



Mr. Richard Smith  
Modesto Irrigation District  
PO Box 4060  
Ripon, CA 95352

**Re: Proposed Authority to Construct/Certificate of Conformity (Minor Mod)  
District Facility # N-4940  
Project # N-1132809**

Dear Mr. Smith:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The application is for an emergency generator powered by a diesel fired IC engine.

After addressing all comments made during the 45-day EPA comment period, the District intends to issue the Authority to Construct with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Rupi Gill, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

David Warner  
Director of Permit Services

Enclosures

cc: Gerardo C. Rios, EPA (w/enclosure) via email

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

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# Authority to Construct Application Review

Facility Name: Modesto Irrigation District  
Mailing Address: PO Box 4060  
Modesto, CA 95352

Date: September 5, 2013

Contact Person: Richard Smith  
Telephone: (209) 526-7616

Engineer: Mark Schonhoff  
Application #: N-4940-4-0  
Project #: N-1132809  
Deemed Complete: August 12, 2013

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## I. Proposal

Modesto Irrigation District is proposing to install a 198 bhp diesel fired standby internal combustion (IC) engine that will power an electrical generator.

## II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)  
Rule 2410 Prevention of Significant Deterioration (June 16, 2011)  
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 (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**

1015 S. Stockton Ave.  
Ripon, CA

The equipment will not be located within 1,000 feet of a K-12 school.

### **IV. Process Description**

The engine will power an emergency 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**

198 BHP GENERAC POWER SYSTEMS MODEL SD100 TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

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

The applicant has proposed to install a Tier 3 diesel fired IC engine that will be fired on very low-sulfur diesel fuel (0.0015% by weight sulfur maximum).

#### **NOx, CO, VOC and PM10:**

The proposed engines do 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 copies of the emissions data sheets and/or the ARB/EPA executive orders).

Although Tier 4i requirements for this category of engine went into effect in 2011, CARB regulations and District policy allow 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 198 bhp Tier 3 unit is acceptable, as these standards are 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)

### B. Emission Factors

The engine has certified NO<sub>x</sub> + VOC emissions of 2.8 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).

EF <sub>NO<sub>x</sub></sub> :	(2.8 g/bhp-hr)(0.95) = 2.66 g/bhp-hr
EF <sub>VOC</sub> :	(2.8 g/bhp-hr)(0.05) = 0.14 g/bhp-hr
EF <sub>CO</sub> :	0.7 g/bhp-hr (engine data sheet)
EF <sub>PM<sub>10</sub></sub> :	0.12 g/bhp-hr (engine data sheet)
EF <sub>SO<sub>x</sub></sub> =	0.005 g/bhp-hr – see below

Sulfur Content of Diesel:	15 ppmw
Density of Diesel:	7.1 lb/gal
Fuel Use:	10.04 gal/hr
Engine Rating:	198 bhp

$$EF_{SO_x} = [(15 \text{ lb S}/10^6 \text{ lb fuel})(7.1 \text{ lb fuel/gal})(10.04 \text{ gal/hr})(2 \text{ lb SO}_2/\text{lb S}) \\ \times (453.6 \text{ g/lb})] / (198 \text{ bhp}) = 0.005 \text{ g/bhp-hr}$$

### C. Potential to Emit (PE)

#### 1. Potential to Emit

##### Premodification:

The equipment is new, therefore, the premodification potential to emit (PE) is zero.

**Postmodification:**

$$PE_{NOx} = (2.66 \text{ g/bhp-hr})(198 \text{ bhp})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 27.9 \text{ lb/day}$$

$$PE_{NOx} = (2.66 \text{ g/bhp-hr})(198 \text{ bhp})(\text{lb}/453.6 \text{ g})(50 \text{ hr/yr}) = 58 \text{ lb/yr}$$

$$PE_{CO} = (0.7 \text{ g/bhp-hr})(198 \text{ bhp})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 7.3 \text{ lb/day}$$

$$PE_{CO} = (0.7 \text{ g/bhp-hr})(198 \text{ bhp})(\text{lb}/453.6 \text{ g})(50 \text{ hr/yr}) = 15 \text{ lb/yr}$$

$$PE_{VOC} = (0.14 \text{ g/bhp-hr})(198 \text{ bhp})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 1.5 \text{ lb/day}$$

$$PE_{VOC} = (0.14 \text{ g/bhp-hr})(198 \text{ bhp})(\text{lb}/453.6 \text{ g})(50 \text{ hr/yr}) = 3 \text{ lb/yr}$$

$$PE_{SOx} = (0.005 \text{ g/bhp-hr})(198 \text{ bhp})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 0.1 \text{ lb/day}$$

$$PE_{SOx} = (0.005 \text{ g/bhp-hr})(198 \text{ bhp})(\text{lb}/453.6 \text{ g})(50 \text{ hr/yr}) = 0 \text{ lb/yr}$$

*The annual SOx emissions were calculated to be 0.1 lb and were set to zero per District Policy APR-1105.*

$$PE_{PM10} = (0.12 \text{ g/bhp-hr})(198 \text{ bhp})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 1.3 \text{ lb/day}$$

$$PE_{PM10} = (0.12 \text{ g/bhp-hr})(198 \text{ bhp})(\text{lb}/453.6 \text{ g})(50 \text{ hr/yr}) = 3 \text{ lb/yr}$$

**D. Increase in Permitted Emissions (IPE)**

**1. Quarterly IPE**

The emission profile for this ATC will include the following:

	NOx (lb)	SOx (lb)	PM10 (lb)	CO (lb)	VOC (lb)
Annual PE	58	0	3	15	3
Daily PE	27.9	0.1	1.3	7.3	1.5
Δ PE (Qtr 1)	14	0	0	3	0
Δ PE (Qtr 2)	14	0	1	4	1
Δ PE (Qtr 3)	15	0	1	4	1
Δ PE (Qtr 4)	15	0	1	4	1

**2. Adjusted Increase in Permitted Emissions (AIPE)**

AIPE is used to determine whether or not Best Available Control Technology (BACT) is required for modified units. The unit currently under consideration is new, therefore AIPE calculations are not necessary.

## E. Facility Emissions

### 1. Pre Project Stationary Source Potential to Emit (SSPE1)

The following SSPE1 contributions are from the application review document for project N-1063738.

SSPE1 (lb/yr)					
Permit #	NO <sub>x</sub>	CO	VOC	SO <sub>x</sub>	PM <sub>10</sub>
N-4940-1-2	44,405	57,991	11,038	12,483	26,280
N-4940-2-2	44,405	57,991	11,038	12,483	26,280
ERC's	0	0	0	0	0
<b>Total</b>	<b>88,810</b>	<b>115,982</b>	<b>22,076</b>	<b>24,966</b>	<b>52,560</b>

### 2. Post Project Stationary Source Potential to Emit (SSPE2)

SSPE1 (lb/yr)					
Permit #	NO <sub>x</sub>	CO	VOC	SO <sub>x</sub>	PM <sub>10</sub>
N-4940-1-2	44,405	57,991	11,038	12,483	26,280
N-4940-2-2	44,405	57,991	11,038	12,483	26,280
N-4940-4-0	58	15	3	0	3
ERC's	0	0	0	0	0
<b>Total</b>	<b>88,868</b>	<b>115,997</b>	<b>22,079</b>	<b>24,966</b>	<b>52,563</b>

### 3. Stationary Source Increase in Permitted Emissions (SSIPE)

$$\text{SSIPE} = \text{SSPE2} - \text{SSPE1}$$

The SSPE1 and SSPE2 balances are from sections VII.E.1 and VII.E.2 of this document.

	SSPE2 (lb/yr)	SSPE1 (lb/yr)	SSIPE (lb/yr)
NO <sub>x</sub>	88,868	88,810	58
CO	115,997	115,982	15
VOC	22,079	22,076	3
SO <sub>x</sub>	24,966	24,966	0
PM <sub>10</sub>	52,563	52,560	3

### 4. Baseline Emissions

The equipment is new, therefore, the Baseline Emissions are zero for each pollutant.

## F. Major Source Determination

### Rule 2201 Major Source Determination:

The Major Source thresholds, the facility potentials to emit and whether or not the facility is a Major Source are presented on the following table. The Major Source thresholds are from Section 3.23.1. Since no emission reduction credits have been generated at this facility, the post-modification potential to emit is equivalent to the SSPE2.

Pollutant	Threshold (lb/yr)	Facility PE (lb/yr)	Major Source
NOx	20,000	88,868	Yes
CO	200,000	115,997	No
VOC	20,000	22,079	Yes
SOx	140,000	24,966	No
PM10	140,000	52,563	No

### Rule 2410 Major Source Determination:

The equipment currently under consideration is not a source category listed in 40 CFR Part 52.21(b)(1)(i), therefore, the applicable thresholds are those shown on the table below.

Pollutant	Threshold (tons/yr)	Current Facility PE (tons/yr)	Major Source
NOx	250	44.4	No
CO	250	58.0	No
VOC	250	11.0	No
SOx	250	12.5	No
PM	250	26.3	No
PM10	250	26.3	No
CO <sub>2e</sub>	100,000	510,807	Yes

Premodification CO<sub>2e</sub>:

EF: 52.9 kg/MMBtu (CARB GHG Emission Factor)  
 Rating (N-4940-1): 500 MMBtu/hr  
 Rating (N-4949-2): 500 MMBtu/hr

$$PE_{CO_2e} = (500 \text{ MMBtu/hr} + 500 \text{ MMBtu/hr})(8,760 \text{ hr/yr})(52.9 \text{ kg/MMBtu}) \\ \times (\text{lb}/0.4536 \text{ kg})(\text{ton}/2000 \text{ lb}) = 510,807 \text{ ton/yr}$$

## G. Major Modification Determination

### **SB-288 Major Modification:**

The purpose of SB-288 Major Modification calculations is to determine the following:

If Best Available Control Technology (BACT) is required for a Major Source pollutant from a new or modified emission unit involved in a permitting action that is a Major Modification (District Rule 2201, §4.1.3); and

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

Per section 3.36 of Rule 2201 and the District's draft policy titled Implementation of Rule 2201 (as amended on 12/18/08 and effective on 6/10/10) for SB-288 Major Modifications and Federal Major Modifications, a permitting action is an SB-288 Major Modification if the Net Emission Increase (NEI) for the new and modified units involved in the project exceed the thresholds shown on the following table. The facility is a Major Source only for NOx and VOC, therefore, only NOx and VOC must be addressed.

Pollutant	Threshold (lb/yr)
NOx	50,000
VOC	50,000

As shown in section VII.C.1 of this document, the potential to emit of each NOx and VOC is less than its respective SB-288 Major Modification threshold. Therefore, this permitting action is not an SB-288 Major Modification.

### **Federal Major Modification:**

As shown in section VII.F of this document, the facility is a Major Source only for NOx and VOC, therefore, a Federal Major Modification determination is required only for NOx and VOC.

Per the District's draft policy titled "Implementation of Rule 2201 (as amended on 12/18/08 and effective on 6/10/10) for SB288 Major Modifications and Federal Major Modifications", if the average increase in emissions is 0.5 lb/day or less then the project is not a Federal Major Modification.

$$\text{Average IPE (NOx)} = (58 \text{ lb/yr}) / (365 \text{ days/yr}) = 0.2 \text{ lb/day}$$

$$\text{Average IPE (VOC)} = (3 \text{ lb/yr}) / (365 \text{ days/yr}) = 0.01 \text{ lb/day}$$

The average IPE of neither pollutant will exceed 0.5 lb/day, therefore, this permitting action is not a Federal Major Modification.

## VIII. Compliance

### Rule 2201 New and Modified Stationary Source Review Rule

#### A. BACT

##### 1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following\*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in 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 shown in Section VII.G of this document, this permitting action is not a Major Modification, therefore, whether or not BACT is required is based on the potential to emit of each pollutant and the SSPE2 balance for CO. The table below shows the potential to emit of each pollutant, the BACT threshold, the relevant SSPE2 information and whether or not BACT is required.

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -1-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	27.9	> 2.0	n/a	Yes
CO	7.3	> 2.0 and SSPE2 ≥ 200,000 lb/yr	115,997	No
VOC	1.5	> 2.0	n/a	No
SO <sub>x</sub>	0.1	> 2.0	n/a	No
PM <sub>10</sub>	1.3	> 2.0	n/a	No

As shown above, BACT will be required for the NO<sub>x</sub> emissions from this engine.

## 2. BACT Guideline

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

## 3. Top Down BACT Analysis

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

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

NO<sub>x</sub>: Latest EPA Tier Certification level for applicable horsepower range

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

- Emissions from this IC engine shall not exceed 0.12 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

District Rule 2201 section 5.4 requires a public notification for the affected pollutants from the following types of projects:

- a. New Major Sources
- b. Major Modifications
- c. New emission units with a PE > 100 lb/day of any one pollutant (IPE Notifications)
- d. Modifications with SSPE1 below an offset threshold and SSPE 2 above an offset threshold on a pollutant by pollutant basis (Existing Facility Offset Threshold Exceedence Notification)
- e. New stationary sources with SSPE2 exceeding offset thresholds (New Facility Offset Threshold Exceedence Notification)

f. Any permitting action with a SSIPE exceeding 20,000 lb/yr for any one pollutant. (SSIPE Notice)

**a. New Major Source Notice Determination:**

The facility is not new, therefore, a New Major Source Determination notice is not required.

**b. Major Modification Notice:**

As shown in section VII.G of this document, this permitting action is not a Major Modification, therefore, a Major Modification notice is not required.

**c. PE Notification:**

A notification is required for each new emission unit with the potential to emit more than 100 pounds per day of any one affected pollutant.

As shown in section VII.C.1 of this document, the PE of no pollutant will exceed 100 lb/day. Therefore, a notification is not required.

**d. Existing Facility Offset Threshold Exceedence Notification**

The potential to emit of no pollutant will go from below to above an offset threshold. Therefore, a notification is not required.

**e. New Facility Offset Threshold Exceedence Notification**

The facility is not new, therefore, notification is not required.

**f. SSIPE Notification:**

A notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/yr of any affected pollutant. As shown in section VII.E.3 of this document, the SSIPE of each pollutant will be less than 20,000 pounds per year. An SSIPE notification is not required.

**2. Public Notice**

As shown above, a public notification is not required.

## **D. DAILY EMISSION LIMITS**

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.16 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.16.1 and 3.16.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- Emissions from this IC engine shall not exceed any of the following limits: 2.66 g-NO<sub>x</sub>/bhp-hr, 0.7 g-CO/bhp-hr, or 0.14 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- Emissions from this IC engine shall not exceed 0.12 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**

The monitoring requirements of District Rule 4702 will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

### **3. Record Keeping**

The record keeping requirements of District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

### **4. Reporting**

As they apply to the equipment currently under consideration, no applicable rule or policy requires reporting.

## **Rule 2410 Prevention of Significant Deterioration**

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:

- NO<sub>2</sub> (as a primary pollutant)
- SO<sub>2</sub> (as a primary pollutant)
- CO
- PM
- PM<sub>10</sub>
- Greenhouse gases (GHG): CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFCs, PFCs, and SF<sub>6</sub>

### **I. Project Location Relative to Class 1 Area**

As demonstrated in the “PSD Major Source Determination” Section above, the facility is an existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

### **II. Significance of Project Emission Increase Determination**

The first step of this PSD applicability evaluation consists of determining whether the facility is an existing PSD Major Source. This facility is an existing PSD Major source (See Section VII.F of this document).

In the case of a facility that is 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 for All Emission Units at the Facility vs PSD Major Source Thresholds:**

As a screening tool, the potential to emit from all new and modified units at the facility is compared to the PSD major source threshold and if the total potential to emit from all new and modified units at the facility is below this threshold, no further analysis will be needed.

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.

PSD Major Source Determination: Potential to Emit (tons/year)							
	NO <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>	CO <sub>2e</sub>
Total PE from New and Modified Units	0.03	0.002	0	0.008	0.002	0.002	2.0
PSD Major Source threshold	250	250	250	250	250	250	100,000
New PSD Major Source?	No	No	No	No	No	No	No

EF<sub>GHG</sub>: 0.000187 metric tons/bhp-hr (CARB greenhouse gas emission factor)  
 Rating: 198  
 Schedule: 50 hr/yr

$$PE_{GHG} = (0.000187 \text{ MT/bhp-hr})(198 \text{ bhp})(50 \text{ hr/yr})(2,205 \text{ lb/MT}) \times (\text{ton}/2000 \text{ lb}) = 2.0 \text{ tons/yr}$$

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.

### Rule 2520 Federally Mandated Operating Permits

The proposed permitting action is a Minor Modification to the Title V permit and the applicant has proposed to receive the ATC with a Certificate of Conformity. Therefore, the 45-day EPA comment period will be satisfied prior to the issuance of the ATC. The following federally enforceable conditions will be placed on the Authority to Construct permit:

*This Authority to Construct permit serves as a written Certificate of Conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c).*

*Prior to operating with the modifications authorized by this Authority to Construct permit, the facility shall submit an application for an Administrative Amendment to its Title V permit.*

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

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

This unit is subject to the requirements of section 60.4202(a)(2). This section states that subject units must meet the requirements of 40 CFR 89.112 and 40 CFR 89.113.

#### **40 CFR 89.112:**

This section states that units manufactured in 2006 and later must meet EPA Tier 3 emission standards. A Tier 3 unit is proposed, therefore, the proposed engine will comply with this requirement.

#### **40 CFR 89.113:**

The proposed engine is a constant speed unit and is exempt from this section per 89.113(c)(3).

## **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)**

The unit is new and the facility is an Area Source of HAP emissions. Per 63.6590(c), such units must comply with this subpart by complying with 40 CFR Part 60 Subpart IIII. As shown above, compliance with Subpart IIII will be met.

## **Rule 4101 Visible Emissions**

As long as the equipment is properly maintained and operated, the visible emissions are not expected to exceed 20% opacity for a period or periods aggregating more than 3 minutes in any one hour. Compliance with the provisions of this rule is expected.

## Rule 4102 Nuisance

### A. California Health & Safety Code 41700 (Health Risk Analysis)

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 Results				
Unit	Acute Hazard Index	Chronic Hazard Index	Cancer Risk	T-BACT Required?
N-4940-4-0	N/A	N/A	0.53 in a million	No

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 0.12 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]
- The engine shall be operated only for maintenance, testing and required regulatory purposes and during emergency situations. Operation of the engine for maintenance, testing and required regulatory purposes shall not exceed 50 hours per year. [District Rules 2201 and 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.

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

Each 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 ATCs:

- {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 engines 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(s) will comply with the requirements of District Rule 4702.

<b>District Rule 4702 Requirements Emergency Standby IC Engines</b>	<b>Proposed Method of Compliance with District Rule 4702 Requirements</b>
Operation of emergency standby engines is limited to 100 hours or less per calendar year for non-emergency purposes, verified through the use of a non-resettable elapsed operating time meter.	The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits the engine maintenance and testing to 50 hours/year. Thus, compliance is expected.
Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract.	The following conditions will be included on the permits: <ul style="list-style-type: none"> <li>• {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]</li> <li>• {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]</li> </ul>
The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.	A permit condition enforcing this requirement was shown earlier in the evaluation.
The owner/operator must monitor the operational characteristics of the engine as recommended by the engine manufacturer or emission control system supplier.	The following condition will be included on the permits: <ul style="list-style-type: none"> <li>• {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and</li> </ul>

	connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
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>The following conditions will be included on the permit:</p> <ul style="list-style-type: none"> <li>• {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rules 4701, 4702 and 17 CCR 93115]</li> <li>• The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]</li> <li>• {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 4701, 4702 and 17 CCR 93115]</li> </ul>

### Rule 4801 Sulfur Compounds

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

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

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

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

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

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

**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.

<p align="center"><b>Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</b></p>	<p align="center"><b>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</b></p>
<p>Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.</p>	<p>The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, was included earlier in this evaluation.</p>
<p>Section 96115.6(a) – Table 1 limits the emissions to the following:</p> <p>NMHC + NOx: 3.0 g/bhp-hr CO: 3.7 g/bhp-hr PM: 0.15 g/bhp-hr</p>	<p>As shown in section VII.B of this document. The emissions are expected to be:</p> <p>NMHC + NOx: 2.8 g/bhp-hr CO: 0.7 g/bhp-hr PM: 0.12 g/bhp-hr</p>
<p>The engine may not be operated more than 50 hours per year for maintenance and testing purposes.</p>	<p>The following condition will be included on the permits:</p> <ul style="list-style-type: none"> <li>This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rule 4702 and 17 CCR 93115]</li> </ul>
<p>Engines with PM10 emission rates greater than 0.01 g/bhp-hr and located at schools, may not be operated for maintenance and testing whenever there is a school sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM</p>	<p>The District has verified that this engine is not located within 500' of a school.</p>
<p>An owner or operator shall maintain monthly records of the following: emergency use hours of operation; maintenance and testing hours of operation; hours of operation for emission testing; initial start-up testing hours; hours of operation for all other uses; and the type of fuel used. All records shall be retained for a minimum of 36 months.</p>	<p>Permit conditions enforcing these requirements were shown earlier in the evaluation.</p>

## California Environmental Quality Act (CEQA)

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

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

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project qualifies for ministerial approval under the District's Guideline for Expedited Application Review (GEAR). Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

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

The equipment will not be located within 1,000 feet of a K-12 school, therefore, a school notice is not required.

### IX. Recommendation

Issue an Authority-to-Construct permit subject to the conditions on the attached draft Authority to Construct.

### X. Billing Information

Permit #	Description	Fee Schedule
N-4940-3-0	198 bhp	3020-10-B

### Appendices

- Appendix A: Draft ATC
- Appendix B: BACT Guideline and BACT Analysis
- Appendix C: RMR Summary
- Appendix D: Emission Data Sheet
- Appendix E: Title V Modification – Compliance Certification Form

# **Appendix A**

## **Draft ATC**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT

**PERMIT NO:** N-4940-4-0

**LEGAL OWNER OR OPERATOR:** MODESTO IRRIGATION DISTRICT  
**MAILING ADDRESS:** PO BOX 4060  
MODESTO, CA 95352

**LOCATION:** 1015 S STOCKTON AVE  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

198 BHP GENERAC POWER SYSTEMS MODEL SD100 TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

**CONDITIONS**

1. This Authority to Construct permit serves as a written Certificate of Conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2520] Federally Enforceable Through Title V Permit
2. Prior to operating with the modifications authorized by this Authority to Construct permit, the facility shall submit an application for an Administrative Amendment to its Title V permit. [District Rule 2520] Federally Enforceable Through Title V Permit
3. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {4383} No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (02/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
6. {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]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

N-4940-4-0 : Sep 5 2013 8:51AM -- SCHONHOM : Joint Inspection NOT Required

7. 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]
8. 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] Federally Enforceable Through Title V Permit
9. Emissions from this IC engine shall not exceed any of the following limits: 2.66 g-NO<sub>x</sub>/bhp-hr, 0.7 g-CO/bhp-hr, or 0.14 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
10. Emissions from this IC engine shall not exceed 0.12 g-PM<sub>10</sub>/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
11. 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] Federally Enforceable Through Title V Permit
12. 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] Federally Enforceable Through Title V Permit
13. 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] Federally Enforceable Through Title V Permit
14. 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]
15. 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, 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit

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 Engine

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> 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.

<b>Maximum Engine Power</b>	<b>Tier</b>	<b>Model Year(s)</b>	<b>PM</b>	<b>NMHC+NOx</b>	<b>CO</b>
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 highest 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 198 hp. Therefore, the applicable control technology option is EPA Tier 3 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> will be the use of an EPA Tier 3 certified engine. The applicant is proposing such a unit. Therefore, BACT will be satisfied.

## **Appendix C RMR Summary**

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: Mark Schonhoff, AQE - Permit Services  
 From: Suzanne Medina, AQS - Permit Services  
 Date: 8/28/2013  
 Facility Name: Modesto Irrigation District  
 Location: 1015 S. Stockton Ave., Ripon  
 Application #(s): N-4940-4-0  
 Project #: N-1132809

## A. RMR SUMMARY

<b>RMR Summary</b>			
<b>Categories</b>	<b>Diesel-Fired IC Engine (Unit 4-0)</b>	<b>Project Totals</b>	<b>Facility Totals</b>
<b>Prioritization Score</b>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>
<b>Acute Hazard Index</b>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>
<b>Chronic Hazard Index</b>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>
<b>Maximum Individual Cancer Risk (10<sup>-6</sup>)</b>	0.53	0.53	0.57
<b>T-BACT Required?</b>	No		
<b>Special Permit Conditions?</b>	Yes		

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

### Proposed Permit Conditions

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

#### Unit # 4-0

1. The PM10 emissions rate shall not exceed 0.12 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 August 16, 2013 to perform a Risk Management Review for a proposed installation of a 198 bhp diesel-fired emergency IC engine powering an electrical generator.

### II. Analysis

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

The following parameters were used for the review:

<b>Analysis Parameters Unit 4-0</b>			
<b>Source Type</b>	Point	<b>Location Type</b>	Urban
<b>BHP</b>	198	<b>PM<sub>10</sub> g/hp-hr</b>	0.12
<b>Closest Receptor (m)</b>	91.44	<b>Quad</b>	1
<b>Max Hours per Year</b>	50	<b>Type of Receptor</b>	Business

### III. Conclusion

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 this proposed unit .

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

### IV. Attachments

- A. RMR request from the project engineer
- B. DICE spreadsheet
- C. Facility Summary

## **Appendix D Emission Data Sheet**

## EXHAUST EMISSIONS DATA

## STATEMENT OF EXHAUST EMISSIONS 2013 FPT DIESEL FUELED GENERATOR

The measured emissions 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:	<b>SD100</b>	EPA Certificate Number:	<b>DFPXL06.7DGB-006</b>
kW <sub>e</sub> Rating:	<b>100</b>	CARB Certificate Number:	<b>Not Applicable</b>
Engine Family:	<b>DFPXL06.7DGB</b>	SCAQMD CEP Number:	<b>511715</b>
Engine Model:	<b>F4GE9685A*J</b>	Emission Standard Category:	<b>Tier 3</b>
Rated Engine Power (BHP)*:	<b>198</b>	Certification Type:	<b>Stationary Emergency CI (40 CFR Part 60 Subpart IIII)</b>
Fuel Consumption (gal/hr)*:	<b>10.04</b>		
Aspiration:	<b>Turbo/Aftercooled</b>		
Rated RPM:	<b>1800</b>		

\*Engine Power and Fuel Consumption are declared by the Engine Manufacturer of Record and the U.S. EPA.

<b>Emissions based on engine power of specific Engine Model.</b>			
<b>(These values are actual composite weighted exhaust emissions results over the EPA 5-mode test cycle.)</b>			
	CO	NOx + NMHC	PM
	<b>0.9</b>	<b>3.8</b>	<b>0.16</b>
	<b>0.7</b>	<b>2.8</b>	<b>0.12</b>
			Grams/kW-hr
			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 protocol, which is typically accepted by SCAQMD and other regional authorities.
- No emissions values provided above are to be construed as guarantees of emission levels for any given Generac generator unit.
- Generac Power Systems, Inc. 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 local agencies must be consulted by the permit application/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.

**Appendix E**  
**Title V Modification – Compliance Certification Form**

# San Joaquin Valley Unified Air Pollution Control District

## TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

**I. TYPE OF PERMIT ACTION (Check appropriate box)**

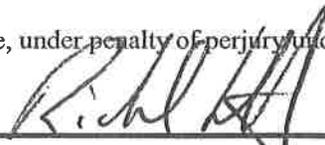
- SIGNIFICANT PERMIT MODIFICATION                       ADMINISTRATIVE  
 MINOR PERMIT MODIFICATION     AMENDMENT

COMPANY NAME: Modesto Irrigation District	FACILITY ID: N- 4940
1. Type of Organization: <input type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input checked="" type="checkbox"/> Utility	
2. Owner's Name: Modesto Irrigation District	
3. Agent to the Owner: Richard Smith	

**II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):**

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

  
 \_\_\_\_\_  
 Signature of Responsible Official

8/2/13  
 \_\_\_\_\_  
 Date

Richard Smith  
 \_\_\_\_\_  
 Name of Responsible Official (please print)

Generation Manager  
 \_\_\_\_\_  
 Title of Responsible Official (please print)