. Emissions from this IC engine shall not exceed 0.10 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
9. 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]

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

**DRAFT**  
DAVID WARNER, Director of Permit Services  
N-3669-13-0: Nov 9 2012 2:34PM - DYERR : Joint Inspection NOT Required



10. 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 Rules 4701 and 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 Rules 4701 and 4702 and 17 CCR 93115]
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. 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]
14. 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 Rules 4701 and 4702 and 17 CCR 93115]
15. The permittee shall maintain monthly records of the type of fuel purchased. [District Rules 4701 and 4702 and 17 CCR 93115]
16. 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 Rules 4701 and 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]

DRAFT

## Appendix B

### BACT Guideline and BACT Analysis

# San Joaquin Valley Unified Air Pollution Control District

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

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

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

## Top Down BACT Analysis for the Emergency IC Engines

BACT Guideline 3.1.1 (July 10, 2009) 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 NO<sub>x</sub> 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 IIII – 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(s) do not meet the definition of a nonroad engine. Therefore, only Title 17 CCR, Section 93115 and 40 CFR Part 60 Subpart IIII apply directly to the proposed emergency engine(s).

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 IIII.

Table 1: Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines g/bhp-hr (g/kW-hr)					
Maximum Engine Power	Tier	Model Year(s)	PM	NMHC+NOx	CO
50 ≤ HP < 75 (37 ≤ kW < 56)	2	2007	0.15 (0.20)	5.6 (7.5)	3.7 (5.0)
	4i	2008+		3.5 (4.7)	
75 ≤ HP < 100 (56 ≤ kW < 75)	2	2007	0.15 (0.20)	5.6 (7.5)	3.7 (5.0)
	3	2008+		3.5 (4.7)	
100 ≤ HP < 175 (75 ≤ kW < 130)	3	2007	0.15 (0.20)	3.0 (4.0)	3.7 (5.0)
		2008+			
175 ≤ HP < 300 (130 ≤ kW < 225)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
300 ≤ HP < 600 (225 ≤ kW < 450)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
600 ≤ HP ≤ 750 (450 ≤ kW ≤ 560)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
HP > 750 (kW > 560)	2	2007	0.15 (0.20)	4.8 (6.4)	2.6 (3.5)
		2008+			

Additionally, 40 CFR Subpart IIII 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 or equal to 50 hp and less than 75 hp the the highestst Tier required is Tier 4i. For IC engines rated greater than or equal to 75 hp and less than 750 hp the highest Tier required is Tier 3. For engines rated equal to or greater than 750 hp the highest Tier required is Tier 2.

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 954 hp. 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**

No ranking needs to be done because 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 NO<sub>x</sub> and VOC will be the use of an EPA Tier 2 certified engine. The applicant is proposing such a unit. Therefore, BACT will be satisfied.

### **2. BACT Analysis for PM<sub>10</sub> 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 NO<sub>x</sub> for a discussion regarding the determination of the EPA Tier level to be considered.

Please note Tier 2 or 3 IC 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/PM<sub>10</sub> 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**

No ranking needs to be done because 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<sub>10</sub> is emissions of 0.15 g/hp-hr or less. The applicant is proposing an engine that meets this requirement. Therefore, BACT will be satisfied.

## Appendix C

### RMR Summary

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: Rick Dyer - Permit Services  
 From: Cheryl Lawler - Permit Services  
 Date: November 8, 2012  
 Facility Name: City of Turlock Water Control  
 Location: 901 S. Walnut Road, Turlock  
 Application #(s): N-3669-13-0  
 Project #: N-1122818

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## A. RMR SUMMARY

RMR Summary			
Categories	Emergency Diesel ICE (Unit 13-0)	Project Totals	Facility Totals
<b>Prioritization Score</b>	N/A <sup>1</sup>	N/A <sup>1</sup>	>1
<b>Acute Hazard Index</b>	N/A <sup>2</sup>	N/A <sup>2</sup>	0.00
<b>Chronic Hazard Index</b>	N/A <sup>2</sup>	N/A <sup>2</sup>	0.00
<b>Maximum Individual Cancer Risk</b>	<b>2.0E-07</b>	2.0E-07	4.00E-07
<b>T-BACT Required?</b>	<b>No</b>		
<b>Special Permit Conditions?</b>	<b>Yes</b>		

- 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 13-0

1. The PM10 emissions rate shall not exceed **0.10** 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]



## B. RMR REPORT

### I. Project Description

Technical Services received a request on November 7, 2012, to perform an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for a 954 bhp emergency diesel IC engine.

### 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:

Analysis Parameters			
Source Type	Point	Location Type	Urban
BHP	954	PM <sub>10</sub> g/hp-hr	0.10
Closest Receptor (m)	457	Quad	2
Max Hours per Year	50	Type of Closest Receptor	Residence

Technical Services also performed modeling for criteria pollutants NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>; as well as the RMR. The emission rates used for criteria pollutant modeling were 399 lb/yr NO<sub>x</sub>, 1 lb/yr SO<sub>x</sub>, 11 lb/yr PM<sub>10</sub>, and 11 lb/yr PM<sub>2.5</sub>.

The results from the Criteria Pollutant Modeling are as follows:

#### Criteria Pollutant Modeling Results\*

Diesel ICE	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	NA <sup>1</sup>	X	NA <sup>1</sup>	X	X
NO <sub>x</sub>	NA <sup>1</sup>	X	X	X	Pass
SO <sub>x</sub>	NA <sup>1</sup>	NA <sup>1</sup>	X	NA <sup>1</sup>	Pass
PM <sub>10</sub>	X	X	X	NA <sup>1</sup>	Pass <sup>2</sup>
PM <sub>2.5</sub>	X	X	X	NA <sup>1</sup>	Pass <sup>2</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The 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.

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

### III. Conclusions

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

The cancer risk associated with the operation of the proposed diesel 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) for PM10.

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

**Attachments:**

RMR Request Form & Related Documents  
DICE Screening Risk Tool  
AAQA Results  
Facility Summary

Appendix D

## Exhaust Emissions Statement

# GENERAC®

## STATEMENT OF EXHAUST EMISSIONS 2012 DOOSAN DIESEL FUELED GENERATOR

The measured emission values provided here are proprietary to Generac and its' authorized dealers. This information may only be disseminated upon request, to regulatory governmental bodies for emissions permitting purposes or to specifying organizations as submittal data when expressly required by project specifications, and shall remain confidential and not open to public viewing. This information is not intended for compilation or sales purposes and may not be used as such, nor may it be reproduced without the expressed written permission of Generac Power Systems, Inc. The data provided shall not be meant to include information made public by Generac.

Generator Model:	SD/MD600	Aspiration:	Turbocharged/Aftercooled
kW <sub>e</sub> Rating:	600	Rated RPM:	1800 RPM
Engine Family:	CDICL21.9UYA	EPA Certificate #:	CDICL21.9UYA-004
Engine Model:	P222FE YOB	SCAQMD CEP #:	459722
Rated Engine Power (BHP)*	954	Emission Std. Category:	Tier 2
Fuel Consumption (gal/hr):	46.2		

\*This Engine Power is declared by the Engine Manufacturer of Record and the U.S. EPA.

### 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.)

CO	NOx + NMHC	PM	
0.9	5.3	0.13	Grams/kW-hr
0.7	4.0	0.10	Grams/bhp-hr

- 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.

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